Power and narrative in project management: Lessons learned in recognising the importance of phronesis

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Abstract

Key Words: Complex responsive processes, phronesis, habitus, narrative, thick description, abstract, sense making, project management, reflective, reflexivity, thick simplification

A component part of modern project management practice is the 'lessons learned' activity that is designed to transfer experience and best practice from one project to another, thus improving the practice of project management. The departure point for this thesis is: If we are learning lessons from our experiences in project management, then why are we not better at managing projects?

It is widely cited in most project management literature that 50–70% of all projects fail for one reason or another, a figure that has steadfastly refused to improve over many years.1 My contention is that the current rational approach to understanding lessons learned in project management, one entrenched in the if–then causality of first-order systems thinking where the nature of movement is a 'corrective repetition of the past in order to realise an optimal future state' (Stacey 2011: 301), does not reflect the actual everyday experience of organisational life. I see this as an experience of changing priorities, competing initiatives, unrealistic timescales, evaporation of resources, non-rational decisions based on power relations between actors in the organisations we find ourselves in; and every other manner of challenge that presents itself in modern large commercial organisations. I propose a move away from what I see as the current reductionist view of lessons learned, with its emphasis on objective observation, to one of involved subjective understanding. This is an understanding rooted in the particular experience of the individual acting into the social, an act that necessarily changes both the individual and the social.

My contention is that a narrative approach to sense making as first-order abstractions in the activity of lessons learned within project management is what is

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[1] While there are many industry-specific and cross-industry reports that support this view (Bloch et al 2012; Geneca 2011; KPMG 2010; IBM 2008; CGI 2010; *The Guardian* 2008,) see also Flyvbjerg 2010, the Project Management Institute (PMI) is one of the few that claims that project management is improving;

required if we are to better learn from our experiences. This narrative approach that I have termed ‘thick simplification’ supports learning by enabling the reader of the lessons learned account to situate the ‘lesson learned’ within their own experience through treating the lessons learned as a potential future understanding .This requires a different view of what is going on between people in organisations – one that challenges the current reliance on detached process and recognises the importance of embedded phronesis, the Aristotelian virtue of practical judgement. It is an approach that necessarily ‘focuses attention directly on patterns of human relating, and asks what kind of power relations, ideology and communication they reflect’ (Stacey 2007: 266).

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Contents

Introduction

> Above all, one should not wish to divest existence of its rich ambiguity.
>
> (Nietzsche 1974: 335)

It is the contention of this author that we (the people that constitute the organisations that we find ourselves in) place far too great an importance on a scientific management model of systems thinking as to what it is that we are doing as we go about our ordinary everyday lives of interacting with each other. I also contend that this emphasis on systemic thinking is moving our focus from some 'other thing' that is actually going on as we go about our ordinary everyday lives of interacting with each other.

Before engaging in this research, I would have referred to this 'other thing' as knowhow/local understanding/experience. It is the stuff that cannot be known beforehand because it is particular to the situation in which it is occurs. During this research, I have come to understand this 'other thing' as *phronesis*, the Aristotelian virtue of practical judgement. This is an understanding that enriches the objective scientific view of what it is we are doing with an understanding of experience in the live and lived moment of social interaction that incorporates the fixed notion of technical rationality. It is an understanding that allows for the surprise and novelty of everyday life that is anathema to systems thinking by taking account of how power relations between people influence our actions and how those actions paradoxically enable those power relations that influence them.

This thesis is a narrative account of how my research over the last three years has taken me and my animating question – patterns of human relating and how they are influenced by power and ideology – on a journey of understanding that has led to me explore the role of narrative in organisational change. My research has been situated in project management, the discipline that I was working in at the time of my research, the application of my inquiry being the activity of lessons learned within project management.

As further elaborated in the section on method, this thesis was arrived at through qualitative research where our own experiences expressed within our narratives become the data for our research 'making sense of one's own

experience… of taking one's experience seriously with the aim of reflexively exploring the complex responsive process of human relating' (Stacey 2011: 488). These experiences are explored through four projects written during the course of the research during which we are encouraged to understand the sense we make of everyday experiences in light of the themes we are exploring in our reading.

Project 1 is a reflective narrative of the influences, experiences and ways of thinking that inform my work in organisations and how I think about it. It shows how the questions that are beginning to shape my inquiry have emerged in my life, work, education and reading. Project 2 is a more detailed and critical exploration of the key questions and themes that are emerging, with Project 3 being a detailed account of experiences of organisational change in which I have been involved as a manager which situates my research in relation to various approaches to understanding the issues raised. Project 4 is a further account of organisational change that explores my work, and how I think about it informed by the theoretical base and awareness of broader issues raised through my research. It also indicates how my research is contributing to the work and thought of my professional community.

There then follows a Synopsis, in which I briefly review each project before commenting on the movement of thought during each project and perform a critical review of the sense that I am now making of my experience. This is followed by a review of my research through discussion of the main themes that have emerged in my work and the line of argument they represent. The section on Method explains how I went about my research and why I chose this approach, along with a statement on ethics.

Finally, I summarise my research and give a clear account of my contribution to knowledge and practice – namely that my exploration of the nature of knowing as a reflexive act leads me to argue that in order to be of use, knowledge from lessons learned needs to be presented as an instrument into a new situation as opposed to merely an elaboration of a previous situation. Effective and appropriate use of this instrument requires the conditions of its original creation to be known. The conditions of its origin being related through a narrative approach to sense-making as first-order abstractions that I have termed 'thick simplification' – an approach that

does not seek to over-abstract, but purposely leaves the personal experience in, the mechanism by which we then make sense of this experience being phronesis.

Project 1

The emergence of power and rationality as a central theme of my enquiry

Introduction: My life and my emerging struggle for understanding

I was born in Wolverhampton, West Midlands, into a working-class family. My mother had given up her career to raise children and my father was the owner of small engineering company manufacturing dies for use in injection moulding. I was the eldest of four children and in general had a happy, secure, predictable childhood.

I found senior school troublesome. I never quite felt that I fitted in, and often felt I was being picked on. I got into a lot of fights, but was convinced that I never started any. I was not 'hard' enough to be one of the alpha males, not cool enough to be accepted by them, not invisible enough to be left alone or ignored by them. Neither was I convinced that my life should be dictated by them. It felt to me then as though I was living somewhere on the edge of something – not quiet excluded, not quite included. A place far from equilibrium, which – as I found out then, and continued to experience in later life – can be a painful, yet rewarding place to be: a place of discovery.

My academic achievement was nothing out of the ordinary. I played sports for the school teams for the first 3 years of my school life until the rest of the pupils physically outgrew me; I left school at age 16, with five 'O' levels in technical subjects, to start an engineering apprenticeship. I was advised by tutors to stay on and do 'A' levels, as did most of my friends; but I think by then I had truly had enough of school and was glad to get out.

Since leaving school, I have had broad and varied experiences in my professional and personal life, as summarised in Table 1. This project is an introduction to some of those thoughts and experiences that have shaped my life and how I have come to be here, now, trying to understand how considering an organisation as responsive processes –'focussing attention directly on patterns of human relating, and asking what kind of power relations, ideology and communication they reflect' (Stacey 2007: 266) – can help better understand how

organisations work and how we, as managers and leaders, can improve that understanding in our work within organisations.

Table 1 Listing of employment/outlook and influences

• Employer	• Roles	• Outlook	• Me (interests/influences)
• Various	• Apprentice • Press setter	• ONC • HNC • Work to live	• It was all about me
• BBS	• Toolmaker • Production engineer • Engineering supervisor • Engineering manager • Manufacturing management	• Systems thinking • TPS (Lean) • Quality systems (ISO 9001, etc) • Technical orientation	• It was all about me
• Collins Controls	• Production engineer • Production engineering manager	• Commerce • Frustrated technical orientation	• It was all about Diane and me
• Reingold Latts	• Technical support manager	• Lean expertise • Technical expert • Beginnings of interest in organisational functioning	• Family • William born • Marriage to Diane • OU Postgrad Diploma in Manufacturing Management and Technology
• Sanford Cotts	• Manufacturing manager • Quality manager • UK operations planning manager	• Lean expertise • Technical expert • Customer/commercial exposure • Anthropocentric systems • Complex adaptive systems • Organisational change/management • Organisations as non-liner systems • Emergence	• Complexity awareness • Edge of order and chaos • Complex adaptive scheduling systems
• Goxhay	• Operations manager • Finance • Lean leader • Project management	• Organisational change/management • Organisations as non-linear systems • Emergence	• Client-centred consulting • Fostering • DMan

From Brockhouse Castings to Bristol Bending Services (BBS)

After many failed applications for apprenticeships within the declining West Midlands and UK manufacturing base (it was then 1982, and the country was mid-recession), I attained a sponsored placement for the first year of a technical apprenticeship. At the end of the first year, two of the apprentices had to find placements elsewhere to continue their apprenticeship; I was one of them. I found a

placement at a company called Brockhouse Castings Ltd, a steel foundry located in the village of Wednesfield where I lived.

I still find it amazing that places like that existed in my lifetime. Positive relations between the management and the workforce were non-existent; and there was no investment in the decrepit plant, with the management holed up in their equally decrepit offices only visiting the shop floor when absolutely necessary, normally to enforce rules or mete out punishment for not obeying rules they had failed to enforce. The working conditions would be considered illegal by modern day standards: lunchtime drinking, pictures of naked women, and the highlight of the week being the queue outside the wages office on payday. There was certainly no talk of strategic choice theory or learning organisations here. After 2 years of this, I was ready to quit.

A few years and a few employers later (my outlook was definitely 'work to live', not 'live to work'), I found myself in Bristol with a job as a toolmaker at Bristol Bending Services (BBS), a small/medium enterprise (SME) that supplied bent tubular components to the automotive industry. At about the time I joined in 1990, BBS was undergoing something of a renaissance, evolving from a traditional jobbing shop providing low-volume runs of assorted components, to an approved supplier to the UK automotive industry supplying quality-assured logistical assemblies to customers with high expectations of quality and low tolerance to price. BBS, and I, became familiar with all the supplier quality manuals that Honda, Nissan, Lucas, Bosch, Ford and others could throw at us. I lapped it up. Although I did not know it at the time, I was getting exposure to what I would now understand as a systems approach to organising the activity of work, which 'seeks to understand the phenomena as a whole formed by the interaction of the parts' (Stacey 2007: 40). As BBS grew and embraced this new mantra, so did I; my role progressed from toolmaker through supervisory roles to some junior management positions, until at the age of 29 I was appointed Technical Manager of the Pressings company that constituted one of the members of the groups of companies.

My final role with the company was as Project Launch Engineer. We had won a prestigious contract supplying a significant new customer with fuel tank parts. This new and important client wanted us to give up what we knew best – traditional batch production, where a whole batch or transportation lot of components have one

production operation performed on all of them, then the next operation performed on them, and so on, until the completed product has been produced – in favour of their own production system, which was based on a concept of 'one piece flow' in which 'each transportation lot is equivalent to one piece' (Shingo 1989: 100). This system is known under various guises as 'Just in time' or 'Lean' manufacturing, and is acknowledged to have been pioneered by Toyota in Japan (Womack et al 1990: 11). I knew it as the Toyota Production System (TPS), and I loved it: its clarity of purpose and systemic approach to shop floor organisation rang true and made absolute sense to me. I was beguiled by its simplicity, completeness, and the effectiveness I witnessed and achieved through its application in the automotive industry. Later, I was bewildered to find in other companies that I could not always emulate the success I had achieved at BBS; at the time, I attributed our success with TPS to the efficiency of the tool we were deploying. I thought it had some inherent infallibility that could be weighed, measured and recognised as such by all through logical argument.

I now consider that the success of change – such as the introduction of TPS – cannot simply be attributed to the appropriateness of the method for the technical environment into which it is being applied. It now seems to me that any success is equally due to the fit of the approach with the existing 'conversations' within the company. In this context, I am recognising that it is 'the activity of conversation itself [that] is the key process through which forms of organising are dynamically sustained and changed' (Shaw 2002: 10). This is different from the view I held when working at BBS: my understanding of change then was that it was something that was *done to* the company, by some agent external to the activity being changed; that the best course of action could be selected and implemented by following some prescribed approach to change management; and that through faithful adherence to that approach, the change would be accepted by all. I now see change in organisations as far from following a predictable path prescribed by some external agent. My experience of change has been that it is wholly dependent on the sense made of the change initiative by the people being affected by the change.

Shotter, in his work on conversational realities, argues that 'the primary human reality is persons in ordinary everyday conversation' (Griffin 2002: 134); it is in the 'intermediacy, undecidability and ambivalence in which different people meet

each other in the socially constructed encounters of everyday life, that political struggles are their most intense' (Shotter 1993: 38). It is in these everyday conversations that sense is made of the change initiatives that engineers such as myself were introducing to the organisations we worked in. I now understand it to be the efficacy of these conversations, rather than the change process itself, that is instrumental in effecting change. This is not to undermine the value of tools, business models and plans; as Shaw (2002: 28) contends, 'focus is more on how we devise them and make use of them as important props for the drama'. The sense I make of this now, in light of the successful application of TPS, is that we were lucky. The tool we were deploying happened to align with what was happening in BBS at the time, therefore enabling its successful implementation while at the same time joining in with and forming the conversations taking place within the organisation.

In the 15 years since leaving BBS, I have continued to enjoy swift career progression within all the organisations that I have worked for, typically achieving promotion every 3 years or so. It has not all been smooth sailing: I have often been accused of 'sticking my head above the parapet', and there have been occasions when this has indeed put me at odds with the organisation I was working for. It is these occasions that I will examine further, asking why the approach that worked so well through most of my working life went so disastrously wrong and how I now make sense of this in light of what I have learnt in my experiences of the DMan programme.

Collins Controls, 1996–1998

I was approached about a role with a company in Gloucester, Collins Controls – a small outfit making pneumatic actuators for the continuous processing industries (e.g. petrochemical, pharmaceutical, processed food). I was invited for interview on the strength of my experience with computer numerical control (CNC) machine tool programming, but employed on the basis of my expertise in designing manufacturing assembly lines, an expertise I had strengthened while at BBS. As I recall from my interview, Peter Finks (the manufacturing manager at the time of my appointment, and the one who hired me) explained the situation in the following terms:

> We know what we are doing with the machining side of our operation; where we need help is with the assembly of the product. We currently have an assembly shop that at the start of the day will have a bunch of people stood at one end of the shop and a bunch of components at the other end. If we're lucky, maybe we get some product that we can sell to the customer at the end of the day; or maybe not.

This was a big departure for me. In taking this role, I had gone from one of a number of players in an organisation who shared some common understanding about how things should be done (the manufacturing principles in use at BBS were gaining more widespread acceptance throughout the organisation) to being the one in an organisation who was being asked to come and show them how things should be done. At least, this was my perception of the challenge ahead.

My thoughts at that time were that there was an ideal way of doing things, and that if the correct methods were applied to a problem, then an optimal solution would be found that would be recognised as such by everyone. I viewed every problem in terms of 'hard systems' – that is, as a situation where 'problems and opportunities can be clearly defined' as opposed to the 'soft systems' approach, where 'there is little or no agreement about the problem' (Open University 1997: 56, Block 1). I redesigned the old assembly area along flow line principles, with clear visual management and minimal supervisory requirements. I worked with the design team to establish Design for Manufacture and Assembly (DFMA) principles that 'cut out wasteful practices in product design and delivery' (Schonberger 1996: 33). I installed a state-of-the-art assembly facility for the new product, the 'Genesis' actuator.

One of the principles that I introduced to the assembly area of Collins was that of 'one-piece flow'. Traditional manufacturing wisdom decreed that products were produced in batches, which absorbs the set-up time and costs for that activity to take place. If there was a production run of 30 actuators of a particular size, then the operators in the assembly area would assemble all 30 of the pistons, before assembling all 30 of the pinions, before assembling all 30 of the end caps, before final assembly of all 30 actuators.

One-piece flow seeks to improve upon batch manufacture by designing the production environment such that one product is made completely before the next is

started, thus removing excess work in progress (WIP) and enabling short lead-time manufacture. This approach enables quality problems to be addressed in real time, without the need for non-value-added inspection. These and other benefits of one-piece flow make it an attractive proposition for the owners and management of organisations, but not necessarily so for the people working on the production lines. One-piece flow can be counterintuitive, going against the established wisdom of economic batch quantities, and confronting a more primordial need within us: the need to have security in the form of a visible pile of work that we can get stuck into.

These fears came into sharp focus when the operators in the assembly area put up fierce resistance to my plans to introduce one-piece flow, on the basis that it would take longer on account of the set-up times. I was certain that I knew otherwise; and in an attempt to address these concerns with the assembly workforce, I arranged a trial on the shop floor with one of the more receptive assembly operators, an amiable chap called Mervin.

Lessons from Mervin

I had set the experiment up thus: two sets of ten off-piston assemblies for one of our more common actuators were to be assembled. The first set would follow the established batch method preferred by the assembly operators; the second batch would be assembled using the one-piece flow method, each piston being completely assembled before the next was started. The shop floor operators were confident that their way, which reduced the need to pick up and put down tools, was the quickest; but I was confident that the increased time to pick up and put down tools would be offset by the reduction in handling of the components themselves. This was, after all, not the first time I had done this exercise.

So the stage was set: one workstation with 10 piston sets in their deliver boxes, all tooling required to do the job, Mervin, me, and a stopwatch. When Mervin was ready, I started the stopwatch, left it resting on the work surface (so that there could be no accusation of fiddling the timings), and let Mervin get on with building the 10 piston assemblies in the favoured batch method. When Mervin had completed all 10, the clock was stopped and the time recorded. After resetting the workplace, Mervin then assembled 10 more pistons following my instructions for one-piece flow. His movements were more awkward than his fluid actions in the more familiar

working practice; he faltered once or twice as he remembered what he had to do next. Ten pistons later, the clock was stopped, the time recorded and compared to the time taken for the first run. To my surprise, the time for the second run was quicker than the first run. While I knew that one-piece flow would take no longer than batch manufacture for an experienced operator, I was expecting the first run-through of a new approach to be slightly longer. That was OK: I wanted to make the point that the one-piece flow approach was not as bad as they had feared – so for it to have been quicker than batch and queue was surely a greater victory than I had hoped for. I was wrong.

Faced with the empirical, irrefutable evidence of the stopwatch timing to demonstrate the superiority of one-piece flow versus batch manufacture, Mervin's response put me firmly in my place. His response was not defensive response, nor made out of ignorance or denial (as mentioned, I had chosen Mervin because of his open approach to what I was trying to do), but out of absolute belief – an absolute belief that was (and probably still is) as unshakeable as mine. An absolute belief that what he was doing was right; an absolute belief that led to Mervin's response to my stopwatch evidence that the one-piece flow method took less time than the batch and queue being:

'Mick, your way may take less time, but mine is still quicker'.

That was the last time I ever used a stopwatch on the shop floor. What Mervin taught me was that there are no absolute truths when it comes to organisational life.

Rational management

Harold Greenen, the former CEO of ITT, used to demand 'unshakeable facts' from his management team. In 1965, he wrote a terse memo to his subordinates:

> Effective immediately I want every report, specifically, directly and bluntly to state at the beginning a summary of unshakeable facts... the highest art of management requires the ability to smell a real fact from all others – and moreover to have the temerity, intellectual curiosity, guts and or impoliteness if necessary, to be sure that what you have is indeed what we call an unshakable fact. (Pascale & Athos 1982: 62)

My thinking at the time was that, like Greenen, I believed in *rational management* (Open University 1997: 18, Block 1). I was certain that everything I would encounter in manufacturing organisations was measurable, understandable, and abided by some universal truth; all one had to do was identify and reveal that truth to everyone else, who would also recognise it as truth – then just do it.

By 'truth', I was thinking in terms of the type of truth that Foucault referred to as 'the ensemble of truths to be discovered and accepted' (Foucault 1994: 132). This is a view that truth is absolute – no matter how, when or by whom it is viewed. At the time I was working in Collins Controls, I saw the role of the manager, my role, as discovering this ensemble of truths that were there to be discovered, and that once discovered they would be accepted by all. Given what had happened with Mervin, this was clearly not the case: what was irrefutable truth to me, supported by tangible and undeniable evidence, was not automatically accepted as truth by others.

Foucault opposes his explanation of truth as 'the ensemble of truths to be discovered and accepted' with an understanding of truth as 'the ensemble of rules according to which the true and the false are separated and specific effects of power attached to the true' (Foucault 1994: 132). In this representation of truth, truth is not absolute, unchanging, but subject to constant economic and political enticement. What is true is only true because of its 'circular relationship with systems of power that produce and sustain it' (ibid: 132). Truth is not only open to interpretation by the organisation in which it is perceived; it is only true *because* of the interpretation of the organisation in which it is perceived. Furthermore, the organisational life in which truth is produced and sustained is not a static, absolute scientific endeavour aimed at resolving today's problems in the most economical way. 'An organisation is a collection of choices looking for problems, issues and feelings looking for decision situations in which they may be aired, solutions looking for issues to which they might be the answer and decision makers looking for work' (Wheatley 1999: 56).

This understanding of truth – as relative to the organisation in which it is based – together with a realisation of the organisational world around us being not absolute, but a collection of choices, opinions and feelings, was a difficult concept to integrate for the 30-year-old engineer who had built his success on an understanding of an absolute world within the boundaries of the organisations he had been working

in. I was starting to get an inkling that there were other forces at work. The question that arose was: If it is not that these things that I do, the acts that I undertake, are universally correct and true, then why am I having such success? Enter Mr Finks.

Power within Collins Controls

When I joined the company, Peter Finks was the engineering manager at Collins; he was also the manager that recruited me. A lifelong employee with the company, he had worked his way up from the shop floor to a relatively senior position and he was not prepared to stop there, later going on to become Manufacturing Director. To start with, Peter and I got on well; and I discovered that a good relationship with Peter was the key to a successful and pain-free life at Collins – indeed, it could at times appear to be far more crucial than being good at your job. This manifested itself in a number of ways, mostly harmless: for example, it was apparent that whatever Peter's current fad (be it sports bikes, computer games, musical preference, or assessment of the 'fittest bird' in the office), the rest of the office – particularly the males, seemed to automatically align themselves with his tastes. I did not deliberately set out to challenge or contest his position in the hierarchy, far from it; I was just being myself and expressing my views, which happened to differ from his – not just on which sports bike was the best, but also on some fundamental issues about how he was running the company. When we clashed, my defence of 'only trying to help' was not accepted. An example of our conflict was the stocking strategy for the new Genesis range of actuators that we were launching.

I had recently been promoted to be in charge of the manufacturing support department, which – along with the assembly area I had been recruited to improve – included the support for CNC machine shop and the tool room that supported it. My promotion after just 9 months was proof that what I was doing was appreciated by the company: Collins was very focused on sales, and the regional sales offices would dictate what was manufactured and when. Though one of the legitimate themes of the company ('the kinds of conversation you readily engage in with others even if you do not know them that well', according to Stacey [2007: 379]) was the need to minimise cost and focus on quality, Peter Finks was acutely aware that failing to deliver to the sales outlets on time was a good way to end your career at Collins. This could be described as the 'shadow theme' of the company, the conversations in

which ‘people feel able to give less acceptable accounts of themselves and their actions’ (ibid: 379). The sales department was in charge; and although outwardly we all spoke about a ‘lean’ enterprise as the official ideology of the company, the unofficial ideology was not to fail sales orders. You would get a telling-off for over-running on cost, but you would get the sack for failing sales orders.

The sales teams had indicated high orders once the new Genesis product was launched; in order to ensure that we met those orders, the manufacturing facility had decided to build significant stock holding ahead of the launch. This was anathema to me, and flew in the face of all I knew about lean manufacturing. It was also contrary to the legitimate theme of the company of reducing cost. I suggested a different approach, proposing that we only built minimal stock through our new one-piece flow production line – still satisfying customer demand, but without incurring the costly and time-consuming process of building stock. This approach reduced the risk associated with overproduction of stock for which we had no firm orders as yet, only optimistic sales forecasts. My proposal was met with absolute rejection. I was told in no uncertain terms that I did not know what I was talking about; that my idea was all very well in theory, but I should stick to doing what I was employed to do. This made me argue the case more strongly, convinced that I was right. Everything I knew about modern manufacturing supported my stance; and was not this why the company asked me to work for them – to share this modern way of working? I was blind to the established power plays at work: the senior salesmen who had built their reputations on forecasting the market; Peter Finks, who had made his name by being the person who knew about manufacturing the product to suit the markets need. Here was I, diminishing the importance of their long-established approach by building a flexible production system that aligned to the legitimate themes but undermined the shadow themes of the organisation.

What happened next had the air of a self-fulfilling prophecy. After the launch of our product, a competitor released a new product of their own, with some enhanced features that ours lacked. This caused a redesign that had to wait for introduction because we had stock piles of old design actuators to sell that had been manufactured on the sales forecast figures. I did not even attempt an ‘I told you so’, the relationship between Peter Finks and myself having deteriorated to the point that he asked me into his office one night and suggested I leave the company – not

through any performance issues, but simply because he did not like me and was uncomfortable working with me.

Looking back, what I had failed to recognise was the relationship between power and rationality at play in Collins – how the views of the powerful people within the organisation could dictate what was accepted as the correct or rational thing to do. This opposed my thinking at the time that the correct thing to do must have some universal truth that, once proven in one organisation, was transferable and recognisable in another. In his review of power and rationality in the Danish town of Aalborg's planning department, Flyvbjerg relates to this concept of rationality to being dependant on the power relations within the organisation it is observed acting within, and talks extensively about how 'rationality is context dependent; the context of rationality is power' (Flyvbjerg 1998: 97). By this, Flyvbjerg is positing that 'Power does not seek knowledge out of a Baconian imperative, rather power *defines* what counts as knowledge and rationality and ultimately... what counts as reality' (ibid: 27).

This is the sense that I now make of what I experienced at Collins. The knowledge that I brought with me, the experience and expertise, the views I had developed within my time at BBS and what had counted as reality in the previous organisation had continued to count as reality at the start of my time at Collins. In light of my learning on the DMan, I now understand this to have been through the power relations within Collins supporting those views, rather than some universal unshakeable truth that was unmistakably recognisable as reality in any environment. Latterly, when the views that I brought with me threatened rather than supported the aims and goals of the senior management team, it was no longer profitable for the power relations in Collins to support me. The same views for which I had been applauded early on in my time at Collins, the views that saw me promoted to lead the manufacturing engineering department and be summoned to the company headquarters in Florida to transform their assembly plant along the lines of the work done in the UK – those same views were now lambasted as naive and inappropriate, to the extent that they threatened my continued employment with the company.

In light of this, it is clear that my early successes in the company were not only due to the technical correctness of my approach. Success could not simply be attributed to what I and the town planners in Aalborg believed – that a 'technically

good plan would implement itself' (Flyvbjerg 1998: 122). My early successes in the company derived from Peter Finks' support – partly because he liked me, and partly because his boss (Stephen Parks, the MD) clearly backed me. A backing that once lost, left me in an untenable position without the backing from the power that had made my actions rational. Furthermore, my refusal to shift my view of rationality in line with the power that defined the rationality in Collins served to alienate and ostracise myself from the others.

Reingold Latts, Sanford Cotts and the move away from hard systems

Over the next 5 years, I worked for two companies: Reingold Latts, a supplier of car seat sets for Honda and Rover in the UK; and Sanford Cotts, a US-owned furniture manufacturing company based in Bath. During this time, I had started an MSc in manufacturing management and technology with the Open University (OU). My studies introduced me to the world of operational research and more systems thinking and cybernetics theory. It also introduced me to hard systems and soft systems methodology – an approach developed by Checkland and Scholes, who found that 'the management situations [they] worked in were always too complex for straightforward application of the systems engineering approach'(Checkland 1999: 6).

During this time, I had had a number of successes implementing some processes within the planning department at Sanford Cotts, which at the time I referred to as *autonomated* process. Autonomation, a term from the Toyota Production System, was the closest description I could find at the time; it refers to 'automation with a human touch' (Shingo 1989: 58). I felt the term was appropriate because – rather than being strict top-down processes that I or someone else had put in place and then insisted be followed – they were a more open framework approach that allowed (indeed, encouraged) local input. However, the term was not entirely accurate; it was not until a year so later, when I stumbled across M. Mitchell Waldrop's book *Complexity: The Emerging Science at the Edge of Order and Chaos* (Waldrop 1992), that I began to recognise some of the traits of complex adaptive systems and self-organisation in the work that we did with the planning department at Sanford Cotts.

Goxhay: 2003 onwards

The past 7 years of my working career have been spent working for the UK commercial aircraft component manufacturer, Goxhay. I joined the company as a process unit manager (PUM), responsible for a manufacturing and assembly department within the integrated machining facility (IMF) at their manufacturing facility in Parkstown.

Goxhay was then in the middle of its own lean change programme, GLPS (Goxhay Lean Production System), and it was my past experience of lean manufacturing in the automotive industry that secured me the role. Thus it came as some surprise that the tools and approaches that I had used with great success, and which had ultimately lead to my appointment in this role, were not at all welcome in the IMF. My continued peddling of what I believed to be 'right' ultimately stifled my career progression; at one point, I almost found myself being entered into the company capability procedure for poor performance – something that has never happened to me before or since.

So why did that happen? How did all of the experience that I knew to be right about manufacturing process and procedures, the experience that (I felt) I had been recruited into the company to advise on and implement, meet with such outright rejection? My reflections on that time are that the espoused behaviours of the company, the model against which they recruited me and against which I accepted the role, were not the actual behaviours of the part of the company that I found myself in. The drive for lean manufacturing, though keenly promoted in the company literature and internal productivity incentives, in practice was not the drive of the IMF management team, nor of its leader, Ian Charming – the head of business at the time of my employment, who originally recruited me to be his replacement and who ultimately initiated the capability procedure against me. So why was it that the clearly stated strategic aims and goals of the wider organisation (Goxhay) did not hold sway in the local organisation, the IMF?

The traditional view of communication is the sender–receiver model typified in cybernetic systems, which 'encourages us to believe that good communication will enable us to get it right' (Stacey 2007: 274). As long as I translate my thoughts clearly into language and you translate my clear words clearly into thought, then our communication will be good. Mead, in his model of communication (what he

describes as the ‘logical structure of meaning’), says that meaning is not to be found in the words or language alone of the sender; rather, it ‘is to be found in the threefold relationship of gesture to adjustive response and the resultant of the given social act’ (Mead 1934: 80). Stacey (2007: 274) elaborates that ‘the meaning does not lie in my words alone, but emerges in the words and the responses they evoke in others taken together‘. He goes on further to say that:

> From this perspective, one can no longer think of the strategic plan as one of communication which must be got right. Instead one comes to see the activities of strategising as ongoing conversational processes, essentially involving emotion and fantasy as well as reason and all other aspects of conversation.

I now reflect that this understanding of strategic plan communication is key in understanding the difference between the local conditions in the IMF and the broader strategic intent of Goxhay. Goxhay, the company may well have intended to implement lean manufacturing within all areas of their manufacturing activities, but the communication of that intent had stopped at the sender–receiver model of good communication. What had not been done was to consider strategy in the context of the ongoing conversational processes. This is not to say that the process of ongoing conversation did not take place; clearly it did, but only in the local conversations of the people within the IMF. It developed in line with the emotions, fantasies, fears and hopes of the local IMF team – independent of, and without the inclusion of, those who started the conversation of the strategic intent. The IMF’s own strategic intent, therefore, did not necessarily match that espoused by the Goxhay organisation, against which I had been selected.

I have never felt as low in my professional career as I did at that point in time. I had no idea how to respond to the allegations that my work was not up to scratch. It seemed pointless to resort to the usual measures of success – the raft of key performance indicators (KPIs) that festooned the control room wall – and protest that I was achieving all of my targets, as stated in my performance appraisal. When I attempted this, the criticism turned to *how* I was achieving them. It became a question of my behaviours at work – behaviours that were clearly aggravating someone, somewhere. Though the mention of these behaviours was sufficient to engage HR in the capability process (a formal process that ultimately could lead to

my ejection from the company), they could not be defined precisely enough to allow me to defend my position. Whatever those behaviours were, they clearly put me at odds with some of the members of the management team within the IMF – not least with my manager, Mr Charming.

This experience will strike a chord with any employee who has had the misfortune to find themselves at odds with the team they are working in. Ian Charming did not like me, despite sanctioning my actions (I sought his approval both before and during any initiative that I undertook). In the belief that I was doing what had been agreed, I continued to discharge what were unpopular lean practices within the IMF management team. In doing so, I continually checked that I had approval from my boss, who – as far as I could tell – encouraged me to do exactly the things that I was now being challenged about by the rest of the management team, with whom his allegiances lay, and with whom he sided.

At the time, I was ignorant of the actual values and beliefs of the IMF team. Looking back now, I doubt I would have been capable of aiming at any other values and beliefs other than the ones for which I was recruited into the company; however, I might have been more careful how I went about it.

It appears to me now that once again it was the patterns of human relating, power relations, ideology and communication that shaped the environment – not just within the IMF, but also outside the immediate team. Fortunately, I was thrown a lifeline in the form of a move to another department, and Ian Charming forgot to pursue the capability process he had initiated. I was absolutely furious at the time that after all the grief that I had been through, the soul-searching, the self-doubt, the feelings of abject helplessness of not knowing how to respond to the accusations of poor performance and inappropriate behaviour, my toolbox empty, my spirit broken, it was now no longer an issue that warranted the time and attention of the processes that had been put in place. Once again it was power that was defining rationality, a rationality that this time fell in my favour. Had it not, I may no longer be enjoying continued success in my employment with Goxhay.

After 2 years of rebuilding my personal and professional reputation, and further appointments where I have once again been successful in career, I am now recognised by the company's official HR mechanisms as a 'high potential' employee capable of progression to at least two operating levels above my current position.

The irony that these same HR processes nearly had me exiting the company is not lost on me.

Reflecting on this period, I place importance not so much on my relationship with Ian, but on how that influenced the other relationships around us: how his position of power formed the rationality of what was right and what was wrong, even to the extent of influencing what was viewed as the entry criteria into the company's disciplinary procedure.

At the start of this project, I expressed an interest in trying to understand how considering an organisation as responsive processes – 'focussing attention directly on patterns of human relating, and asking what kind of power relations, ideology and communication they reflect' (Stacey 2007: 266) – can help better understand how organisations work and how we, as managers and leaders, can improve that understanding in our work within organisations. I have given examples of how ignoring the patterns of human relating, the power relations and the communications they reflect may have contributed to episodes of failure in what has otherwise been a reasonably successful career. These examples have explained how I now start to make sense of these failures in light of the experiences of the programme. I no longer attribute success or failure in any given organisation to the correct application of knowledge or skills; while these can certainly influence power relations favourably, on their own they are insufficient to ensure success.

Dick Morley reflects on a similar experience in *The Technology Machine* (Moody & Morley 1999: 132), describing how he and his company replaced the traditional scheduling system for the truck paint line in GM's Fort Wayne plant. The new complex adaptive planning system they installed placed simple 'chicken brain' computers in each of the five paint booths that supported the truck production line; each booth would bid to paint the next truck that came along, based on some simple rules for bidding (e.g. high bid if the next truck is the same colour as the last truck you painted; low bid if you are still painting a truck; high bid if you are fully functioning and not due any planned maintenance). Although the input was simple, the resultant output was complex and adaptive; the paint booths managed their own activities far more efficiently than they had under the complicated scheduling algorithms in place previously, processing more trucks and using less paint. However, a few years later, when the physical manipulation part of the system was

changed from pneumatic to hydraulic (a change necessitating a new control system), the management team reverted to a traditional control system that ran from a production schedule, rather than continuing with the complex adaptive system that had measurably demonstrated its superiority. Ernest Vahala, then director of manufacturing engineering for GM's worldwide truck group, offered the explanation that 'There continues to be resistance to chaos because people don't understand it. It defies good logic' (Fast Company 1995). It would seem that the managers felt they needed a schedule to manage to, the absence of which was sufficiently uncomfortable for them to elect a less efficient solution to their problem. Once again, rather than some absolute measure determining the correct course of action (cost, time to market, quality), it was power that defined rationality. In following projects, I would like to explore further the importance of power, power relations, and power as defining rationality.

Elias argues that power is not a thing that someone possesses, but 'a structural characteristic of all human relations' (Elias 1970: 93), the basis of power being that we need others more than they need us. In making sense of this, I understand power to be something that is given in a particular relationship, not something that is owned by an individual to be wielded in all instances.

Foucault, in his work on truth and power, talks of how discontinuous change in the scientific world is not so dependent on change of content (refutation of old errors, recovery of old truths), nor a change in theoretical form (renewal of a paradigm, modification of systematic ensembles). Rather, the important thing in the hastening of evolution at certain moments and in certain orders of knowledge is 'a question of what governs statements, and the way in which they govern each other so as to constitute a set of propositions that are scientifically acceptable' (Foucault 1994: 114). It appears to me that the inverse is also true: not only is a change in the power relations of what is acceptable necessary to support discontinuous change, but a change in the power relations can also bring about discontinuous change in what is currently held to be true – whether that change in power relations be brought about by a physical change in the people (and subsequent shift in the power relations), or a change of environment in what is currently held to be true.

Current role: Head of Project Management for Research & Development (R&D), Goxhay UK

In my current role, I am tasked with deploying the corporate project management standard to the R&D community in the UK. In light of my experiences and reading during the first 6 months of the DMan course, I identify the approach that Goxhay is taking in this deployment as consistent with what Stacey (2007) describes as the 'dominant discourse'. Stacey lists five assumptions that the dominant discourse is understood to include, each of which I can identify within the Goxhay organisation:

1. The organisation is thought of as if it were a system.

Goxhay has a matrix structure consisting of Centres of Competence (CoC) and Centres of Excellence (CoE), with functions and interdependence between centres mapped.

2. The systems are external to the individuals forming them.

The CoC that I belong to, Project & Programme Management, has been 'established' by a team of internal consultants and is now being deployed to the organisation.

3. It is the individual who is primary.

The mission of the CoC is to improve the level of project management within Goxhay through the deployment of trained and competent project managers, the focus being on individual competency.

4. The notion of the organisation and the social as systems being constructed by the actions of individuals, with those constructions then acting back on individuals as a cause of their behaviour.

The institution of the CoC is expressly to influence the behaviours of the project management population within Goxhay.

5. Individuals can plan, design or at the very least influence the movement of the system.

There is a central steering committee established to monitor and control the deployment of the Project & Programme Management CoC.

I can further identify the approach that Goxhay is taking in deploying Project & Programme Management with what I have earlier described as *rational management* – an approach that assumes that unshakeable truths are 'out there' to be discovered and accepted. I feel that senior management within the CoC, and Goxhay in general, believe in hard-system problems that can only be resolved by a systemic approach – one that requires application of the correct tools. In short, they believe – as I and the town of planners of Aalborg once did – that a 'technically good plan would implement itself' (Flyvbjerg 1998: 122).

Summary

If there are no universal truths – if truth is 'the ensemble of rules according to which the true and the false are separated and specific effects of power attached to the true' (Foucault 1994: 132), and if power is 'a relational, ongoing process of configuring power relations between people' (Elias, as interpreted in Stacey 2007: 353) – then why is it that the dominant management discourse, those organisational thinkers who think in terms of cybernetic systems of cause and effect, still hold on to the premise of strategic choice theory, despite little evidence to suggest that it ever works as expected?

> Despite the massive increase in the numbers of professionally educated managers and the millions of pieces of research there is, however, no adequate scientific evidence base for the dominant prescriptions for managing and leading organisations. (Stacey 2010: x)

The area that I would like to focus my enquiry on is that of project management within Goxhay. Project management is a discipline that demonstrates high dependence on the deployment of tools (such as Gantt charts, PERT charts, earned value analysis, risk management, critical path analysis) to achieve its stated goals of delivery to time, cost and quality. I would associate this with the approach of strategic choice theory, with its emphasis on cause and effect rather than understanding the emergence of form through patterns of communication and interaction between power relations and ideology.

For example, PRINCE2® (Projects in Controlled Environments), a standard used widely by the UK government and in the private sector worldwide, lists its key features as:

- Focus on business justification
- Defined organisation structure for the project management team
- Product-based planning approach
- Emphasis on dividing the project into manageable and controllable stages
- Flexibility to be applied at a level appropriate to the project.[2]

Goxhay's own standard on project management, PM Body of Knowledge (PMBOK; heavily modelled on the Project Management Institute Body Of Knowledge [PMIBOK], the American project management standard), majors on modules such as monitoring and control and project execution and project closure. Yes, we do have a section on the human factors of project management, which touches on the importance of stakeholders and introduces the human relation work of McGregor (1960), Herzberg (1993) and others. But this is barely more than a pamphlet in the vast documentation of project management within Goxhay.

In the words of Galbraith and Lawler, 'Ultimately there may be no long-term advantage other than the ability to organise and manage' (Grant 2002: 187). I believe that it the professional, moral, social and ethical obligation of management to organise efficient and effective enterprise on behalf of the organisations they are working for and the broader societies within which those organisations function.

The question that is beginning to form for me is: Is there a benefit in project managers focusing attention on how patterns of human relating are influenced by power relations, ideology and communication in exercising the discipline of project management?

[2] See http://www.prince2.com/what-is-prince2.

Project 2

Power and rationality in establishing the UK Research & Development plateau at Goxhay

UK Research & Development

My current role is as Head of Project Management for the UK Research and Development (R&D) plateau for an aircraft manufacturing company that I shall refer to as Goxhay. It is a new role in a new department whose purpose is to introduce project and programme management practices into R&D within Goxhay. The word *plateau* refers to the physical facility where the R&D engineers are located, and to the intent of having the R&D community working from the same level platform as each other. R&D has a budget of about €350 million per annum, employing around 800 engineers within Goxhay and engaging many more engineers indirectly within the supply chain. It has been undergoing a structural change over the past 2 years, in an attempt to address criticisms that it does not deliver new technologies on time, at anticipated cost, and to the required quality level. My role is to lead this ongoing change within R&D in the UK. The primary focus of this initiative over the last 12 months has been the establishment of the UK R&D Plateau.

In this project, I will explore the power relations I have observed in the process of determining who is located where on the UK R&D plateau and how those power relations have defined the 'rational thing to do'. I will contrast what I observed against what was expected to happen, according to the views apparently espoused by the company as to how this change should be managed using the tools and techniques of project management. I will be looking at what did happen; how the rational thing to do changed, as the power relations that supported it changed; and asking the question whether we can better understand what happened by viewing the Goxhay community not as a 'thing', a reification to which we can apply tools and processes that have a strong cause–effect relationship, but as an emergent property of the 'many single plans and actions of people [that] can give rise to changes and patterns that no individual person has planned or created' (Elias [1939] 2000: 366).

Background to the plateau

Goxhay was once organised around national companies (Natcos; Belgium, Germany, Spain and the UK comprise the European consortium that is Goxhay) that were centred around a key competence in each country. For example, the UK is the centre for wing manufacture; all the wings for Goxhay aircraft are manufactured in the UK, the split of the work between national entities being based on a mixture of political interest and legacy competency. The job of designing and producing the wings for the first Goxhay aircraft that first flew, in 1972, was given to the Hawker Siddeley aero company in the UK; since then, all Goxhay aircraft wings have been designed and manufactured in the UK. The allocation of work among member states[3] is further driven by political interest, with work share being closely guarded by each nation – reflecting the significance of the aerospace manufacturing to each member state's economy (in the UK, Goxhay employs some 12,000 people in manufacturing and design, with many more in the supply chain). This model of Natcos was disbanded in 2006, and a drive established behind the slogan of 'One Goxhay' to remove national boundaries in an attempt to rationalise its operating routines through the removal of what was seen as duplicate activity in many areas of Goxhay, particularly design and engineering.

Attempts to rationalise from a systems perspective

Though each Natco had its own discrete element of the aircraft to design and assemble, significant overlaps existed in terms of some of the activity undertaken. The UK is the only Natco with responsibility for wing design, yet many Goxhay engineers elsewhere are working on problems similar to those associated with a wing in flight. Given that they all require movement of an aerodynamic surface through a turbulent fluid environment, there are significant overlaps between the design work of elements such as a wing, fuselage section, or vertical stabiliser. At best, such overlap was causing duplication of work in each Natco; and at worst, it resulted in conflicting approaches from different areas. Goxhay's solution was to remove the

[3] UK was never a full member state of Goxhay, having declined to join the consortium in 1970. However, investment from the UK government is significant.

Natco organisation and introduce Centres of Excellence (CoE) that would be organised around production capabilities and Centres of Competence (CoC) or functions, as they are otherwise known) that would be organised around the common skills required to support the design and manufacture of the product. Thus, the wing CoE now encompassed the manufacturing plants in Bremen and St Eloi (Toulouse), as well as the former UK Natco manufacturing plants of Parkstown and Grosvenor. Likewise, the structures CoC now includes engineers for all aspect of the aircraft design, as opposed to separate departments for wing, fuselage, tail plane, and so on. This approach has ostensibly achieved its goal of removing overlap between the different areas within Goxhay. However, I have observed one unanticipated side effect: the destruction of the social working environment, with many transnational employees working in isolation from the rest of their team.

The impact of remote working

The new transnational structure has resulted in some members of different teams sharing an office, with no other members of their natural work group in the same office or even the same country. Extensive use of video and telephone conferencing enables teams who are not physically collocated to connect with each other; but this virtual networking has inevitably led to a loss of daily interaction between team members. Some individuals have complained that they no longer feel part of the team, are uncertain of their day-to-day role and objectives, and do not feel supported or led. These were the findings of the official company engagement programme that Goxhay has been undertaking over the last 3 years. This Gallup Q12 engagement survey is a consultancy-based approach to measuring the engagement of a company's employees; according to their website, this is 'based on more than 30 years of in-depth behavioural economic research involving more than 17 million employees and indicates a high correlation between employee engagement and company performance'.[4]

My reflection on this move to transnational working is that is has eroded what Frederick Herzberg called the 'hygiene factors' – those aspects of working life

[4] See http://www.gallup.com/strategicconsulting/en-us/main.aspx.

that ‘act in a manner analogous to the principles of medical hygiene. [They] operate to remove health hazards from the environment of man’ (Herzberg et al [1959] 1993: 113). Frederick Herzberg, widely known as the ‘father of job enrichment’, was distinguished Professor of Management at the University of Utah. In *The Motivation to Work* ([1959] 1993), he described studies – including interviews with employees – that sought to determine which factors in an employee’s work environment caused satisfaction or dissatisfaction. Herzberg found that the factors causing job satisfaction were different from those causing job dissatisfaction, and developed the motivation-hygiene theory to explain these results. Herzberg identified achievement, recognition, work itself, responsibility, advancement and growth as the top six factors leading to satisfaction. My interpretation of the implementation of transnational working within Goxhay is that it has removed or diminished the effects of these factors, for the following reasons:

Achievement and recognition.

> Workers are now distanced from their line manager: many people working transnationally are not based in the same country, let alone the same office, as their line manager (my own line manager, for example, is based in Belgium).

Advancement and growth.

> The distribution of natural teams over wide, disconnected geographical areas makes it difficult for individuals to have a sense of where they are in the pecking-order for promotion, and uncertain as to whether their efforts are being recognised. The formal performance review process only takes place twice yearly – too great an interval to satisfy the individual’s need to know whether their efforts are recognised.

The responsibility for work itself.

> Even in highly technical engineering undertakings, it is rare that an individual works completely alone without the support of peers. The work itself is a property of the interaction of individuals, an interaction that is now changed through the introduction of distance.

The move to transnational working, and what I view as its subsequent negative impact on the morale of the workforce, is recognised in all areas of Goxhay: the Gallup Q12 survey rates Goxhay in the bottom 5 percentile of all respondents in its database of 5000 companies. Goxhay's central management team attempted to tackle this by introducing the concept of *plateaus*, a plateau being a co-located body of people working on similar activities or with similar competencies within a geographical location. My reflection on this decision is that it is an attempt to artificially recreate the team conditions that once existed naturally in the Natco environment. Now, even if you were no longer with your direct team, you would be located with, and part of, a community that looked something like them. A press release from the COO of the company, 9 October 2007, explains that

> Work on integrated platforms ('plateau') ensures a high level of collaborative work across all functions within Goxhay involving from the start the relevant representatives of the same function from across the company as well as partners and suppliers.[5]

In the case of the UK R&D Plateau, this meant bringing everyone working on UK R&D projects together into one place; thus, although the rest of their team might be scattered to the four corners of Belgium, Germany, or Spain, they will find themselves located with the rest of the R&D community in the UK. While the intent was to have all the UK R&D actors co-located in the same facility, the result has been that the UK R&D plateau is split between two facilities: building 22B, based on the Parkstown site, and a new facility at the National Composite Centre (NCC), 4.5 miles off site.

Establishing the UK R&D plateau

My first objective as Head of Project Management for UK R&D was to establish the UK R&D plateau. One constraint was in place from the start: at least 40 members of the plateau had to be based at the NCC, a government-funded initiative to develop

[5] http://www.goxhay.com/newsevents/news-events-single/detail/key-power8-milestone-achieved-Goxhay-implements-new-fully-integrated-and-trans-national-organisation.

carbon composite capability in the UK. Goxhay had successfully lobbied the UK government for the NCC to be based in the southwest, so it was important to demonstrate a significant presence there in order to safeguard our standing for future negotiations with the government (the UK government, along with the governments of the other member states, contributes about 40% of the annual R&D budget in development grants).

As the NCC lacks capacity to house the entire UK R&D plateau, I had to secure an additional facility to house the remainder. Through a mixture of lobbying, reasoned argument, and a certain degree of bloody-mindedness in resisting the usual list of undesirable facilities that are offered whenever a request for accommodation is made (smelly, leaky buildings with no natural light that no one wants to occupy[6]), I managed to secure building 22B – a modern, light and well-appointed building – as the main facility for the UK plateau.

The analysis that I had completed indicated that 60 people was the ideal number to be located at the NCC. This meant that the 60 +120 (the current capacity of building 22B) allowed 180 seats, enough for the 174 engineers identified for the plateau. With the proposal fully endorsed by the UK and the central R&D management team in Belgium, and funding secured for the financing of the moving of the people and any changes to the facilities, I was now in project deployment and ready to start discussions with the UK R&D teams about who should be located where. It was at this point that the project hit a stumbling-block – through the intervention of a senior member of a central function who had so far not been considered one of the key stakeholders in the project, but whose power and influence was sufficient to jeopardise the successful completion of the project.

Stakeholder management

From the start of this project I had placed great emphasis on stakeholder management. PRINCE2®, the UK government and industry standard on project

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[6] The usual tactic from the Facilities team is to offer undesirable locations as a first choice – perhaps testing how seriously you wish to move, as well as the level of support you have from the senior management team.

management, defines stakeholders as ‘parties with an interest in the execution and outcome of a project’ (Prince 2, 2005, p339). Stakeholder management is the process by which it is intended that a project manager should map the individual stakeholders and their position relative to aspects of the change being managed, and then take steps to manage any risks to the project that may be posed by stakeholders’ views. R&D is an unusual organisational structure, in that of the 800 or so people working on R&D, only 150 feature under the organisation chart of R&D – typically, the core management and support team. The majority of R&D comprises people from other functions. For example, if an R&D project requires 10 men to do fluid flow analysis in a given year, the R&D programme will give a mission letter to the flight physics function that effectively purchases that quantity of support. Flight physics then manages the supply of that resource to the R&D programme, in accordance with the requirements stated in the mission letter. This process is intended to ensure that the specialist skills and understanding of the R&D team are as current as those of the other members of their function. This approach means that many functions are engaged in supporting R&D work, each represented by many people, with each individual function having a valid interest in the engagement of their people with the UK plateau. Analysis of the reporting structures for UK personnel engaged in R&D reveals 174 engineers reporting to 55 line managers, who report to 26 senior managers, who in turn report to nine Vice Presidents, each reporting to five Senior Vice Presidents; finally, these five report to two members of the executive committee. The first point of convergence is the CEO.

As it was not realistic to engage all 100 or so managers in the consultation process for the plateau, through discussion with the project sponsor and members of the senior management team, I identified the key stakeholders as those whose buy-in was crucial to the success of the project (those with most direct responsibility for the population concerned, and those with the strongest political influence). These key stakeholders were involved in every step of the project through the gate reviews that constitute the company’s change management programme. To ensure that the key stakeholders were not just signing a bit of paper that they did not understand, I – or one of my colleagues – took the time to visit each of them in person to talk through the process, answer any questions and test for understanding.

At the time, I perceived these meetings as a two-way process – following the sender–receiver model of communication, which encourages us to believe that 'good communication will enable us to get it right' (Stacey 2007: 274). The sender–receiver model was developed by Claude Shannon and Warren Weaver of Bell Laboratories, and was designed to mirror the functioning of radio and telephone technologies (Shannon & Weaver 1949). Stacey's description of this model is one where 'one individual formulates an idea in the mind, translates it into language and then sends it to another individual who receives the word and translates them back into the idea' (Stacey 2007: 61); if the message being transmitted is free of noise, then the communication will be effective.

My reflection on these meetings is they did not follow the sender–receiver model of me clearly communicating an idea that was then received by the stakeholder I was meeting; rather, we developed the meaning of what we were communicating while undertaking the act of communication. Through discussion with the stakeholders, I was reinterpreting my understanding of the proposed change at the same time that they were reinterpreting their understanding through discussion with me, the meaning within the conversation emerging as a social act through the iterative process of conversation between all parties. This is what the social behaviourist, George Herbert Mead, described as 'the threefold relationship of gesture to adjustive response and to the resultant of the given social act' (Mead 1934: 80). Within this understanding of communication, meaning does not lie in the words, but emerges in the act of communication. As Patricia Shaw points out 'the activity of conversation itself is the key process through which forms of organising are dynamically sustained and changed' (Shaw 2002: 10). This differs from focusing on the tangible products of conversations, 'the organisational designs, performance profiles, business models, strategic frameworks, action plans, lists and categories with which we seek to grasp the reified complexities of organisational life and render them manageable'(ibid: 10). Griffin, in his reflections on leadership participation, talks about a 'theory of communicative interaction between embodied human subjects [...] that implies a very different understanding of participation, namely that participation is self-organisation' (Griffin 2002: 125). This self-organisation was manifest not because the words used in the presentations and conversations that I had with the stakeholders were necessarily changed as an outcome of the discussions

(although this did happen), but more because the meaning associated with the words was continuously reinterpreted through the act of conversation. Though time-consuming, this approach seemed to be succeeding, with the Gate 5 stage of the project (commitment to implement) having been passed on time. We had approval for the total numbers on the plateau, the names of the people to be based on the plateau, and agreement that the plateau would be based in the two facilities.

The wheels suddenly ground to a halt 3 months later, with the process of determining the split between the two locations falling behind plan. The local decision as to who was located where was being hampered by concerns from the central team in Belgium. My reflection on that period is that it was not easy to pinpoint what the concerns were, but some obstacle was preventing consensus being reached by all the interested parties. At the time, I felt that this obstacle – though not explicit or defined – was manifest in the nature of responses that I received from the local management team, who were unable or unwilling to make a decision on who would be located where. Every time I felt that progress had been made in discussion with the UK teams, that I had answered the challenges posed by the central management team and we were poised for agreement, another set of previously unvoiced challenges would appear – seemingly out of nowhere – and cause another round of local reviews, adding further delay. Furthermore, the nature of the challenges did not feel in keeping with the remit of the central management team, who are supposed to focus on policy and strategy deployment – not on how many desks will be in one corner of the office, or the frequency of the bus service running between sites. Their apparent interest in such relatively trivial matters indicated to me that there was a bigger problem not being talked about openly – a bigger problem that finally revealed itself in the shape of Dennis Otto.

The political nature of R&D

Dennis Otto is the head of the engineering CoC – a large department with some 3500 engineers tasked with defining the methods to be used in manufacturing aircraft to the required legal and commercial standards. Six members of this department were nominated for the UK R&D plateau, nominations that were supported by the leaders of the local R&D projects and by the UK head of manufacturing engineering. The nomination of these engineers had been transparent since the start of the process, and

included in the gate reviews that had been signed off by the key stakeholders. For two reasons, Dennis Otto had not been considered a key stakeholder in the process of establishing the UK R&D plateau: firstly, though he is the head of an impacted function, the impact was not considered significant enough to warrant his involvement, as the numbers involved (six engineers) represented less than 0.3% of his workforce. Secondly, his office is in Belgium, so the proposed changes would not impact him or his immediate team directly. At the time, this approach to stakeholder management, and its outcome (the decision not to involve Dennis Otto) was seen as the rational thing to do, and in line with what was considered project management best practice. All this was about to change.

I was summoned to attend an emergency meeting with John Taylor, head of R&D. The topic to be discussed was what direction to take regarding the population of the UK R&D plateau. Should the plateau be staffed in line with the preference of the UK management team, or should consideration be given to resistance expressed by a senior member of the Goxhay management team, Dennis Otto? The meeting was held at short notice by teleconference, with my boss and I calling in from Spain and John Taylor, Hans Reiter (the chief engineer) and Thomas Blaise (the head of funding) from Belgium. A further participant, Robert Bernstein, the senior R&D representative for the UK, rang from his mobile en route to Munich. Given the wide geographic distribution of its employees, this type of teleconference is not unusual within Goxhay; but the absence of the usual human visual clues of facial expression and body language can sometimes make interaction difficult to interpret. This, together with the fact that Hans Reiter – who had already declared his support for Dennis Otto's position – was in the same room as John Taylor (the Head of R&D) and would thus have greater opportunity to influence the outcome of the meeting, heightened my sensitivity around this meeting. This meeting would inform John's decision about which proposal to back for the population of the UK R&D plateau.

The meeting started with John reviewing where we were in the process of making a decision about the population of the UK R&D plateau. He referred to the numerous meetings that had been previously held and the two proposal documents he had before him – one from the UK contingent, which proposed locating all of the 174 R&D engineers in building 22B and the NCC; the other from Hans Reiter, proposing a solution that would mean leaving some of the R&D staff in their current

location rather than relocating to one of the plateau buildings. To myself and the rest of the UK contingent, it was clear that the head of R&D would side with our proposal, which – unlike the other plan – met the stated objective of housing all the R&D actors together and complied with all other Goxhay policies and procedures. In this sense, it was the rational thing to do; I felt this was a done deal, and would certainly not require the full hour that had been allocated.

The meeting took over 2.5 hours to conclude, during which time we lost input from Thomas Blaise (we heard the stewardess asking him to switch off his phone, as the aircraft doors were now closed and the aeroplane was about to take off). All was not going as I had hoped. Endorsement of the UK proposal was not as clear-cut as I had thought – not through any inability to represent my case or, as I had feared, through Hans Reiter being able to influence events through his proximity (both physical and hierarchical) to John Taylor; but simply because John was clearly uncertain which proposal he should back. His sense of dilemma being so great that the last half-hour of the meeting consisted mainly of him stating that this was not an easy decision to make, and asking the same question over and over: 'Are there any other solutions that we have not considered?' amidst very audible breathing that my boss and I took to indicate a highly anxious state on behalf of John. The meeting concluded with the head of R&D still unclear about what direction to take, feeling the need to talk further with other members of the senior management team and executive committee before making a decision.

After the meeting, I felt frustration and disappointment at the lack of direction from the head of R&D – feelings that were shared by my boss, Peter Rains, who is responsible for the global deployment of project management within R&D in Goxhay. I have a very good working relationship with Peter, having previously worked for him in a former role at the wing manufacturing plant at Grosvenor in the UK. It was our previous good working relationship there that was instrumental in Peter recruiting me into this role. As he explained when he approached me about the position, he needed people he could trust and rely on, as managing remotely from Belgium would demand greater autonomy from the individuals managing each national entity. This good working relationship has been crucial to my current success: there is a high level of trust between us that enables open conversation such as the one we had now – discussing how we felt about John Taylor's behaviour in

the meeting: the heavy breathing, his apparent inability to do what we both regarded as the obvious thing with regard to the UK R&D plateau. This opportunity for open conversation assists greatly in making sense of what takes place in events such as these meetings, with us both being able to share views and insights gathered from other areas of our day-to-day experiences.

Despite the considerable time and energy invested in this project, I felt no nearer to getting to a decision on who would be relocated to the NCC. However, I now felt differently about the challenges facing this change and the positions being taken by the senior management team. What I had viewed as an irrational stance by the senior management team in not supporting the rational solution – the only one that aligned with Goxhay policies and procedures – was clearly not so straightforward or clear-cut in John Taylor's view. I began to wonder about the role played by Dennis Otto in shaping what might be understood as rational in the minds of the senior management team. The sense I make of this change within myself is that John Taylor's dilemma called out a similar feeling in myself: his audible heavy breathing in the call elicited within myself the anxiety that I would associate with that gesture. However, the meaning did not reside in this gesture breathing alone; Mead explains this as a 'response on the part of the second organism to the gesture of the first is the interpretation – [that] brings out the meaning of that gesture, as indicating the resultant of the social act which it initiates, and which both organisms are thus involved' (Mead 1934: 80). John's anxiety was expressed within the social act of conversation; it became an anxious expression when recognised as such by myself, through my own experiences of other anxious situations; and in the response that I gave to this recognition, which called out an anxious act on the behalf of John. It is in this gesture, adjustive response, and social act that meaning emerges.

I was now less certain about the position I was taking on the staffing of the NCC, and found myself contributing to the overall uncertainty of the situation: my views were forming, and being formed by, the social act both and at the same time. I left this meeting with a new awareness of the significance of Dennis Otto's views; thus they actually had greater significance than when I entered the meeting. I had not considered Dennis Otto a significant stakeholder, given the minimal impact to him and his department; I was therefore surprised by his interest in this issue, and even

more surprised when I discovered the root cause of his interest – the working relationship with FJM, one of Goxhay's main suppliers.

Partnership with FJM

The NCC is a joint venture between the UK government and industrial partners in the UK such as Goxhay. Another key industrial partner is FJM, the UK aerospace and automotive engineering company with whom Goxhay have well-established working relationships. When Goxhay recently sold off significant elements of its manufacturing activity as part of its core/non-core, make-versus-buy strategy, FJM were successful in acquiring the manufacturing facilities at Parkstown in the UK and a significant work share in a new aircraft for development and manufacture of composite components for the wings. This gave FJM the status of risk-sharing partner with Goxhay. As the name suggests, as a risk-sharing partner they are expected to share the risk (cost) of product development – rather than a supplier, who will be given a product to deliver once the development work (and associated risks) has been undertaken by the customer. This risk-sharing relationship with FJM is in line with Goxhay's strategy to reduce exposure to the development costs of new aircraft. Partnership with FJM in the NCC is an extension of that strategy, intended to bring about the sharing of understanding of how to engineer new composite technology developments into a manufacturing environment.

This partnership with FJM turned out to be at the root of Dennis's refusal to sanction the relocation of his manufacturing engineers to the NCC. As he stated in an email:

> I have no problem for the list of manufacturing engineering people staffing the R&D plateau in UK. But I don't accept the location: NCC. So if it is NCC, we will move our manufacturing engineering people to Grosvenor.

This email from Dennis Otto finally shed light on his resistance to setting up the UK R&D plateau in the NCC. If Dennis was not going to put his engineers there, that made the placing of any of the other R&D members there questionable, as they would be compromised in their duties without the support of the manufacturing engineers. My previous experience of Dennis left me in no doubt that, having stated his intent so categorically in writing, he would indeed move his engineers to

Grosvenor – the other Goxhay manufacturing facility in the UK, some 150 miles away from Parkstown.

Strong-willed characters like Dennis exist in every organisation, and it is beyond the scope of this research project to examine the validity, strength and resolve of his objection. What is of interest is how his opinion, his rationalisation of the situation made his stance rational through the power of that rationality affecting the acceptance of what was considered to be rational by the rest of the R&D population. Once his concerns took hold, other senior managers chose to review their own interpretations of Goxhay strategy in light of his views; not only did their new position reflect his, but it discriminated against those who were not aligned to this way of thinking. At no time had anyone queried the rationality of placing Goxhay engineers in the same building as FJM engineers until Dennis Otto's intervention; now, it was suddenly considered a risk sufficiently dangerous to warrant the involvement of Goxhay's executive committee. Moreover, Otto's view was redefining Goxhay policies on risk-sharing partners: senior managers in the central management in Belgium were beginning to question the engineering management team in the UK, accusing them of contravening the policy of the head of function by supporting the movement of manufacturing engineers to the NCC. They did not seem to mind that the head of function was going against Goxhay's strategic policy of collaboration with risk-sharing partners in order to reduce exposure to development risk.

The rationale for irrationality

This account of the ongoing indecision around whether to put the manufacturing engineering teams in the NCC does not seem to make a great deal of sense from a ratio-logical viewpoint. Goxhay has gone to great lengths to describe its position on relationships with risk-sharing partners, with many carefully crafted frameworks and policies designed to take the guesswork out of relating to external partners. Why then, in this instance, did the senior and executive management team within Goxhay choose to work outside of these frameworks and policies, particularly when they or their offices had been involved with the creation and approval of the frameworks and policies in the first place? How did the irrational become the rational thing to do?

The online *Collins English Dictionary* defines rationality as 'the state or quality of being rational or logical; the possession or utilization of reason or logic; a reasonable or logical opinion'.[7] Bent Flyvbjerg, in his account of the Aalborg town planners' attempts to modernise the bus system in the city's historic centre, relates how in the Enlightenment tradition 'rationality is typically seen as a concept that is well defined and context independent. We know what rationality is and rationality is supposed to be constant over time and place' (Flyvbjerg 1998: 2). Against this understanding of rationality as being something clear, reasoned and timeless, the actions of the Goxhay management team can only be seen as irrational: they were unclear (different viewpoints from different stakeholders that were not well defined), inconsistent (views expressed at one point in the process changed despite little or no change in the proposal up for consideration), and context-dependent (when the context of the discussion changed from one of applying the Goxhay policy for risk-sharing partners to one of whether or not we should be working with this particular one, the context changed). However, Flyvbjerg (1998: 2) goes on to say that 'this study demonstrates that rationality is context-dependent and that the context of rationality is power'. I would like to take up again this argument that the context of rationality is power, and consider the relevance of rationality in an unpredictable environment such as that of R&D – where, by definition, the outcomes of the actions of those involved cannot be well defined, and risk and uncertainty are essential ingredients in day-to-day activities.

The context of rationality

Stacey (2007: 152) proposes two views of rationality:

> *Sense 1* – Rationality is a method of deciding that involves setting clear objectives, gathering the facts, generating options, and choosing one that maximized or satisfies the objective. […] We can refer to this meaning of rationality as 'technical rationality'.

By contrast, he describes what I will refer to as human rationality:

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[7] See http://www.collinsdictionary.com/dictionary/english/rationality.

> *Sense 2* – Rational could be a method of deciding and acting in what seems to be sensible ways which are reasonable in the circumstances and sane rather than foolish, absurd or extreme.

The back cover note to Toulmin's *Return to Reason* (2001) argues for the relationship between technical rationality of the sense 1 and what (for the sake of distinction) I will refer to as human rationality of sense 2

> [We] need to confront the challenge of an uncertain and unpredictable world, not with inflexible ideologies and abstract theories, but by returning to a more humane and compassionate form of reason, one that accepts the variability and complexity that is human nature as an essential beginning for all intellectual inquiry.

This humane and compassionate form of reason is akin to Stacey's rationality of sense 2 (what I have termed human rationality).Toulmin contrasts this with the notion of rationality that he describes as the scientific method of observation, deduction and generalisation, which corresponds with Stacey's description of sense 1 (technical rationality). He goes on to question why this 'Newtonian dynamic [was] seen as the type example of a serious science to be emulated by economists, sociologists and psychologists' (Toulmin 2001: 47). The argument of his book is that within academic philosophy, there is an increasing tendency to question the appropriateness of applying the concept of technical rationality to human sciences; the notion that human activities can be compared to the motions of planets, or of rigid spheres rolling down inclined planes, is outdated – as he puts it, 'among some humanists, the phrase scientific method is even pronounced with a sarcastic or ironic tone' (ibid: 1). In these arguments, there is strong alignment between Toulmin's rationality and reasonableness and Stacey's rationality of sense1 and sense 2:

> Rationality goes with focusing narrowly on matters of content. Reasonableness with a feeling for the dozen ways in which a situation may modify both the content and the style of arguments. (Toulmin 2001: 22)

There is, however, divergence in the relative importance of each approach. Toulmin, while acknowledging that there is a 'turning of tide that points to a future in which

the rational demands of scientific technique will be balanced by attention to the demands of the human situation in which intellectual or practical skills can reasonably be put to use' (2001: 2), also states that for now 'the human values of reasonableness are expected to justify themselves in the court of rationality' (ibid: 2). Though I would not question the need to comply with whatever is accepted as the rational thing to do in any given organisational setting, I will argue that the prime justification for one's actions is to be found in that of the reasonable human rationality, rather than technical rationality; and that in real lived everyday experience, both senses of the term 'rationality' are used in rationalising our actions.

Technical versus human rationality in the case of the NCC

Of Stacey's two views of rationality, the notion of 'technical' (well-defined, context-independent) rationality aligns with the Goxhay approach to managing risk-sharing partners through having well-defined processes and procedures relating to the selection and operational interfaces of risk-sharing partners. Goxhay does not confine this technically rational approach to its risk-sharing partners: like most industrial organisations, Goxhay is accredited under a quality management system – International Organisation for Standardisation (ISO) 9001, the pre-eminent standard for quality management systems by which Goxhay and most other European industrial organisations are accredited.

> Without satisfied customers, an organization is in peril! To keep customers satisfied, the organization needs to meet their requirements. The ISO 9001:2008 standard provides a *tried and tested framework* for taking *a systematic approach* to managing the organization's processes so that they consistently turn out product that satisfies customers' expectations.[8]

The emphasis is on the need to take a systematic approach to managing organisations. The online *Collins English Dictionary* defines *systematic* as

[8]http://www.iso.org/iso/iso_catalogue/management_standards/iso_9000_iso_14000/iso_9000 [accessed 2011 Aug 11, emphasis in original].

'characterized by the use of order and planning; methodical',[9] which aligns with Stacey's first sense of rationality. Organisations such as Goxhay that subscribe to the requirements of ISO 9001 are, by design, defining their operating procedures as ordered and planned, a prerequisite of compliance and accreditation to the ISO 9001 standard.

If Goxhay processes are technically rational, then the behaviours of the senior/executive management team by working outside of those processes must surely be considered irrational, if we apply the technical standard of rationality described in sense 1. However, Stacey (2007: 152) goes on to say that 'it is quite possible, indeed highly likely, that thinking rationally in its broader sense will lead to the conclusion that technical rationality should be avoided, that is, it may be quite rational in sense 2 to avoid being rational in sense 1'. By the 'broader sense', I understand Stacey is referring here to an understanding of rationality in both sense 1 (technical) and sense 2 (human). He gives the example of how, in an unpredictable environment under strict time pressure, it may not be logical to try and make decisions in a painstaking manner, as that could never succeed in meeting all the criteria of rationality in its sense 1 meaning. In this example, the rational thing to do may be to 'base your behaviour on emotion and belief in certain circumstances. To do so would therefore be rational in sense 2 but not in sense 1' (ibid: 152).

This is the sense that I make of the behaviour among the senior/executive management team in relation to the lack of agreement in determining the split in the plateau team between the NCC and 22B. At the start of the project, the rationality of the senior/executive management team was aligned with the *technical* rationality of the company's rules and procedures. Against this technical rationality, typified in its quality management system, deployment of the manufacturing engineering staff into the NCC was the rational thing to do, given that it aligned with stated company policy and procedure. Later in the project, when influence was introduced in sufficient force through the objections of a senior member of the executive population, rationality of the human type (sense 2) became prevalent. In this

[9] http://www.collinsdictionary.com/dictionary/english/systematic [accessed 2013 Nov 19].

instance, it became foolish, absurd or extreme to insist on the technical rationality of sense 1 in the face of such an influential figure as Dennis Otto.

My understanding is that in both cases described, and indeed at all times, both types of rationality are at work during management decision-making in organisations. Thompson et al (1959) insist that where causal connections are clear and objectives shared, the conditions exist for managers to take decisions in a ratio-logical way. Yet, how would the decision-maker know that the causal connections were clear and objectives shared, without using the second (human) sense of rationality to check whether the decision was reasonable and sane in the circumstances, as opposed to foolish or absurd? Stacey makes this very point:

> [I]t could well be effective to make decisions and act on the basis of processes *akin* to technical rationality… because even in these [highly stable, predictable] circumstances, the limits of human cognition, as well as the inevitability of human emotion, make purely technical rationality impossible. (Stacey 2007; 152, emphasis added).

Thus all decisions need to be made in view of both rationality sense 1 and rationality sense 2, both technical and human – as opposed to Toulmin's view of reasonableness having to justify itself in the court of rationality. Furthermore, the human rationality of sense 2 can override the technical rationality of sense 1, whereas technical rationality cannot override human rationality.

So far in this project, I have explored the nature of rationality within R&D in Goxhay through the example of a change initiative that was initially undertaken along the lines of technical rationality (Stacey's sense 1). I have explored how, when conditions allowed (causal connections clear and objectives shared), the management team which I was a part of was able to rationalise their decision through gathering the facts, generating options, and choosing a course of action that satisfied the objective. I have also gone on to explain how, when these conditions have changed – that is, when causal connections are still clear but managers conflict – 'then the decision has to be made in a political manner' (Stacey 2007: 158). This political manner I equate with that of the 'human' rationality of Stacey's sense 2 – a form of rationality in which 'those with the greatest power will prevail' (ibid: 158).

I would now like to explore in more detail how power can not only prevail in the decision-making process, but how power *determine* the decision-making process; how – as Bent Flyvbjerg observed, in his study of the Aalborg town planning departments project to improve the city's bus station – 'power defines what counts as knowledge and rationality, and ultimately as we shall see, what counts as reality' (Flyvbjerg 1998: 27).

Power

In the preceding narrative, I have an understanding that underscoring the notion of rationality is the notion of power. I have spoken earlier of how power defines what is rational, and that 'Power has a rationality that rationality does not know, whereas rationality does not have a power that power does not know' (Flyvbjerg 1998: 2). The sense I make of this is that we have to check technical rationality against the values of human rationality, and that human rationality is based on the power relations apparent at the time of the decision. In Project 1, I spoke about Elias's view of power being not something that someone possesses, but 'a structural characteristic of all human relations; (Elias 1970: 93), the basis of power being that we need others more than they need us. In making sense of this, I understand power to be something that is given in a particular relationship, not something that is owned by an individual to be wielded in all instances. This is a view echoed by the French structuralist and critical author, Michel Foucault, in his extensive works on power, in which his objective has been to 'create a history of the different modes by which, in our culture human beings are made subjects' (Foucault 1994: 326). He observes that 'what characterises the power we are analysing is that it brings into play relations between individuals', and that we should not deceive ourselves: 'if we speak of the power of laws, institutions, and ideologies, if we speak of structures or mechanisms of power, *it is only insofar as we suppose* that certain persons exercise power over others' (ibid: 337, emphasis added).

In both cases, I understand the term *power* as referring to relationships between people. This view of power as relational is different from the normally understood view of power residing within the powerful people within organisations 'as the influence of one person or group over another so that one has power and the other does not' (Marriott, cited in Stacey 2007: 370). This understanding of power

has more to do with what Griffin (2002) calls the 'cult of power', as opposed to the function of power; the cult of power fascinates and seduces us through the possibility of being in a position of 'telling others what to do and in many cases forcing them to do it' (Griffin 2002: 200). Griffin posits that the 'literally awesome aura that power can take on' (ibid: 200) can tempt us to shy away from examining and questioning the nature of power more objectively. This is the nature of how we choose to reify power in organisations, insofar as we suppose that certain persons exercise power over others. The nature of power in complex organisations is one where 'leadership and power emerge in the complex process of relating as thematic patterns, which are evolving structures' (ibid: 200); this is the relational sense of power to which Elias and Foucault refer. Furthermore, these power relations move as part of the ongoing process of configuring power relations between people. This dynamic aspect of power relations is how I make sense of the changes in direction taken by the senior management team in relation to the question of who should be located in the NCC. As I observed the power relations change with the introduction of the previously silent Dennis Otto, the rationality that was based on the existing power relations also changed.

If rationality is changeable, based in and on the shifting power relations between people and groups of people in organisations that is a structural characteristic of all human relations, then why do managers and leaders in organisations crave the context-independent type of rationality of Stacey's sense 1, especially when the behaviours of the senior management team and executive committee suggest that decisions are being made along the political axis with reliance on judgmental or intuitive modes of making a decision? If this notion of power defining rationality is inevitable in human, social organisations, then why is management so ready to accept prescriptions for organisational change that align with technical rather than 'human' rationality?

In the next section, I will contrast two very different views on change in organisations – that of Louis George, head of Goxhay's Project & Programme Management CoC, who advocates that a non-satisfactory situation can be radically changed through the development of a competence enhancement strategy; and that of Ralph Stacey, positing a view of change happening through the potentially paradoxical processes of intention and emergence. I will use Goxhay's product, the

wing of a commercial aircraft, as a metaphor to illustrate how Goxhay is prepared to recognise the limitations of its tools and processes when faced with the complexity of its product, yet is not prepared to accept limitations in terms of understanding and prescribing remedies to its organisational structure. This is not to say that tools and processes are inherently bad, or applicable only in certain stable situations; it is merely to point out that we cannot be certain of the outcome of using the tools in all situations, as the function of the tool cannot be context-independent and the use of that tool determines the context.

In the case of the nomination of the members of the UK R&D plateau, the limitations of the tools initially lead to one decision emerging as the rational thing to do (relocating manufacturing engineers to the NCC), then a different decision emerging through the influence of Dennis Otto's power relations. The final act of this power play shows that with the intervention of another even more senior person (Dennis Otto's boss), the rational thing to do is once again to put the manufacturing engineers in the NCC: the physical move of those people having been completed some 6 months after Dennis's initial intervention.

This narrative is of relevance not just to Goxhay or the Aalborg town planning office, but to all organisations; we all have influential characters such as Dennis Otto or the Mayor of Aalborg working among us.

The complexity of an aircraft wing

Despite the fact that the need for improvements in project management has been clearly recognised in the Goxhay's Top Priorities, (their 'Vision 2020' document), Goxhay has yet to establish a dedicated approach to the required qualifications for future project managers. Project management training, for example, has been offered in many different forms, but managers have been left to make their own decisions regarding their employees' access to this training. These decisions have often come too late, when a deficiency in project management skills has already become apparent.

> In order to radically change this non-satisfactory situation, the executive committee has entrusted the project management function, alongside other missions, with the development of a project management competency enhancement strategy. The foundations for significantly enhancing Project

> Management competencies at Goxhay are now laid down and I encourage managers and employees to fully make use of the opportunities this new approach offers. (Louise George, head of Goxhay's Project & Programme Management CoC [10])

Stacey (2007: 250) has commented that

> All that *everyone*, no matter how powerful, can do is to continue participating with intention and continually negotiate and respond to others who are also intentionally doing the same. It is in this ongoing, intentional, local interaction of strategizing that the population-wide patterns emerge.

A wing on a modern commercial airliner is an extremely complex structure, although in essence it is made up of a small number of composite units made up of other parts. In the centre of the wing is the wing box; this is made up of a front and rear spar (two big aluminium girders running the length of each wing), between which are the wing ribs that run from the front to the back of the wing. These ribs hold the two spars together, giving structural strength and also forming the aerodynamic profile of the wing box. To the top and bottom of the wing box are affixed the wing skins – large pieces of machined aluminium plate that provide the aerodynamic surface of the wing, which, together with the stringers (strengthening pieces that run the length of the wing parallel to the spars), provide the immensely strong wing box structure to take the loads associated with flight. In front of the wing box is the leading edge, a D-shaped construction that, along with continuing the aerodynamic profile of the wing, contains the slats – moveable devices that allow the wing to be configured for high-lift, low-speed conditions such as take-off and landing, as well as for low-drag, high-speed cruise conditions. To the rear of the wing box are the flaps and spoilers. These are mounted on the rear spar and, like the slats, allow the wing to be configured for different flight envelopes (take-off, landing, high-altitude cruise, etc). Add the landing gear, fuel and electrical systems and engines, and those are the main composite units of the wing of a modern commercial airliner.

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[10] Opening statement in preface to Gloxhay 'Project & Program Management' *Body of Knowledge* handbook.

Although for ease of explanation it can make sense to describe the structure of an aircraft wing in terms of six or seven large composite units, there are approximately 250,000 components in each aircraft wing. In this sense, aircraft wings can be seen as an analogy for the way organisational design is often used to describe the organisations it is applied to – grouping together many smaller components (people) into larger functional groups (wing boxes, leading edges, accounts departments, human resource departments). In relation to an aircraft wing, we can acknowledge that these crude groupings are exactly that: crude groupings which, while enabling us to describe broad regions of the aircraft wing to another person, in no way attempt to describe the behaviour of those regions in relation to flight. In commercial organisations, it can be tempting to refer to groups of people who are arbitrarily bracketed together by function or department or skill type, not only for the purposes of elaboration to another person, but also for the purposes of assessment and diagnoses of 'non-satisfactory situations'.

Thin formulaic simplification

This approach to explaining how groups of individuals are organised in a community is what James Scott referred to as a 'thin formulaic simplification'. In *Seeing Like a State* (1998), he examines why large-scale schemes to improve the human condition in the twentieth century have so often gone awry, and argues that any centrally managed social plan must recognise the importance of local customs and practical knowledge if it hopes to succeed. Scott goes on to analyse many of the large-scale social policy implementations of the twentieth century and assesses how, in the process of abstracting the general from the particular, we can lose what made the particular valuable in the first place – the diversity and complexity of the thing being measured for abstraction being illegible to the measurement devices used to conduct the measurement.

In the example of scientific forestry developed in the late 1800s in Prussia and Saxony, forest trees were tagged by assistants walking abreast with a colour-coded nail that corresponded to the five categories of tree they had been trained to identify. While these surveys, accompanied by mathematical calculations and elaborate tables of data, allowed the forester to make a close estimate of the inventory, yield and growth of a given forest, he could only do this by 'radically

narrowing his vision to commercial wood with the restriction of focus reflected in the method the only way in which the whole forest could be taken in by a single optic' (Scott 1998: 15). This, Scott contends, is a reasonable enough approach to calculate the sustainable yield of commercial timber in an existing forest. To attempt to model the forest in the fullness of its diversity would be impractical, if not impossible; it would also be illegible to the intended audience, the government policymakers who lacked the expertise to interpret and make sense of the mass of data that such an undertaking would involve.

What happened next, however, was to try and recreate this abstracted forest, through careful seeding planting and cutting – 'a forest that was easier for state foresters to count, manipulate, measure and assess... that closely resembled the administrative grid of its technique' (ibid: 15). The outcome of this policy of scientific forestry, in the medium term, was *Waldsterben* – a new term meaning forest dieback, as Scott elaborates. German forestry's attention to formal order and ease of access for management and extraction lead to the clearing of underbrush, deadfalls, and snags (standing dead trees), thus greatly reducing the diversity of insect, mammal and bird populations so essential to soil-building processes. The absence of litter and woody biomass on the new forest floor is now seen as a major factor leading to thinner and less nutritious soils (ibid: 20).

Although Scott's detailed observations may pertain to the high modernist, authoritarian state planning of nation states within the twentieth century, I consider his observations about the importance of local customs and practical knowledge to be of relevance to any organisation that is attempting to undertake change imposed through the agency of state power – whether feudal, national or corporate. He argues that there are four elements involved in failure of these thin formulaic simplifications – elements that I can relate to commercial organisations such as Goxhay, as outlined below.

The administrative ordering of nature and society. Scott relates how early European statecraft seemed 'devoted to rationalising and standardising what was a social hieroglyph into a legible and administratively more convenient format' (ibid: 3). This is evident in commercial organisations' desire to create 'best practice', standards and harmonisation, as embodied in the Project Management Competency Enhancement strategy referred to at the start of this chapter. Within this statement,

there is no acknowledgement of local interactions particular to the project being undertaken. Indeed, there is an indication that the local practices previously in place have contributed to the failings of project management practice – such as training being offered, but employee access to it being decided solely by managers. The assumption is then made that if the manager is late in recognising the need for training, this has led to the downfall of the project, with no attempt apparently being made to understand contributory local conditions.

Ideology. Scott refers to a 'high modernist ideology… a strong, one might even say muscle-bound version of the self-confidence about scientific and technical progress' (ibid: 5). This is apparent in the vision and mission statements of organisations attempting to change some element of their nature. Once again, in the example at the start of this chapter, the head of project management talks about the executive committee entrusting the function with the development of a project management enhancement strategy to 'radically change this non-satisfactory situation', stating that 'The foundations for significantly enhancing project management competencies at Goxhay are now laid down'.

Authority. 'The third element is an authoritarian state that is willing and able to use the full weight of its coercive power to bring these high modernist designs into being' (ibid: 5). The function has mandated that the training that it sees as key to the radical changing of this non-satisfactory situation is undertaken by anyone with project management responsibility within Goxhay. After a certain date, no one will be authorised to undertake a project management role without having completed the stipulated training programme.

Compliance. The fourth element in Scott's taxonomy – 'a prostrate civil society that lacks the capacity to resist these plans' (ibid: 5) – can also be observed in the context of commercial organisations. Goxhay, like most modern commercial organisations, has rules and procedures that state how it designed to operate, as well mechanisms, both incentive and punitive, to prevent or correct behaviour outside of those rules. While complete adherence to the rules is improbable, any individual falling too far outside the rules leaves themselves open to company disciplinary procedures. This is a threat sufficient to effectively remove or significantly reduce the capacity to openly resist; both for the individual who may not wish to follow the rule, and for their manager, who would have to implement the corrective procedure.

The example of the scientific forest, and the other examples of simplification that Scott examines, all have the character of maps. That is, 'they are designed to summarise precisely those aspects of a complex world that are of immediate interest to the map maker and ignore the rest' (ibid: 87). This is what we do in commercial organisations whenever we conduct an audit or survey, or send out questionnaires to be filled in, to assess the current state of affairs. Regardless of how carefully or meticulously we devise our measurement process, it can never completely reflect the actual, as 'any large social process or event will inevitably be far more complex than the schema we can devise prospectively or respectively to map it' (ibid: 309). This in itself is by no means a negative aspect, if the process is understood as a tool to measure the current state of affairs and provide a simplified summary to the executive team to help inform what may be wrong in general with project management within Goxhay, perhaps focusing on key issues that are more readily assessed than others. The problem comes when these issues, presented in a form that is legible to the executive, are then acted upon as if they are actually what is wrong with project management, or whatever subject is under scrutiny. On the contrary, they are merely recognised patterns – representations of whatever was happening at the point in time when the enquiry was made. This is the nature of activity within complex organisations made up of human social interaction. Any abstraction or attempt to generalise the particular can only ever give us an idea of how the state of the system could be represented at a given point in time. Stacey, in his discussion on the complexity sciences, describes how complex and chaotic systems exhibit recognisable patterns that are repeated over and over again, but 'it is not possible to identify specific causes that yield specific outcomes' (Stacey 2007: 191). Elias elaborates further ([1939] 2000: 366):

> It is simple enough: plans and actions, the emotional and rational impulses of individual people, constantly interweave in a friendly or hostile way. This basic tissue resulting from many single plans and actions of people can give rise to changes and patterns that no individual person has planned or created.

If this is the complex nature of social, human organisational life, then why is there such a propensity for the dominant management discourse, followers of the doctrines of strategic choice theory, to fall toward the abstracted generalisations of

the particular – the thin formulaic simplifications – despite widespread recognition that these approaches do not deliver the intended result? Stacey has observed (2010: x) that 'Despite the massive increase in the numbers of professionally educated managers and the millions of pieces of research there is, however, no adequate scientific evidence base for the evidence of the dominant management prescriptions for managing and leading organisations'. Within the discipline of project management, it is widely acknowledged that 50 to 70% of all projects fail their targets of time, cost and quality; yet when the plans fail, the clarion call is for more plans, better cost control – in other words, for more of the same strategies that failed in the first place.

My experience of the challenges faced in establishing the UK R&D plateau suggested a desire on the part of the management team to make sense of a complex situation by simplifying it – trying to make sense of what was happening in what Weick, in his work on sense-making describes as 'an attempt to produce micro stability amidst continuing change (Weick 2001: 22). Richard Hilbert, professor in sociology and anthropology, further goes on to say that micro stability is produced when people 'orient themselves to a presupposed social structural order, reifying and reproducing it in the course of their activity and imposing its reality on each other as they do' (Hilbert 1990: 796). My observation is that in the discussions over who was located where in the UK R&D plateau, this orientation toward a presupposed social structural order was not fixed, but emerged and changed as the political environment – the will of the power relations within the Goxhay management team – changed in response to the shifting of those power relations. As already discussed, initially the dominant view was aligned with the espoused company procedures and values relating to risk-sharing partners and the apparent technical rationality of the company's rules and procedures; but later in the project, when political influence was introduced in sufficient force through the objections of a senior member of the executive population, the human (sense 2) rationality became apparent as a method of deciding and acting in what seemed to be sensible ways.

This example highlights another aspect of social behaviour: that 'the primary human reality is persons in ordinary everyday conversation' (Griffin 2002: 134), and that it is in the 'intermediacy, undecideability and ambivalence in which different people meet each other in the socially constructed encounters of everyday life, that

political struggles are their most intense' (Shotter 1993: 38). The primary human reality to be observed here was that of the power relations within the senior management team. My reflection on this is that the outcome of the decision on where the inhabitants of the UK R&D plateau were to be located seemed to be influenced less by the practical merits of the proposed move (co-location, use of new facilities, positive proximity to partners) than by the views of senior management as to where they should be located. This could imply that in the long run, it did not matter where they were with respect to the viability of Goxhay as an ongoing concern; what did matter was the interplay of power relations between those taking part in the discussion.

This then places the primacy of the outcome on the sustaining or breaking of the power relations, rather than the power relations being sustained or broken by the outcome. Snyder (1984) states that a justification with little intrinsic validity comes to be seen as more valid because powerful people believe in it and act on those beliefs. If the process of determining who should be located where on the UK R&D plateau has little or no intrinsic value (that is to say, if in the long run it makes no difference to the performance of Goxhay where the UK R&D people are located), then this view would explain the apparent capriciousness of the management team with regard to this matter. As the beliefs of those in the power relations changed, so did the validity of their approach. However, if the decision of where people are located on the UK R&D plateau had validity in the sense of being seen to be making the right decision within the power relations, as opposed to making a technically rational decision about where the UK R&D employees were to be located, then the validity of the actions of the senior management team accord with Stacey's view of organisations in the context of complex responsive processes (Stacey, 2007: 250):

> All that *everyone*, no matter how powerful, can do is to continue participating with intention and continually negotiate and respond to others who are also intentionally doing the same. It is in this ongoing, intentional, local interaction of strategising that the population wide patterns emerge.

Summary

In this project, I have recounted how my understanding of the Goxhay senior management team's actions associated with the establishment of the UK R&D plateau appeared irrational against my understanding of organisational behaviour in accordance with Stacey's sense 1 (technical) rationality. This behaviour is typical of the project management literature, with the emphasis on tool deployment leading to predictable cause and effect. I have shown how my understanding of those actions has changed through throughout the learning I have undertaken as part of the DMan course. I now feel that the apparent capriciousness of the management team's decision is by no means unusual or surprising when considering organisations as complex responsive processes; and that the insights offered by adopting this perspective can help us to better understand people's behaviour in organisations.

My further reflection is that this phenomenon is not unusual or unknown within organisations. Taking the example of my current employer, it is accepted that the complexity of our product is such that we cannot hope to accurately predict how it will behave throughout the entirety of its lifecycle; redundancy is therefore built into the product design, to ensure its continuing success (multiple hydraulic circuits and control systems, structural components capable of taking many times the maximum design stress). Yet, in the design of our organisation, while that too is recognised as being complex, we continue to behave as though we believe that we can accurately determine the required design solution and somehow implement it upon the organisation in order to radically change a non-satisfactory situation. This is despite the complexity associated with organisations being far greater than the complexity of a physical product, such as an aircraft wing, owing to the highly heterogeneous nature of the agents within the organisation (human beings, who do not , display the same behaviour as each other – or even themselves – at different points in time) compared with the relatively homogeneous nature of components in aircraft wings (manufactured from materials with well-established mechanical properties, to consistent design and manufacturing standards).

Why, then, do we as managers lean so readily to the thin formulaic simplifications when faced with organisational situations that we wish to understand? Why is it that strategic and tactical plans that appeal to the laws of cause and effect – laws that are inappropriate in a complex non-linear environment for

anything more than explaining what happened in a complex system at a given point in time – are given so much credence in management circles? Is it that there is simply no better model described? Is it as Aaron Wildavsky – an American political scientist known for his work in public policy, government budgeting, and risk management – observes, that 'in reality, planning is not defended for what it accomplishes but for what it symbolises – rationality. Planning is conceived to be the way in which intelligence is applied to social problems' (Wildavsky 1979: 129)? Or is it simpler than that – could it be the illusion of control that so entices management toward these simplifications? Can the popularity of rational models be attributed to the 'lure of diverse simplifying structures that make our diverse world more understandable' (Huff 1980: 33)?

I am not suggesting that there is anything wrong with the effort to simplify structures in order to make our diverse world more understandable. Weick comments that a dominant question for scholars of organising is, 'How do people produce and acquire a sense of order that allows them to coordinate their actions in ways that have mutual relevance?' (Weick 2001: 26). Any tools, procedures and approaches that enable coordination in ways that have mutual relevance must surely be for the good of the organisation? The risk is that placing too great an emphasis on the actions arising out of such analysis, and then building strategic plans on that analysis, is what McKenney and Keen referred to as a particular weakness of the analytical mind and its tendency to seek premature closure with 'problems structured early, the alternatives delineated prematurely, so that attention can be concentrated on assessing them' (McKenney & Keen 1974: 83).

In the next project, I will ask how we can move away from 'thin' simplifications toward 'thick' descriptions. In *The Interpretation of Cultures* (2000), Clifford Geertz reflects on how ethnography – the scientific description of individual cultures – is 'the elaborate venture in Thick Description; (Geertz 2000: 6). Can this approach of thick descriptions – which are interpretive, interpret the flow of social discourse, and attempt to rescue such discourse from its 'perishing occasion and fix it in perusable terms' (ibid: 20) – provide a better way of interpreting and communicating 'the primary human reality [of] persons in ordinary everyday conversations' (Griffin 2002: 134)?

Project 3

The introduction of visual management boards within Goxhay UK

In this project, I will give an account of my recent experience of deploying visual management boards within Goxhay UK. I will seek to understand the resistance to the implementation of an initiative that is widely regarded as best practice within many manufacturing and industrial environments. I will ask why this practice of visual management is held in such high regard, despite it going against the beliefs of the community into which we are introducing it. I will also question my response to the resistance I encountered to the deployment of visual management boards. Despite my own lack of conviction that what we were doing was right, I still 'went along' with the deployment of the boards. I will also discuss how the 'Safety, Quality, Cost, Delivery and People' (SQCDP) measures that compose the visual management boards are an attempt to generalise the particular, representing 'thin formulaic simplifications' (Scott 1998), as opposed to the 'thick descriptions' (Geertz 2000) that I will argue are better suited to the management of change within a complex organisational setting.

Visual management deployment in Grosvenor

A previous role that I held was in the Lean Deployment Team at our manufacturing plant in Grosvenor, UK. Grosvenor is the main manufacturing centre for the wings of all Goxhay aircraft; it employs around 6000 people, the majority of whom are based on the shop floor and engaged directly in the activity of manufacturing aircraft wings. The organisational structure of the Grosvenor plant follows well-established hierarchical principles: overall responsibility for the performance of manufacturing operations is the duty of the plant manager, to whom a head of operations reports for each area of the manufacturing facility, divided up in line with the product and manufacturing activities. Each head of operations has a manufacturing manager, to whom team leaders for the individual manufacturing teams report. The broad principle behind this structure is one of cascading information down through the management structure and escalation of issues and requests for help back up. As part of the drive to improve the communication of issues and management of the local teams, it had been decreed by the central lean team that we would implement visual

management boards in each of the team areas. These are known as SQCDP boards, after the topics that were to be covered in the team meetings in which they were used: Safety, Quality, Cost, Delivery and People. The designated purpose of the boards was twofold: to provide a standard script for the start of shift meetings, and to provide a visible focal point for the team's issues, to be displayed prominently in the manufacturing area. My role in this was to manage the deployment of the SQCDP boards in the Grosvenor workplace.

I thought at the time that this was the right thing to do because I had observed great variation in the way that team leader approached the start of shift briefing with his team: the message being conveyed seemed to depend more on the personal style of the team leader than on the information he was required to put across. If a team leader was a confident speaker, with a team he was comfortable with, then the start of shift meeting could be quite comprehensive, with the team gathered around the board and the information shared enthusiastically. If the team leader was not so confident, then the meeting could be a rather short affair, with only part of the team present and little more than a cursory 'Right, you all know what to do, so get on with it' from the team leader. I viewed this as an unsatisfactory situation, and one that could be addressed through standardising the start of shift meetings by giving the team leaders a standard information board to present, a standard script to follow, and training in how to run the start of shift meeting.

The deployment of the SQCDP boards was undertaken by the local lean agent in each team, the lean agents being members of the process improvement team of which I was a senior manager. The term 'lean' in their title refers to the principles of lean manufacturing, which is a management philosophy developed in the automotive industry by the Toyota motor corporation originally termed the Toyota Production System (TPS). Taiichi Ohno, a plant manager at Toyota in the 1950s who is credited as the originator of the TPS, states that 'The basis of the Toyota production system is the absolute elimination of waste' (Ohno 1978: 4). The deployment of lean agents in the local teams was part of Goxhay UK's drive to introduce lean manufacturing principles into the manufacturing environment in order to remove waste – and thus unnecessary cost – from the business.

Part of the role of the lean agent was to introduce the teams SQCDP board, through deployment of a company standard that was being rolled out across all 11

Goxhay manufacturing sites throughout Europe as part of a corporate initiative to improve control and communication in the manufacturing areas. The intent of the standardised process was that any manager from any plant in Goxhay could walk onto any shop floor and understand the exact status of the build process by looking at a standard team board. This, it was believed, would enable issues to become transparent and escalated for resolution by the appropriate department more expediently than was possible in the current situation, which relied on the team leader contacting the relevant area for support. This in turn would reduce waste in the business.

Once the SQCDP board had been deployed and the team trained, so that the process of using the team board was ready to start, there was a ceremonial inauguration of the board, attended by the plant management team along with the local team, to signify the importance of the occasion. This included a congratulatory speech by the plant manager to emphasise the importance of the SQCDP boards in improving the performance of the plant. As a senior member of the lean team, and member of the plant management team, I attended these inauguration ceremonies. One particular ceremony that sticks in my mind was the unveiling of the SQCDP board in the Large Component Machining and Assembly area.

Boards upon boards

The alert flashed up on the computer screen on my desk, '45 minutes till launch of SQCDP board in Large Component Machining and Assembly Centre'. I like to arrive early for these ceremonies, to assure myself that everything is ready and going to plan; for, as stated earlier, there was considerable focus both at plant and corporate level on the deployment of the SQCDP boards – so to fail against the deployment plan was considered to be somewhat career-limiting. The 45-minute alert was not purely down to my over-cautiousness surrounding this event; it was also there to ensure that I had sufficient time to reach the SQCDP board, as my office was some distance from the shop floor. Goxhay, like many other manufacturing companies, has made inroads into co-locating the offices and the shop floor in an attempt to remove any barriers to cooperation and obviate the 'them and us' attitude prevalent between the blue-collar shop floor personnel and the predominantly white-collar office staff. However, the physical layout of the

Grosvenor plant meant that some staff, such as myself, were located in the main office block – a place both physically and emotionally distinct from the main factory building. I collected my safety gear, ear plugs, bump hat and safety glasses, and changed into my company issue safety shoes – all mandatory gear if you wanted to walk around the shop floor without being restricted to the safe green walkways, but unnecessary and uncomfortable if, like me, you spent most of your day safe in the office.

As I left the office to cross the link bridge that joined the main office block to the factory building, I bade a fond farewell to my office colleagues. This was a tradition whenever anyone was leaving their desk for any period of time; partly in case anyone came asking for you, so that they could let them know where you were; but partly in jest about going to 'the other place': the noisy shop floor, devoid of any of the creature comforts of the office – a place so dangerous that it required special protective equipment to survive. This distinction between the office and the shop floor environment was nowhere experienced more viscerally than when crossing the link bridge. The double doors at either end gave this area the feeling of an air lock between the warm, safe environment of the office and the cold, noisy, vast expanse of the shop floor – a sensation heightened by the marked temperature difference of the link bridge itself, its simple construction on this winter morning giving the air an anaesthetic chill.

As I descended the steps at the end of the link bridge I quickened my pace, weaving in and out of the groups of shop floor workers who were, like me, making their way from one production area to another. My destination was still some 10 minutes' walk from here, and I was keen to ensure that I had at least half an hour to review the board prior to the inauguration ceremony. It was not an uncommon phenomenon for management to be seen walking around the shop floor at a far greater speed than shop floor personnel. One senior manager even lamented that he always seemed to be walking twice as fast as all the people who worked for him, attesting to the difference in attitude between himself and the underperforming areas over which he presided (the retort – that maybe it was just because he was late for everything – was not appreciated). I continued on my journey toward the Large Component Machining and Assembly area through the main factory building in Grosvenor, which is a vast and sprawling affair. The oldest parts of the building

were constructed many years ago, with numerous additions over the years as the factory expanded from its original purpose of producing military bombers in the late 1930s through to its current role as the manufacturing centre for all Goxhay wings.

As I walked down the main thoroughfare, affectionately known as the 'green mile' by virtue of its coloured walkway, I passed underneath the main wing jigs for stage 1 of the B550 wings. Around me, the air was alive with the machine-gun percussion of riveting guns in use by the bolting crews – reminding me of the need to remove my ear plugs from my pockets and place them in my ears, where they would have more beneficial effect. Turning left at the end of the jigs, I crossed the main access route down the centre of the factory, a wide corridor clear of any obstacles to allow the safe passage of the partially assembled wings as they make their way through the factory, gathering more and more components as they go, until finally being despatched to the customer. Turning right, I waited for the electric tug transporting a cage of components to their footprinted area on the shop floor for consumption into a set of aircraft wings, before making my way past the bottom of the wing assembly flowline. Tranquil in contrast to the percussive noise of the stage 1 jigs, the flowline is where the installation of systems components takes place, and where another few hundred men and a handful of women toil in an almost silent choreography with components and machinery. Every now and then, some of these spill onto the gangway upon which I am walking – mobile chicanes for me to navigate around as I speed toward my destination.

Rounding another corner, I found myself in a dramatically different environment. Though still in the same building as the assembly areas through which I had just passed, the atmosphere felt darker, more oppressive, almost claustrophobic as I followed the winding gangway through the gargantuan machine tools of the Large Component Machining and Assembly facility that manipulate and fashion the raw material into components. The air was thick with the smell of cutting oil and the low rumble of metal churning against metal in the gearboxes of the leviathan machine tools. I was clearly a visitor to this world, marked out by shiny safety shoes and safety glasses that still had their instructions labels, not sporting the boiler suit of the assembly worker but the shirt and tie of the office staff. Still weaving my way in and out of groups of shop floor workers discussing last night's TV or the football scores along with what they were doing and what they should do next to continue the

process of building aircraft wings. I felt myself to be an interloper here, on an occasional visit to check that the plans I had made in my natural environment – the warm office of the second floor – were being faithfully followed out here in the noise and industry of the shop floor.

I met up with a member of my team, Iain, the lean agent for this area, who over the last few weeks held workshops with the local team on the deployment of the SQCDP board. These were normally done 'off-line' in a meeting room local to the team's workplace. The board was developed there and then wheeled out into the workplace for the opening ceremony and subsequent use. As I reviewed the content and presentation of the SQCDP board with Iain and the team leader, a local lad by the name of Pete, I took the opportunity to ask the Pete how he felt about the SQCDP boards – how he thought they would benefit his role as team leader and what (if anything) he thought we could do differently to improve the standards of the boards. This was not just idle 'chit chat' on my part: experience had taught me that experienced team leaders such Pete as could be invaluable in ensuring the successful deployment of any tool that was designed to be used by the local team.

Team leaders such as Pete were invariably ex-fitters themselves who had been given the role of team leader on the basis of their expertise in performing the shop floor work, usually in the same area that they were now leading. Their experience and knowledge of their local area is unequalled. For reasons I shall explain shortly, even though I did genuinely value the input from Pete, I was not expecting him to be too complimentary about the process; and he did not disappoint. His reply to my question of how he felt about the SQCDP boards was one of indifference. He was quite forthright in telling me that there would be no benefit to him or his team from using the SQCDP boards, but he just had to get on and do it, as those were the instructions from management (represented by me). I was not too surprised by this response; it was fairly typical of those we received from most of the 'shop floor people' when implementing SQCDP boards. At the time, I and the rest of the lean team attributed such resistance to change as the 'denial stage' of the widely acknowledged phenomenon of the change curve.

The change curve was originally developed by Elizabeth Kubler-Ross in her book *On Death and Dying* (1969), to explain the five stages of the grieving process that a terminally ill patient would go through when informed of their illness. The

stages she outlined – denial, anger, bargaining, depression, acceptance – have variously been rehashed by numerous management consultancy firms and authors of books on change management, but they all feature an initial resistance to the imposed change (imposed, in the sense that the person dying had not chosen to die at that point in life; and the majority of changes in the business environment similarly being enforced by a dominant management upon a resistant workforce) followed by acceptance of change after a period of time. The inference, in management and business terms, was that any resistance to change tends to disappear over time if the right pressure is applied for long enough. Other authors on change propose similar 'process-driven' approaches. Kurt Lewin's unfreeze–change–refreeze model (Lewin 1947) talks of dismantling mindsets before change can occur. John Kotter (1996: 21) posits an eight-stage process of creating major change, in which he talks of

> establishing a sense of urgency, creating the guiding coalition, developing a vision and strategy, communicating the change vision, empowering a broad base of people to take action, generating short term wins, consolidating gains and producing even more change, and institutionalising new approaches in the culture.

The inference, in relation to organisational change, is that change is accepted, with the passage of time, provided the correct process is followed. That notion of a process of change was what I believed to be the correct approach to the implementation of the SQCDP boards; so I was not unduly concerned by Pete's resistance to the introduction of the SQCDP boards on the morning of the inauguration ceremony for his own. I felt safe in the knowledge that this was just all part of the process and that in the fullness of time he would come round to my way of thinking and accept this as the right thing to do.

In order not to get too bogged down in debating the merits of the SQCDP board, I changed the subject slightly and asked why they had decided to site the board where they had. This elicited a very different reaction from Pete. Rather than the indifference that greeted my previous offer of conversation, this response had passion. It seemed almost as though he had been waiting for this moment. He gave me a look that was part incredulous, part exasperation; and replied with some glee, 'because that's where we had the previous SQCDP board'. With a ceremonial flair,

he pulled aside the board to reveal a previous incarnation of the same process – a dust-covered board on a stand very much like the one we had been working on, with the letters *SQCDP* in bold across the top and a raft of out-of-date and long-forgotten key performance indicators listed below. As if that was not enough, he then led me to an even earlier version of the same process, stacked in a corner of the workshop (I guess by then they had run out of space on the shop floor for the historical collection of team boards). This board also had a similar feel, although it only had *QCDP* emblazoned across the top, the 'S' for safety only having been added in later incarnations. It was clear to me that Pete was revelling in the failure of the previous initiatives, and viewed this reiteration as just another management drive that was inevitably doomed to the same fate as all the previous attempts.

Looking back on this, I am now struck by my acceptance of the situation. Not of my acceptance of the team leader's attitude toward the SQCDP board (as I said earlier, his resistance was not unique; and I made sense of it at the time in terms of understanding change as a process that took time to get through). Rather, I am struck by how I and the rest of the management team were willing to accept that deploying a solution that had not worked in the past, without any significant change in the environment or the solution, would somehow work this time. It was not that we were not aware of previous failures to introduce SQCDP boards to the shop floor environment. The lean initiative within Goxhay had been underway for some 8 years or so, and many of the management team had been involved in previous deployments. Some were even part of the team that had deployed the previous board in this location, and so were acutely aware of its failure. Nor was it that I myself had any particular faith in the solution being deployed. While I had worked for many years in the automotive industry and had previously had many successful experiences of deploying team boards of the SQCDP type (one of the reasons I was successful in being recruited into Goxhay was my lean experience), I was beginning to question for myself the merits of enforcing such a process into an area that was unreceptive, having seen at first hand similar failings in other areas of the company. Neither was I alone in having these doubts about the efficacy of this type of deployment: in private conversations with other members of the management team (who reported similar conversations with others), the discussions tended to take the approach 'Here we go again, another drive to introduce visual management' – the

tone and expectation of the conversations being that we were heading for another failed initiative.

Why, then, were a dozen or so members of the plant management team, all of whom had like myself donned the protective equipment in order to venture into this alien environment to join the local manufacturing and lean deployment team, standing around an SQCDP board celebrating the inauguration of what – based on past experience and current expectation – could be a resounding failure? Why did I not speak up and voice my own concerns to the rest of the management team?

I had no response to Pete's grand revelation of the former failings of the SQCDP boards. Standing amid the noisy shop floor, safety shoes bathed in the yellowish light of the sodium lamps high in the ceiling above us, it seemed futile to argue the rationalist position of visual management when faced with Pete's empirical stance based on past experience. Even my usual counter for the 'We've seen it all before' attitude – 'Well you haven't seen it from me!' – seemed hollow in the circumstances.

Two areas that I would like to enquire into, to elaborate upon the above question, are why the management team accepted what was expected to be a failed initiative, and why the rational initiative of visual management, designed to enhance the communication and management of the production activity, had failed to work in this environment.

The rationale for the visual management SQCDP boards

The purpose of the SQCDP boards was to capture in one place and make prominent any information about that manufacturing area that was considered key to its successful operation, in order to:

Act as a script or aide-memoire for the team leader of the manufacturing team.

> It was thought that the team leader's role was subject to a high degree of variability, with one team leader's activities differing from another's. This variability in their performance of their duties was regarded as a root cause of the substandard performance of Grosvenor plant manufacturing's performance – the logic being that if all team leaders performed to a

consistent standard, based on best practice, then the performance of the manufacturing plants would improve.

Clearly signal the status of the performance of the manufacturing cell and make visible to all any issues requiring resolution.

Another observation that had been identified as contributing to poor performance of the manufacturing plants was the slow response to issue resolution by the support teams in the manufacturing areas. Making these issues clear and consistent by having them displayed on a board in the manufacturing area was seen as key to improving this aspect of performance.

These are the two fundamental tenets behind the implementation of visual management in the form of the SQCDP boards. The boards are concerned with the management of information and activities required for the successful discharging of the production activities of that team, and making those activities visible to the production team and support areas with the aim of removing 'waste' in the form of variation from the production processes. Against this intent, visual management can be seen as the rational thing to do in the sense of rationality as 'a method of deciding that involves setting clear objectives, gathering the facts, generating options, and choosing one that maximized or satisfies the objective' (Stacey 2007: 152).

In Project 2, I wrote about this notion of technical rationality (Stacey's sense 1, cited above), which is 'typically seen as a concept that is well defined and context independent' (Flyvbjerg 1998: 2). Stephen Toulmin describes this notion of rationality as the scientific method of observation, deduction and generalisation (Toulmin 2001: 47). This type of rationality shaped the context within which the SQCDP boards were devised. The rationality of cause and effect is that if we observe something to be good and true in one situation, we can, through scientific inquiry, abstract all that is good and true and transplant it into another situation through the 'the creation of true, objective knowledge following a scientific method' (Alvesson & Skoldberg 2009: 1).

In this sense, the SQCDP boards are an abstraction – an attempt to generalise the particular and then apply the general back onto the particular to elicit the same results insofar as the contents of the SQCDP boards – the key measures and

information they contained – have been observed to be of interest or importance in production areas that were seen to be performing well at a given point in time. These production areas have been studied at length, and from the immeasurable totality of events that constitute the success of that production area, a few (perhaps 15 or so) key performance indicators (KPIs) have been identified as being the essence of what have made that production area successful. These KPIs have then been reinterpreted as the way that other production areas should work in order to achieve similar success.

I relate this abstracting of what made a particular event important or interesting to the observer to what James Scott referred to as 'thin formulaic simplifications' (Scott 1998) that cannot hope to capture the rich day-to-day lived experience of what actually happened in that production area, since 'any large social process or event will inevitably be far more complex than the schema we can devise prospectively or retrospectively to map it' (Scott 1998: 309). This premise is no more acutely illustrated than in the case of another SQCDP board that we established in a different area of the Grosvenor plant as part of this deployment in the equipping or 'Stage 2' area of single-aisle wing manufacture. To elaborate on this point, I will focus on one aspect of the 15 or so KPIs that constitute the SQCDP board – the skills training matrix, which was detailed below the 'P' for people.

The failure of the rationale for the visual management SQCDP boards

The wings at Grosvenor are assembled in two discrete areas, known as stages. Stage 1 is the structural assembly, where the component parts of the wing are brought together in a build jig – a fabricated metal structure that holds the component parts in the correct attitude to each other so that they can be assembled together. Stage 2, is the equipping stage, where the system components of the wing (fuel, mechanical and electrical systems) are installed into the assembled wing structure. Most of the system devices fitted in stage 2 are mounted on the outside of either the front or the rear spar (the large aluminium girders running the length of the wing) and as such access for installation is relatively easy. However, some of the components – particularly for the fuel systems–must be fitted inside the wing structure itself. Access to these parts is not so easy, and can only be achieved by reaching into, or in

some cases even crawling inside, the wing structure itself through the small fuel tank apertures in the bottom of the wing skin.

All aircraft fitters working on aeroplane wings must be trained and accredited to do the particular work required. This process is known as 'getting your stamp' – a reference to the time when fitters would stamp the build log book for that particular wing to certify that they had done the work to the required standard. Nowadays, this certification is done electronically on the company's Enterprise Resource Planning (ERP) system by means of the fitter entering his stamp number against an electronic manifest to certify that the work has been done; but the term 'stamp' is still used. One of the challenges facing the team leader of the production areas is ensuring there are enough adequately qualified fitters: many a production deadline has been missed through not having enough people on the team with the required 'stamp' to do the work. This was one of the areas that the SQCDP board was designed to address.

Under the 'P' (People) heading was the skill training matrix for that particular team – a table with the names of the team members on one axis and the required skills relevant to that area of the production process on the other. Where the grid intersected for a given person or skill, a symbol would be placed to represent that person's ability to perform the task. This would normally take the form of an 'ILUO' where the characters would be formed from the sides of a square, the single vertical of the 'I' representing low skill level with the full box of the 'O' representing fully skilled/capable of training others. The intention was twofold: firstly, that the team leader would allocate work at the start of the shift by looking down the skills matrix to identify, among people in attendance on that shift, those capable of performing the task and allocate the work accordingly. The team leader was also encouraged to ensure that his team was as multiskilled as possible, to avoid being caught out if the person designated for a particular task was out at any point. Against the technical rationality of sense 1 (Stacey 2007: 152), this is clearly the rational thing to do: having identified the requisite skills to do the job, surely it is merely a case of training fitters to the required level and then discharging the work in accordance with the prescribed method to achieve the desired result? This is the premise upon which we in the management team, including myself, convinced ourselves that the SQCDP boards were the correct thing to do – the underlying rationale for this conviction being at best shaky, and at worst nonexistent.

To understand the above claim further, we need to take a few steps back and first understand how the prescribed methods for performing the build operations on an aircraft are determined. The following procedure is not unique to aircraft; it is standard across many manufacturing industries.

When an assembly operation is first performed, it is usual to ask a skilled and experienced fitter to undertake the activity along with an engineering specialist in that discipline. Between them, they will determine the best way to go about performing that operation, not only from a practical point of view – by which I mean the best way for someone to perform this particular operation (such as use of an appropriate tool, required skill level) but also in assessing whether it is technically acceptable to perform the operation that way (stress induced through the process, compliance with the design intent, etc). Once the best way has been agreed, it is then the duty of a methods engineer to capture the process – the steps, tools and materials – in a work instruction that can be used to communicate the required activity to any suitably trained person, who can then successfully replicate the build activities. This is the first point at which the underlying rationale for SQCDP boards is called into question. In capturing the actions of the skilled fitter in undertaking the assembly activity, the methods engineer must abstract and translate what he sees – a dynamic four-dimensional temporal activity of movement and effort in time and space carried out by a particular person – into a flat, two-dimensional work instruction that can be understood by anyone. This process of abstraction not only necessarily aggregates and reduces complex human action into simple statements, thus losing granularity in the process; it also, necessarily, translates the instinctive and interactive human actions of thought, muscle reaction, coordination, adjustment, balance and discretion into an engineering language of do this then that followed by... The result of this loss of granularity and errors in translation being that it is not uncommon in extreme cases for aircraft fitters to regard it as impossible to build the product if you follow the process. The problem is not that the process could be written any better or more accurately; it is just that the live activity of human action cannot be captured in such a frozen snapshot.

The premise upon which we in the management team convinced ourselves that the SQCDP boards were the correct thing to do was our questionable assumption that the methods upon which the training was based were accurate and universally

applicable. Even in cases where the process has been accurately captured and, if followed, can produce the required result, the premise that anyone trained to the required skill level will be able to produce it as proficiently as the next person – thereby allowing work to be allocated on the basis of the skills training matrix – fails to take into account the human expression of preference.

Tank rats and dry bay Derek

I was attending a start of shift meeting in one of the stage 2 manufacturing areas shortly after the SQCDP board had been introduced in that area. The team leader was dutifully following the process and going through each item on the board according to the script he had been given. When it got to the 'P' part of the board, he started to distribute the work to the assembled team. However, rather than referring to the attendance tracker to establish who was in on that shift and then cross-referencing the skills training matrix to apportion activities, he just addressed the team and assigned tasks based on his personal understanding of each person's capability. This alone challenges the management team's assumption that team leaders would use the skills training matrix to allocate work to the team members: it was quicker for the team leader to work out who should do what in his head, rather than refer to the board, which would require constant revision. Sometimes a new team leader, unfamiliar with the skills of that team, might refer to the skills matrix to allocate duties; but in practice, the board was usually updated (if at all) in retrospect, reflecting the decision taken, rather than to inform that decision. The skill training matrix could not contend with preference or experience outside of the simple ILUO classification. This is illustrated by the case of dry bay Derek.

As mentioned at the start of this section, the majority of work undertaken in stage 2 was on the outside of the wing, on either the front or rear spar. However, some tasks required access to the wing tank itself via the fuel access apertures in the underside of the wing. The wing tank is divided up into 'bays' that are bounded by the wing ribs inside the tank; it is not a nice place to have to work. Most of the work is carried out by having your head, arms and torso inside the wing tank with your bottom and legs outside the wing tank. Some of the bigger tank sections toward the root end of the wing (the end of the wing that connects to the aeroplane) require the fitter to climb completely inside the tank – a claustrophobic working environment

that is not only unpopular, but can also be physically incompatible with people's size: toward the wing tip, the fuel tank apertures are not compatible with anyone having a waist measurement over 36 inches. While tank work was not at the top of everyone's list of favourite jobs, some fitters (mostly of smaller stature) specialise in this kind of work and are known affectionately in the trade as 'tank rats'.

Not only are tank rats physically suited to the work; they actually prefer it – for reasons that I can only conjecture. Perhaps they are not so comfortable with other tasks they may be asked to do, and being first in line for doing something that others dislike reduces the likelihood of them having to something even more onerous. It may be that they value their exclusive reputation within the team; or it could be that they have more chance of earning overtime, given the smaller resource pool for that type of work. Whatever their reasons, their preference could not be expressed in the language of the skills training matrix, which recognised only standardisation in the name of removing waste. How could you account for something that could be best done one way on one occasion and best done another way on some other occasion, with no way of knowing in advance which factors determine the best way for that occasion? Probably the most specialised and famous of all the tank rats is 'dry bay Derek'.

There are even preferences within the world of wing tank working. Some wing tank bays, as I have said, are larger than others; but the nature of the work undertaken also determines the appeal or otherwise of a particular wing tank bay. Among the least preferable on a B550 wing is what is known as the 'dry bay', situated between ribs 7 and 8 above the engine pylon. Most wing tank bays are full of fuel when in use; others, like this one, are not (hence 'dry'). The dry bay between ribs 7 and 8 is directly above where the engine mounts, so it requires a lot of systems installation (fuel pipes, pumps, electrical harnesses, etc); in this location, the work is technically demanding and difficult to access. It is one of the least favourite jobs on the B550 wing. For whatever reason, one of the fitters on this shift, a man called Derek, had taken a liking to this work and such was the first point of call whenever the job arose – and not only within his team: such was his fame that the shop floor would somehow organise itself (no one ever admitted to doing this) such that the requirement for the dry bay work always ended up on Derek's shift. Derek was not the only person who could do the work, but he was far more proficient at it and

needed less cajoling to do it than anyone else. So there was no surprise at the consternation from the team, at the start of morning shift, when it was realised that dry bay Derek was absent that day. It was also no surprise to the attendant team that the skills training matrix was not even glanced at in the activity of deciding who should do the work instead. Rather, the team leader undertook to start negotiations with the team members after the team meeting in order to find a willing volunteer to do the dry bay on that particular wing.

This was not an unusual occurrence, nor was it unique to the dry bay work or Derek. I have been in many performance reviews where a missed target has been explained by the fact that someone with special knowledge of the task was absent that day. Once again, stood there in this meeting, I found myself struggling to understand how we allowed this to be the case: this was exactly why the SQCDP boards were put in place – to clearly elucidate the requirements and capabilities of the team, making visible any deficiencies. I was also struggling to understand why, if the boards did not work and had not worked before, we were persisting in their deployment. To understand further, we need to explore the nature of knowledge; in particular, that of *episteme* (scientific knowledge) and *phronesis* – the ability to decide how to achieve a certain end, but also the ability to reflect upon and determine good ends consistent with the aim of living well overall.

Episteme, techne and phronesis

> Above all, one should not wish to divest existence of its rich ambiguity.
>
> (Nietzsche 1974: 335)

Nietzsche's position on 'doing science' is taken up by Flyvbjerg in his book *Making Social Science Matter*, where he argues that 'true expertise is based on intimate experience with thousands of individual cases and on the ability to discriminate between situations, with all their nuances of difference, without distilling them onto formulas or standard cases' (Flyvbjerg 2001: 85). Flyvbjerg is writing here with particular relevance to the use of narratives in case studies and how 'such narratives may be difficult or impossible to summarise in neat scientific formulae' (ibid: 84). This he contrasts with what he terms 'Knowledge at the beginner's level', which he

argues ‘consists of precisely the reduced formulas which characterise theories’ (ibid: 85). Hubert Dreyfus elaborates on this point when talking about the acquisition of our basic social skills, in that they

> may have been acquired by consciously following rules defined over elements but, like any skill that has reached a level of mastery, our ability to cope with everyday things and situations is no longer caused by and cannot be analysed into the elements that went into its acquisition. (Dreyfus 1982: 11)

I relate this to the situation of the SQCDP boards, with the skills training matrices in this sense being reduced formulas where the intimate experience with thousands of individual cases is the expert experience of the team leader. This expert experience manifests itself as the practical, everyday decisions that the team leader takes with regard to deployment of his team in accomplishing the duties required for that day/shift. Decisions are taken without the technical rationality of the SQCDP board; a rationality that is originally based on the observed actions of team leaders carrying out their ordinary everyday duties, but in the translation from observed behaviour to quantifiable action loses its original value – the ability to cope with everyday things and situations. Philippe Bourdieu, whose work I shall return to shortly, expressed this as follows (1977: 36):

> Once one forgets all that is implied in extracting from the product the principles of its production... one condemns oneself to proceed as if the regular product had been produced in accordance with the rules.

The reason why our ability to cope with everyday things and situations that are no longer caused by and cannot be analysed into the elements that went into its acquisition, is due to the importance of context, its relevance to the logic of theory in social sciences and their use in the understanding of organisational management.

Theories in organisational management – for example, that a given work task is constant over time and space, or that an individual’s ability to undertake that task can be measured and assessed to predict the outcome – ignore the importance of context. In this sense, this approach to understanding the social world of commercial organisations can be said to be epistemological; that is, aligned to the Aristotelian intellectual virtue of *episteme*. Flyvbjerg explains that the term *epistemic science*

'derives from the intellectual virtue that Aristotle calls *episteme*, which is generally translated as science or scientific knowledge' (Flyvbjerg 2001: 55). As Aristotle expressed it in his *Nicomanachean Ethics*:

> Scientific knowledge is a demonstrative state... i.e. a person has scientific knowledge when his belief is conditioned in a certain way, and the first principles are known to him; because if they are not better known to him than the conclusion drawn from them, he will have knowledge only incidentally.[11]

This notion of the application of first principles that are universal and better known to the scientist than the conclusions that can be drawn from them forms the cornerstone of the foundations of the modern scientific ideal as expressed in natural science. It is this scientific notion of knowledge that is taken up in the dominant management discourse – particularly within the understanding of systems thinking, 'the profession of regulation' (Beer 1985: x), where it is accepted that being able to understand the mechanics of a phenomenon is more important than being able to understand the phenomenon itself. As Griffin reflects in his work on leadership and ethics, 'we have come to regard ourselves both as having experience and also being able to detach ourselves from this experience, to manipulate and change it by applying scientific thinking. This has come to be synonymous with our understanding of management' (Griffin 2002: 179).

This approach to knowledge in the social sciences of management helps to explain our implementation of the SQCDP boards, despite overwhelming evidence for their lack of effectiveness. We returned to this approach because, to paraphrase Stephen Toulmin's account of the challenges of being reasonable in a rationalist environment, we can 'justify [ourselves] in the court of rationality' (Toulmin 2001: 2).

This is the inexorable lure of the epistemological approach to understanding that, as Aaron Wildavsky commented in his work on planning, 'is not defended for what it accomplishes but for what it symbolises – rationality. [It] is *conceived* to be the way in which intelligence is applied to social problems' (Wildavsky 1979: 129,

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[11] See Penguin edition (2004), p. 1139b18–36.

emphasis added). Despite 'no adequate scientific evidence base for the dominant management prescriptions for managing and leading organisations' (Stacey 2010: x), our conception of it as the right thing to do perpetuates the scientific approach to management that currently pervades the dominant discourse. This then makes it the right thing to do when viewed through the epistemological lens of the dominant discourse, for to do anything else would be to admit to only having knowledge incidentally and leave the discourse open to what the philosopher Richard Bernstein calls 'Cartesian anxiety, the fear of ending in relativism and nihilism when one departs from the analytical-rational scientific tradition that has dominated western science since Descartes' (Bernstein 1985: 16). In this sense, it can be seen that the analytic-rational, scientific approach of the dominant management discourse, like that of any other social system, tends naturally to persist through the reinforcement of what Elias referred to as 'second nature or embodied social learning' (Elias 1989: ix) – the concept of *habitus*.

Habitus

Pierre Bourdieu, the French sociologist, anthropologist and philosopher, wrote extensively about the phenomenon of social formations reproducing themselves; he described these as 'structured structures that are predisposed to function as structuring structures' in what he termed *habitus* which he defined as 'systems of durable, transposable *dispositions*' (Bourdieu 1977: 72, emphasis in original). In this work, which is based upon his ethnographic research and study of the Kabyle peoples of Algeria in the late 1950s, he challenges the notion that behaviour can be understood from a theoretical objectivist viewpoint that can then be related as rules governing social behaviour. Instead, he argues that rules are a 'notion [that] provides a solution to the contradictions and difficulties to which the researcher is condemned by an inadequate... theory of practice' (Bourdieu 1977: 22). The sense that I make of this in relation to my experience of managing within the dominant management discourse is that the scientific approach assumes there are rules to be found in the form of first principles, obedience to which is the determining principle of all practices. Bourdieu describes this approach to understanding as a 'refuge for ignorance' that 'enables its user to escape from the dilemma of mechanism or finalism' (ibid: 22). Mechanism in this sense refers to practice as a 'mechanical

action directly determined by the antecedent conditions' (ibid: 73), and finalism as practices 'determined by anticipation of their own consequences' (ibid: 72).

It is this ability to escape from this dilemma that rules enable theory to explain observed regularity (the need to escape from dilemma being driven by the necessity to resolve paradox in the tradition of epistemic science where, in to Aristotle's words, 'we all assume that what we *know* cannot be otherwise than it is'.[12]) In the case of the skills training matrix on the SQCDP board, it is there through a need to be able to describe the observed regularity of the behaviours of successful team leaders in terms of strong cause and effect, the if–then logic of the dominant scientific management discourse. What sense are we as managers to make of the success or otherwise of the areas we have stewardship of (the manufacturing activities undertaken by the teams that we are responsible for) if we cannot make sense of the activities within the discourse of scientific management? If the success or otherwise of a particular team leader is purely due to luck or happenstance, then we are in the position of 'Cartesian anxiety' subject to relativism (there being no absolute truth or validity, only relative, subjective value according to differences in perception and consideration) and nihilism (life is without objective meaning, purpose, or intrinsic value). What sense can management make of their role and worth to an organisation if there is no objective meaning to be determined, or if that objective meaning differs from one instance to another sufficiently to make any sense that can be made of the first instance not transferable to the next?

'To consider regularity, that is what recurs with a certain statistical measurable frequency, as the product of consciously laid down and consciously respected ruling […] or as the product of an unconscious *regulating* by a mysterious cerebral and/or social mechanism, is to slip from the model of reality to the reality of the model'(Bourdieu 1977: 29).

In order to make sense of what is happening in commercial organisations and management roles within them, managers slip from the model of reality to the reality of the model. Devices such as the SQCDP boards, and KPIs such as the skills training matrix, are not the reality of the manufacturing environment; they are the

[12] Penguin 2004 edition, p. 1139b18–36; emphasis in original.

model of the reality of the manufacturing environment that is consistent with the apparatus and approach used to understand observed phenomena in that environment. The rules – for example, that 25% of all people must be able to do at least three tasks, to ensure that the work can be carried out at any given point in time – are not the rules that the successful team leader observed, but the observation that the engineers, managers and lean agents made when trying to make sense of the observed behaviour of the area under observation in accordance with the understanding of the environment as scientifically describable.

But lean agents and engineers cannot simply abandon the notion of scientific management and point out to the rest of the management team the error of their ways. To point out, as Ralph Stacy observes, that 'organisations and management sciences are not sciences at all, but scientific emperors with no clothing' (Stacey 2011: 19), would not only risk jeopardising our personal career (we are not all fortunate enough, like the truthful little boy in the story, to have a partisan crowd around us), but would also be problematic conceptually, given that it implies that there is some 'other' truth that is out there. In social organisations, truth (as Michel Foucault observed in his work on truth and power) is 'not the ensemble of truths to be discovered and accepted, but rather, the ensemble of rules according to which the true and the false are separated and specific effects of power attached to the true' (Foucault 1994: 132). In this understanding of truth, truth is not an absolute objective entity, but subjective according to the power relations within social organisations. If the management team determine that a certain way is the true way of managing an organisation, then that *is* the true way until they are able to be convinced otherwise. And convincing them otherwise cannot be achieved solely by pointing out some other way of doing things; for some other truth to be recognised requires a 'modification in the rules of formation of statements which are accepted as scientifically true' (ibid: 114).

This is not to say that change does not or cannot happen; clearly it does. In his book *The Germans* (1989), Elias points to the many of the ways in which the features of the German personality, social structure and behaviour led to the rise of Hitler and the ensuing Holocaust. He also points out that 'just like tribes and states, a national habitus develops and *changes* in the course of time' (Elias 1996: 2, emphasis added). However, change must happen within what Fleck (1979) describes

as ‘thought collectives’, where what is already known influences the particular method of cognition; and cognition, in turn, enlarges, renews, and gives fresh meaning to what is already known.

This, then, is what Bourdieu is referring to by ‘structured structures that are predisposed to function as structuring structures’. Engineers’ and managers’ need to understand the commercial organisation an epistemologically predictable rule-obeying endeavour is predicated on the need to understand the organisation as an epistemologically predictable rule-obeying endeavour. Engineers and managers entering modern manufacturing organisations are being trained in scientific management tools and techniques in order to be able to work with the scientific management tools and techniques prevalent in modern manufacturing organisations. This then to some degree predetermines their *disposition*, which Richard Nice, translator of Bourdieu’s *Outline of a Theory of Practice*, describes as ‘results of an ongoing action… a way of being, a habitual state… a predisposition, tendency, propensity or inclination’ (Bourdieu 1977: 214). Thus, it is not just difficult to speak a different language from that of the dominant management discourse; the problem is also that any individual who is predisposed to observe the world in a certain way may be unable to see it any differently. George Mead, in his work on understanding the nature of consciousness, elaborates that ‘the individual organism determines in some sense its own environment by its sensitivity. The only environment to which the organism can react is one that its sensitivity reveals’ (Mead 1934: 245).

So it is in the *habitus* of the scientific management of the dominant discourse that we find the need for engineers and managers trained in scientific tools and techniques to find a need for objects such as SQCDP boards, which support dispositions transposed from the working environment to the business schools, then back into the working environment, in order to satisfy the need for the object in the first place. This is the sense that I make of instances such as the continuing clarion call for tighter and tighter control over manufacturing activities, because the current level of control is not working; the need to replace the current twice-weekly drumbeat meetings that are not working with daily meetings; and, of course, the desire to reintroduce initiatives that have already failed, such as the SQCDP boards. In the understanding of organisations as ‘systems of durable, transposable dispositions’ (Bourdieu 1977: 72), this is the logical outcome of predisposition of the

structuring structures. However, as observed by the failure of modern commercial organisations to last any longer than 40 years on average, not to mention the collapse of the financial institutes in 2007 and 2009 (Stacey 2011), the logical theories that underpin scientific management are inadequate to accurately predict and control the systems they are designed to manage; for, as Bourdieu (1977: 109) elegantly put it, 'Practice has a logic which is not that of logic'.

To recap, I have discussed how the seemingly illogical activity of redeploying a failed initiative such as the SQCDP boards is logical within the context of understanding the organisation as a habitus (a system of durable, transposable dispositions); and how the habitus of the dominant management discourse is aligned with that of the epistemological understanding of knowledge being universal, invariable, and context-independent. I would now like to explore a different understanding of knowledge that may be more appropriate to the everyday experienced world of practice: that of *phronesis*.

Phronesis

Flyvbjerg (2001: 57) contrasts *episteme* against two other intellectual virtues, *techne* and *phronesis*:

> *Episteme*: Scientific knowledge. Universal, invariable, context independent. Based on general analytical rationality.
> *Techne*: Craft/Art. Pragmatic, variable, context dependent. Oriented toward production. Based on practical instrumental rationality governed by a conscious goal. The original concept appears today in terms such as 'technique', 'technical' and 'technology'.
> *Phronesis*: Ethics. Deliberation about values with reference to praxis. Pragmatic, variable, context dependent. Oriented toward action. Based on practical value rationality.

As discussed earlier, the application of epistemological and techne approaches to understanding the nature of activities in the everyday experience of work does not account for the importance of context. The design intent of the SQCDP board was borne out of an epistemological understanding of how things are in the real world, and manifest in the SQCDP boards as a technique to apply this understanding in the

real world. However, the actual practice of the team leader, for whom the boards were primarily intended, was one of phronesis – variable, pragmatic, context-dependent. In this case, the context is the changing environment within which the theory is practised: the noisy, smelly, dangerous shop floor, where people execute the theory of standard training and standard operations who are anything but standard within relation to each other, or even themselves over a given period of time. This environment is far removed from the context within which the theory was formulated – the office, where systems engineering approaches are adopted in an effort to make sense of the messy shop floor. In understanding the organisation as a system, people are grouped into systems and subsystems where difference only happens at the interfaces of these groups and homogeneity is assumed within each subsystem. Homogeneity is assumed not only within the subsystems at any given point in time, but also through the passage of time. The assumption is that as someone is capable of discharging a known task at a given point in time working as part of a larger team, they will always be capable of discharging a known task at a given point in time.

This approach toward making sense of what happens in social situations is what Flyvbjerg calls 'the deadly paradox of social theory' (Flyvbjerg 2001: 38) as he takes up the argument of Hubert Dreyfus and Pierre Bourdieu that the study of individuals in society can never be 'normal' because of the relationship between ideal scientific theory on one hand and human activity on the other. The limits on normality in this sense lie in the 'problems with explaining and predicting social activity using abstract, context independent elements' (ibid: 38). Czarniawska echoes this limit on normality, emphasising the importance of context in the use of narrative in qualitative research: 'if there is one general rule of field research, it is that all techniques must be context sensitive… there is no authority in the academic world who could foresee all contexts and occurrences' (Czarniawska 2004: 44). Alasdair MacIntyre emphasises that expectations and procedures are impossible in social science, as we cannot say of them in any precise way under what conditions they hold owing to the pervasive unpredictability which 'renders all projections in social life permanently vulnerable and fragile' (MacIntyre 1985: 103).

This then returns us to Flyvbjerg's 'deadly paradox of social theory': a theory, in the Socratic tradition, must be explicit, universal and abstract (Flyvbjerg

2001: 38) and ‘based on general principles independent of the facts, phenomena, etc’ (*Oxford Dictionary* 1982: 1109); but these criteria cannot be met in social science, given the context sensitivity of human activity.

Summary

In Projects 1–3, I have repeatedly explored how patterns of human relating are influenced by power relations and ideology when exercising the discipline of project management within the context of my own lived experience. In this project, that question has focused on my experiences of deploying visual management boards as an example of how power relations create the habitus of an organisation while at the same time being created by the habitus. I have also sought to clarify how understanding the organisations I have worked for as complex responsive processes in which population-wide patterns emerge in the day-to-day lived experience can help understand the behaviours and actions of those involved. In Project 4, I will focus on one particular aspect of project management where I argue that the common understanding of organisations as first-order systems with high if–then causality has led to knowledge being considered purely as epistemological or techne, context-independent and generalisable – the activity of ‘lessons learned’.

PRINCE2®, the UK and European project management standard, recommends keeping a log of any lessons learned during the project, so that these can be usefully applied to other projects (PRINCE2, 2005). In this sense, lessons learned, if applicable to other projects, are context-independent, universal and objective in the tradition of epistemological knowledge. The Project Management Institute (PMI), which sets the American standard for project management, also supports this understanding of lessons being transferrable from one project experience to another, going so far as to outline ‘the two steps involved in capturing lessons learned and the three steps involved in applying lessons learned, describing the key tools and tasks that can help project managers successfully capture and apply lessons learned’[13]. This is an understanding of experience as being:

[13] http://marketplace.pmi.org/Pages/ProductDetail.aspx?GMProduct=00101076200&iss=1 [accessed 2013 Dec 1].

- Something that can be usefully captured at a distance from its origin (lessons learned are normally carried out at the end of the project when something has failed to meet the expectations of senior people with an interest in its outcome)
- Capable of being faithfully recreated in the opposite direction to which it occurred (looking back on what happened and believing that we can place the same interpretation on the sense we made of it as we did at the time).
- Captured and usefully transposable into other projects at other times (context-independent).

This understanding of experience and its intended future use is not one that aligns with my understanding of organisations as complex responsive processes, which is developing through my studies on the research. Neither does it support my real-life experience of 'lessons learned' activities in the places where I work. Normally, a great deal of effort and activity is put into a lessons learned exercise at the end of a project that has not gone to plan. Workshops are held at which the views of the many actors involved are harvested by post-it note; after discussion and review, these notes are then abstracted into a summary for presentation to the executive team of the project – and in many cases, this is where the activity ceases. I have noticed that despite all the hard work and industry involved, the main lessons I have taken from such exercises – as participant, facilitator or sponsor – is to question the validity doing a lessons learned exercise in the first place. Too often, the end result is either affirmation of a problem that everybody knew about prior to the activity, which is too difficult to resolve (in which case we focus on the things that are within our circle of influence – that is, the things that are invariably not the problem); or we produce a weighty tome of analysis, culminating in golden rules that are generally ignored.

This is by no means a dismissal of the activity of lessons learned; nor am I proposing that we do not learn from our experience, as this is what we do every day in 'the activity of conversation itself [that] is the key through which forms of organising are dynamically sustained and changed' (Shaw 2002: 10).

The inquiry I will make in Project 4 is how considering a phronetic approach to understanding the lived experience of everyday organisational life may help us to

make better sense of the actual activity we experience, by gradually allowing the narrative to 'unfold from the diverse, complex and sometimes conflicting stories that people, documents, and other evidence tell them' (Flyvbjerg 2001: 86). I will examine how the thin formulaic simplifications, such as golden rules and the Boston Matrix, could be replaced by the 'thick description' of the narrative (Gertz 2000). How leaving in 'the minutiae' – rather than 'extracting the general from the particular and then setting the particular aside as detail, illustration, background or qualification' may actually help us in the face of the very difference we need to explore through the consideration of lessons learned happening at the same time as the experience and 'taking ones experience seriously with the aim of reflexively exploring the complex responsive process of human relating' (Stacey 2011: 488).

Project 4

Reflective narrative in the practice of lesson learned: The case for thick simplifications

Rib machining at Grosvenor

Some years ago, I was asked to undertake a project to re-plan the manufacture of aircraft components from our plant in Parkstown to our sister plant in Grosvenor. The stated objective of the project was to provide the capability to be able to manufacture components for our B550 product (ribs 7 and 8) on the machine tools at the Large Component Machining (LCM) centre in Grosvenor, in the event of not having the capacity to manufacture at the Parkstown plant. I use the term 'stated objective' for, as I will discuss later, no one involved in the project believed that this was the only – or even the primary – objective of the project; and indeed, despite the project achieving its stated objective seven years ago, rib machining has never been realised at Grosvenor; nor is it ever likely to. I do not believe that this results from any failure of the project activity itself: we successfully manufactured a number of good quality ribs that were subsequently used in production aircraft and duly captured all the relevant data required to repeat that activity, including a lessons learned exercise in a known repository (a designated area on the company's shared computer system), thus fulfilling the project stated objectives. Neither did the requirement for the manufacture of the components abate: B550 aircraft sales have been steadily increasing, thus increasing demand on component supply. Those involved in the project generally felt that there never was any intention to manufacture these components at the Grosvenor facility in the first place; that the real reason for the project was that it was part of an ongoing power struggle between two senior people in the Grosvenor and Parkstown plants – Gordon Roberts, the Parkstown plant manager, and Pete Buckle, his counterpart in Grosvenor.

Gordon and Pete

Gordon is a larger-than-life character, physically thick-set with apparently boundless energy and an in-depth knowledge of his subject-matter. He epitomises the successful leader as typically portrayed in contemporary management literature: he

has the seven habits, the 21 characteristics, the 100-day plan, the mission and the vision of the leader within the dominant management discourse of strategic choice theory. He can be outspoken, with a reputation for being blunt and at times painful to work for. On more than one occasion, I and others had been given the feedback that we were 'confusing effort with achievement'.

Gordon firmly believed in the principles of a goal-seeking cybernetic approach to management: you set targets and then drive people towards those targets. At the time of this project, I admired this trait in him. He had a galvanising effect on his management team, and there was little doubt about the direction we were all supposed to be headed in. You knew where you stood with him: he had a high degree of personal integrity and honesty that appealed to me. This, coupled with his formidable mental dexterity and inordinate ability to remember facts and figures, had led him on a successful career path through a number of companies and industries to this very senior position with Goxhay.

I didn't know Pete quite so well, being aware of him by reputation rather than personal experience. Pete was a product of Grosvenor, having started as an apprentice and worked his way up to the position of plant manager. His reputation was one of a people manager, as opposed to Gordon's task management style. Combined with his in-depth understanding of activities at the Grosvenor plant, he drew on long-standing personal relationships to manage and influence.

I always felt there to be an uneasy truce between Gordon and Pete whenever they met in a confrontational setting. Each recognised the other's authority and position – not to mention the damage they could do to each other's careers if a head-to-head confrontation was to escalate. Any power struggles between them therefore tended to be enacted through some intermediary mechanism, rather as bull sea-lions engage in posturing before battle in an attempt to avoid all-out combat, aware of the carnage that would ensue. It soon transpired that this project that I had been handed was just such an intermediary mechanism.

The performance review

In a regular review of production forecast to Grosvenor, Gordon had raised the risk with Pete about ongoing supply of ribs 7 and 8, a short-term risk due to capacity constraints on the particular machine tools used to manufacture them. At Parkstown,

we had contingency plans in place to ensure that supply to Grosvenor would not be interrupted; but we had to alert them to the risk (though they would have known about this already, as close links between the two sites ensured visibility on certain issues – especially those with the potential for political capital to be made). During this review, Pete offered help to Gordon and the Parkstown team: through the vagaries of production scheduling, Grosvenor had some spare capacity on one of their machine tools in the LCM, and Pete suggested that if we were struggling for capacity there was an opportunity to use the machine tool to manufacture ribs 7 and 8.

This apparent offer of help had another dimension: it transpired that everybody in that meeting (apart from me) knew that ribs 7 and 8 would never be made on the machines at Grosvenor. Though they had the capability to perform the required five-axis machining operations, they did not have the required quality approvals to certify the product. Nor did they have sufficient capacity to do the complete machining, only the rough machining process; this would require the ribs to be transported back to Parkstown for the finish machining – a costly and fraught process, given the 150-mile distance involved and the potential for introducing error by splitting the production process. This was apparently known to all the senior managers in the meeting who had experience of the LCM facility at Grosvenor. The unfeasibility of the proposal only became apparent to me when I visited Grosvenor to check on progress of the machining trails to be greeted by the laughable sight of by our 2M × 1.2M billet of aluminium sat at one end of the 35M machine bed of the LCM facility. The sight of this lumbering, giant-scale machine tool, designed for the manufacture of wing skins for Goxhay aircraft, nibbling away at the relatively minuscule billet of aluminium out of which our ribs were made brought the implausibility of the whole project into sharp relief.

The influence of power

I can only speculate as to why Pete had made this generous yet implausible offer of help to Gordon in the first place; it may have been that Pete had just made a hasty offer to solve a mutual problem, unaware of the precise detail of what was involved. What I can be more certain about was how the offer was taken up by Gordon. At the internal Parkstown review following our meeting with Grosvenor, Gordon was

fuming at what he saw as Pete's gamesmanship. The meeting with Grosvenor had been a bloody affair. Parkstown delivery performance into Grosvenor was not on target on a number of fronts and despite Gordon's spirited defence of the situation, his Parkstown ship was holed and taking on water fast. Pete had had the upper hand all the way through the meeting and then, in an apparent conciliatory gesture, made the offer of the LCM capacity. Gordon felt he had no option but to accept it. If he refused the offer, for whatever reason, he would have left himself open to accusations of not being a team player, of having a 'Fortress Parkstown attitude' (somewhat similar to the Fortress Grosvenor attitude, when the tables were turned). If then the unthinkable had happened and we had failed to supply ribs to Grosvenor after turning down an offer of help, Gordon's sparkling career would have been tarnished and potentially jeopardised. He had no choice but to accept the offer and put actions in place to be able to utilise Grosvenor's LCM capacity.

Playing out this Mexican standoff was what I understood as the real objective of the project to re-plan the rib manufacture at Grosvenor. An offer had been made between two very senior people and accepted publicly. To back down from this would have meant loss of face and a shift in the power relations that would very likely be unfavourable for the one who 'blinked first'. So, because of this, a team of manufacturing engineers, planners, quality engineers, logistics experts and myself were duly set a mission to ensure we had the capability for something we were certain there would be no future need for.

Lessons learned?

One of the requirements identified at the start of the project was to do a 'lessons learned exercise' as part of the project closure. As I will elaborate in the next section, this is normal practice in project management; it is intended to be a record of what had worked well and what did not, for future projects to learn from. In accordance with this expectation, we held a workshop where those involved with the project captured, via post-it notes and flipchart, what went well and what did not go well in the course of the project. We then sorted, grouped and evaluated these inputs using commonly accepted tools in an attempt to make sense of our experiences – including FMEA (failure mode effect and analysis), defined by the *Oxford Dictionary of Business* (2002: 206) as 'a technique for analysing how systems might fail and what

the consequences of that failure would be'. We then presented an executive summary of our findings back to the project steering committee as part of the project closure meeting, and stored the document in a repository on the company's computer system.

I recall at the time of undertaking this activity a sense of futility with the lessons learned exercise. A feeling of 'here we go again' on behalf of myself and the project team in so much as we were performing this familiar ritual rather than delivering something that could benefit future projects. It was not that the exercise was poorly executed: we were conscientiously following 'best practice' within the currently accepted practice of lessons learned, with clear outcomes and recommendations based on an objective assessment through accepted tools and practices. Our collective sense of futility was partly related to our shared experience of similar activities in other projects, which once done were never referred to again. There was also a shared feeling that the real lesson to be learned – that this project was merely a device used in the power play between two senior managers, was precisely the thing that could not be represented in the lessons learned activity.

Introduction to Project 4

This project is an exploration into the experience that I had then, and since, of the approach that we currently take to lessons learned resulting in too abstracted an account of what happened and the sense we made of it. In our attempt to be objective, we remove the context of what took place, and with it a crucial component of that sense-making. I would like to explore how issues of power, such as those I have described above, can remain in the lessons learned account to better help us understand and make sense of the actual activity we experience in gradually allowing the narrative to 'unfold from the diverse, complex and sometimes conflicting stories that people, documents, and other evidence tell them' (Flyvbjerg 2001: 86). In order to expand on these points further, I will first look in more detail at the current approaches to lessons learned.

Current approaches to lessons learned

PRINCE2®, the UK and European project management standard, defines a lessons learned log as 'a repository of any lessons learned during the project that can be

usefully applied to other projects' (PRINCE2, 2005). The Project Management Institute (PMI), which sets the American standard for project management simply states that lessons learned as 'the learning gained from the process of performing the project' (PMI 2004: 363). Other authors on project management share similar views on the lessons learned activity.

> The project manager has to present a report on what project management aspects of the project went well, and what went badly. The project board has the job of ensuring that this is passed to an appropriate body that will disseminate the report to other projects and possible modify the relevant standards. (Bentley 2005: 204)

> If you need to create a lessons learned process from scratch for your projects, be pragmatic and design something that is simple and will work, avoiding over-elaboration. The two main elements are a template for recording the information, and a process to ensure that the information is captured and, most importantly, used to improve your project's performance in the future. (Nokes & Kelly 2007: 116)

My current employer has their own bespoke lessons learned tool, managed by the knowledge and competence management team, Reuse, Improve and Share Excellence (RISE). The RISE tool is a database of lessons learned, designed (among other things) to 'avoid failures in the future, proactively prevent reinventions, enable an immediate understanding of root cause and problem solutions by providing recommendations' (Goxhay KM website).

Sandra Rowe, who in 2008 was a senior project manager for Blue Cross Blue Shield, a healthcare provider in Michigan, expands on this viewpoint further in a paper she presented in the 2008 PMI Global Congress Proceedings entitled 'Applying Lessons Learned' (Rowe 2008). In it, she outlines the two steps involved in capturing lessons learned and the three steps involved in applying lessons learned, describing the key tools and tasks that can help project managers successfully capture and apply lessons learned (Rowe 2008:). This short paper outlines a process of Identify–Document–Analyse–Store–Retrieve, which the author proposes as a 'comprehensive approach to ensure that lessons are applied' (Rowe 2008: 1). She

goes on to assert that ‘the more discipline and effort you place in capturing of lessons, the more prepared you are to apply the lessons learned’.

The sense I make of this is that lessons are learned by the simple, mechanistic application of formula and template and then made applicable to other projects by report and disciplined dissemination. In this sense, lessons learned are seen as context-independent, universal and objective in the tradition of epistemological knowledge. The understanding of experience and the knowledge gained from it has the quality of being a ‘thing’ that is fixed in time and space, having the quality of what Dreyfus and Dreyfus (1986: 21) describe as *knowing that*, involving ‘elements of the situation to be treated as relevant [that] are so clearly and objectively defined for the novice that they can be recognised without reference to the overall situation in which they occur’. This understanding of learning is squarely from within the dominant discourse of scientific management, with its recourse to the if–then causality of systems thinking and reliance on what Stacey (2007: 152) has termed technical rationality, ‘a method of deciding that involves setting clear objectives, gathering the facts, generating options, and choosing one that maximized or satisfies the objective’. Schon, in his work on reflexive practice, also supports this understanding of technical rationality at play in the dominant management discourse, stating that ‘professional activity consists in instrumental problem solving made rigorous by the application of scientific theory and technique’ (Schon 1983: 21). Rowe further supports this view, in a section of her paper entitled ‘Lessons Learned Overview’:

> We learn from our own project experiences as well as the experiences of others. Sharing lessons learned among project team members *prevents* an organisation from repeating the same mistakes and *allows* them to take advantage of organisational best practices. Learning should be deliberate. Organisations should be prepared to take advantage of the key learning opportunities that projects provide. (Rowe 2008: 1, emphasis added)

The problem with current approaches to lessons learned

If we are to understand organisations as first-order systems (where similar actors can be expected to behave in the same predictable way under given conditions), then I should imagine that Rowe and other contemporary authors on lessons learned within

project management are perfectly adequate in their position. All we need to do is find the things that are *preventing* an organisation from learning, fix it and *allow* the organisation to take advantage of the new way of working. This is a seemingly logical approach to take in accordance with the first-order systems thinking ethos of reductionism, which 'sees the parts as paramount and seeks to identify the parts, understand the parts and work up from an understanding of the parts to an understanding of the whole' (Jackson 2003: 3).

However, the actions of humans, the component parts of organisations, are not fixed as parts of a machine – cogs or gears that can be measured and assessed to the required degree and relied on to be in sufficiently the same state when we next come to measure or asses them – but are nebulous, temporal; both a consequence of and an input into their relationship with the other 'parts'. In his work on social constructionism, Shotter (1993: 174) makes the point that 'in many of our ordinary, everyday life activities, as we must interlace our actions with those of others, their actions will determine our conduct just as much as anything within ourselves'. The technical rationality of the current approaches to lessons learned takes insufficient account of the interlacing of our actions with others. They imply that there is a best practice to be found by application of the appropriate tool or process. They assume a causality that can be described as 'efficient cause', where the nature of movement is a 'corrective repetition of the past in order to realise an optimal future state' (Stacey 2011: 301). These approaches are firmly entrenched in first-order systems thinking, where the observer is separated from the observed. They assume 'an objective reality that is objectively observed by an individual. The assumption [being] that the social world is made up of systems having a purpose, which can be objectively observed and modelled' (Stacey 2011: 201). Even when these approaches attempt to take account of human interest, it is normally in some form of stakeholder analysis that attempts to capture the dynamic interlacing of our actions with others in a static, two-dimensional grid. The very act of attempting this capture inevitably changes the dynamic relationship between the various actors rendering the value of the measurement questionable. Even if such an unobtrusive measurement were possible and an accurate assessment made of the state of the

'system', it would only be accurate for that given instance; it would not be a reliable model at any other point in time.[14]

Current approaches to lessons learned are inadequate in their interpretation of experience as separate from the activity of experiencing. They do not adequately take account of the influence of power relations on those involved in the activity of capturing lessons learned, nor the paradoxical influence on those power relations that are forming and being formed by the action of undertaking a lessons learned activity.

The paradoxical need to change our experience in our attempts to understand our experience ('Sinn ist nur sinn als sinn'[15])

It is very easy, when writing critically about how systems interpretations are taken up in our attempts at understanding, to fall into dualisms and argue for one or the other side of a particular debate. This is not surprising, as traditionally research has been conceived as 'the creation of true, objective knowledge following a scientific method' (Alvesson & Skoldberg 2009: 1). This understanding of true objective knowledge is taken up in most orthodox management literature, where 'everything can be considered as a "problem" which requires a solution' (Mowles 2011: 263). Alvesson and Willmott, leading authors in the field of critical management studies, elaborate that 'management is a set of techniques and disciplines that promises to address problems that are defined as soluble by the technical solutions that it provides' (Alvesson & Willmott 2012: 3).

The sense I make of this is that when attempting to understand and make sense of whatever it is that we are engaged in (particularly in professional life), we have a tendency to 'look for answers'; to find the 'root cause'; to 'frame the world as a set of problems amenable to fixing' (Bavington 2010: 116). Bavington (Associate Professor at the Memorial University of Newfoundland, writing about the

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[14] This understanding of organisations as complex responsive processes is applicable to any organisation that participates in processes of communicative interaction, power relating and the creation of knowledge and meaning.

[15] 'Sense is only sense in the act of sense-making' – insight shared by Prof Doug Griffin during a plenary session of the complexity research group, University of Hertfordshire, October 2010.

unintended consequence of the application of management practices to the husbandry of fish stocks) went on to state that this outlook 'helps sustain the illusion that solutions to all problems are to be found in a more determined application of rationally organised expertise encapsulated in management theory and practice' (ibid: 116).

As I said at the start of this section, it is very easy to fall into dualisms and argue for one or the other side of a particular debate. The examples above attempt an explanation of why this may be; how the habitus of modern professional life that I spoke about in Project 3,[16] the 'structured structures that are predisposed to function as structuring structures' (Bourdieu 1977: 72), creates a predisposition to look for answers, and that predisposition in turn conditions the requirement for an answer.

I should stress that I am not arguing for opposition to the current approaches to lessons learned. I do not say that we should not be searching for answers; we have to if we want to take part in the habitus of management. Neither do I suggest that current approaches to lessons learned activities – where the need to learn a lesson presupposes that there is a lesson to be learned, and this in turn necessarily conditions the likely outcome – is wrong, for I do not see how it can be anything other than that. What I do challenge is the effectiveness of current approaches that assume that we can objectively stand outside of our own experience; that the lesson learned is somehow independent of the part we played in it. I propose taking a complex responsive process view of lessons learned in project management, in the belief that 'focusing attention directly on patterns of human relating, and asking what kind of power relations, ideology and communication they reflect' (Stacey 2007: 266) will help give meaning to the abstracted analysis and technical rationality of the current approaches. We need to recognise that in our attempts to make sense of our experience, we necessarily have to abstract our experience; and this process of making sense paradoxically changes the sense that we make. Without reference to

[16] In Project 3, I described how engineers and managers entering the modern manufacturing organisations are trained in scientific management tools and techniques, in order to be able to work with the scientific management tools and techniques prevalent in modern manufacturing organisations.

the context within which the sense that was made of the lessons learned took place, we cannot make the most useful sense of the lessons that were learned.

Abstractions

According to the *Oxford English Dictionary* (1982: 5), to abstract means to 'deduct, remove, disengage'. Stacey, in his discussion on patterns of interacting emerging across organisations, states that 'All forms of thinking about and reflecting on experience necessarily involve abstracting and drawing away from that experience' (Stacey 2011: 414). It is only through this act of abstraction that we can reflect on, and make sense of, our experience.

Stacey contrasts abstracting to immersing meaning 'to be absorbed in some interest or situation where on devotes oneself fully to some interest or situation' (Stacey 2011: 413). The sense that I make of this is if we were to remain immersed in each instance of our existence, then we could only ever experience that instance. To attempt to relate that entire instance as fully as we experienced it to any other person – to describe exactly everything that was going on – would consume at least the same amount of space and time as the instance we were attempting to describe. In order to reflect on and make sense of our experience we necessarily have to abstract and simplify.

First-and second-order abstractions

Stacey makes a distinction between first- and second-order abstractions. First-order abstractions, 'the generalising through the identification of categories of experience articulated in narrative and philosophical arguments' (Stacey 2011: 418), are what we do in our ordinary everyday local interaction with each other. As part of that immersed local interaction, we are simultaneously abstracting from that experience by simplifying, generalising and categorising. This complicated-sounding activity can be explained with the example of a table. If we were to explain to someone an act that involved a table, it would probably be sufficient to describe the table as *a* table and not *this* table or *that* table but instead to think in terms of a general, and therefore abstract, category of tables. This is a first-order abstraction; it is necessarily removed from direct experience in order to make sense of what is going on. Second-

order abstraction is a further abstraction on the first order, and therefore operates at yet another level of remove from direct experience:

> Second-order abstracting activity seeks to simplify, standardise and measure, so reducing elaboration, multiple interpretations and mystery. The consequent clarity and uniformity makes it much easier to exert some control on the activities of others from a distance. (Stacey 2011: 418)

Second-order abstracting – such as the rules, templates, best practices, processes, procedures, models and maps of modern professional life – necessarily constitutes management activities such as lessons learned. However, the current emphasis on producing something that can be captured at a distance that can be faithfully recreated in the opposite direction, and transposed into other projects at other times, is creating an over-reliance on this second order abstraction (models and maps). This over-reliance is at the cost of first-order abstraction; it does not sufficiently recognise that in our attempt at understanding, we necessarily change what it was we had an interest in.

In the case of the re-planning of the components to Grosvenor, this over-reliance on second-order abstraction led to the lessons learned focusing only on whatever could usefully be captured in models and maps. As these models and maps are deterministic in nature, predicated on if–then efficient causality, they were insensitive to experience that was paradoxical, that had no solution. Mowles suggests that 'there are many areas of human experience that are paradoxical. True paradoxes have no solution, like non-linear equations, but can only be iterated and investigated and perhaps made more comfortable through investigation' (Mowles 2011: 263). My own experiences of the power relations between Gordon and Pete were paradoxical in the sense that there was no solution other than the playing-out of the power relation, necessitated by the power relation between the two. This complexity could not be assessed through the static medium of spreadsheet, flowchart, fishbone or 2×2 matrixes. The necessary attempt to 'fix' and agree the experience of the power dynamics at play in order to capture as a static representation requires the collapsing of the paradox, which in turn changes the nature of the experience, shifting influence of the power relations on the individuals involved.

If we could not agree on the lesson that was learned, then in the tradition of technical rationality we had failed in gathering the facts, generating options, and choosing one that maximised or satisfied the objective. Anything that could not be captured via post-it note and flipchart, then sorted, grouped and evaluated using commonly accepted tools did not satisfy the expectations of 'lesson learned' activity. If we could not see how it could be usefully applied to other projects, it could not qualify as a lesson learned; so we focused on what we had learned about the differences between the two machining centres – such as how to manage quality approvals from Grosvenor to Parkstown, and what level of spare tooling to keep. These were measurable using the tools we had, but were not necessarily the lessons to learn.

Looking back on this experience, it seems inevitable that the lessons learned activity should have focused on the things that we could measure – relatively trivial and predictable things that required no sophisticated [methodology] to tell us about them (Thomas 2010:25). Other lessons we might have learned from this experience, concerning the impact of the power relations between the two senior managers on the decision to re-plan the manufacture of the components, were illegible to the measuring devices used and therefore remained hidden.

Power

In Project 2, I wrote about the importance of power relations in deciding what is viewed as right and wrong, true and untrue in organisational settings. I gave an example of how something that had been seen as the right thing to do at a given point in time, with regard to organisational change, was abruptly reversed with the introduction of a previously silent stakeholder to the change process. In the above discussion on current approaches to lessons learned, knowledge is seen as the truth – permanent and unquestionable, capable of capture and analysis; as Foucault put it, 'the ensemble of truths to be discovered and accepted' (Foucault 1994: 132). Foucault argued that this understanding of truth was not appropriate in social environment; rather, truth should be understood as 'the ensemble of rules according to which the true and the false are separated and specific effects of power attached to the true' (ibid: 132). In this representation of truth, truth is not absolute, unchanging, but subject to constant economic and political enticement. What is true is true only

because of its ‘circular relationship with systems of power that produce and sustain it’ (ibid: 132).

If lessons are to be learned, then we need to take into account the systems of power that produce and sustain the ensemble of rules according to which ‘true’ and ‘false’ are separated, as any changes in the systems of power will change the sense we make of the lessons learned. Knowledge exists in the particular power relations in play at the point of time it is generated. The ensemble of rules to which the true and the false are separated are, as Foucault stated, products of the power relations that produce them. Treating the knowledge from lessons learned as ‘clearly and objectively defined facts and features that can be recognised without reference to the overall situation in which they occur’ (Dreyfus & Dreyfus 1986: 21) ignores this important aspect of understanding. Without reference to the context within which the sense that was made of the lessons learned took place, we cannot hope to make any rational sense of the lessons that were learned; for, as Flyvbjerg elaborates, ‘rationality is context-dependent; the context of rationality is power’ (Flyvbjerg 1998: 97).

Thick simplifications: A reflective narrative approach to lessons learned

In *Seeing like a State* (1998), Scott explores why large-scale schemes to improve the human condition in the twentieth century have so often gone awry, and argues that any centrally managed social plan must recognise the importance of local customs and practical knowledge if it hopes to succeed. He refers to schemes that lack this recognition as ‘thin formulaic simplifications’. In Project 2, I drew attention to how these thin formulaic simplifications can lead to apparently irrational behaviour on the part of senior management, through oversimplification of complex organisational problems. Scott also goes on to explain what I see as the paradoxical nature of these ‘thin formulaic simplifications’, since it is their very thinness that makes them of interest to us, while also limiting their value. He explains that the cadastral maps of eighteenth-century Europe were of interest to the state because of their abstraction and universality; indeed, ‘the completeness of the cadastral map depends, in a curious way, on its abstract sketchiness, its lack of detail – its thinness’ (Scott 1998: 44). It was only through this thinness that the state was able to make sense of land taxation.

Examples such as cadastral maps are second-order abstractions, designed to make the local situation legible to the outsider. However, they are 'very much like a still photograph of the current in a river', being 'far more static and schematic than the actual social phenomena they presume to typify' (Scott 1998: 46). In the case of lessons learned, while we need to abstract and simplify in order to make sense of our experience to ourselves and others, the very nature of the movement explicit in the act of learning requires us to do more than just photograph the current in the river. At the same time as providing the abstracted sense-making that is legible to the outsider, we must also engage in what Geertz referred to as 'the elaborate venture in thick description' (Geertz 2000: 6).

What I propose is a *thick simplification* – a reflexive narrative approach to lessons learned, leaving the first-order (narrative) abstractions in the account. This approach allows us to represent the understanding that the particular gives us, while at the same time making sense of the population-wide patterns that emerge from the particular phenomena to better help us understand and make sense of the actual activity we experience. Like others, I will take up Flyvbjerg's call to arms in *Making Social Science Matter* (2001) for a richer and more reflective analysis of values and power. I will examine how the Aristotelian value of phronesis, 'practical common sense',[17] and in particular how phronetic research, the goal of which is to 'produce input to the ongoing social dialogue and praxis in society, rather than to generate ultimate, unequivocally verified knowledge' (Flyvbjerg 2001: 139), can help us by allowing the paradoxical nature of human experience to remain in the account.

Researching into lessons learned: A thick simplification

In researching this topic, I spoke with a number of colleagues within the engineering departments at Goxhay about their experiences of lessons learned and how they went about solving real-world problems that had defied classification and definition through the normal evaluative procedures. One such occasion was a meeting with a young engineer, Etienne Claro, from the future projects office. The following is a

[17] See p. 150 of the Penguin 2004 edition of *The Nicomanachean Ethics.*

first-order abstraction narrative account of what took place and the lessons that I learned.

Etienne

Knowing of my interest in complexity, a Goxhay colleague (who is also exploring alternative approaches to organising our activities, other than the traditional 'command and control' of the dominant management discourse) suggested that I meet up with Etienne, who apparently had just completed a PhD that also had 'something to do with complexity' in the title.

Even though I did not expect Etienne and myself to be researching the same topic in the same field, I was delighted to invest time in meeting him. My experience of doing research into complex responsive processes of relating suggested that anyone with an interest in the word 'complexity' was, knowingly or unknowingly, inquiring into other ways of understanding experience than those we would usually adopt when describing our experience in commercial organisations. It was their individual experience of this inquiry, rather than the specifics of how they understood complexity, that I always found the most interesting and enlightening part of these conversations. Etienne was no exception to this to this rule, his PhD having been in mathematical modelling of the emergent properties of non-linear system dynamics in aircraft landing gear systems – somewhat different from my own research into complex responsive processes of relating. Despite our different focus, I found Etienne's description of his work interesting. My point of departure into complex responsive processes was complex adaptive systems, and I found that my rudimentary understanding of genetic algorithms and non-linear equations almost equipped me to keep up with Etienne's enthusiastic explanations.

During our conversation, I had the chance to explain where my interest lay with understanding complexity. After an initial response of 'best of luck, we [students of non-linear computational dynamics] don't go anywhere near that messy stuff', Etienne suggested that I talk to a gentleman who had many years' experience as a field engineer: a gentleman by the name of Bob Thomas, who shared with me his experiences with 'booming' landing gear.

Bob

I arranged to meet Bob in a conference room close to his office, and sent him an email outlining what I would like to talk to him about and why. I explained that I was conducting research as part of a doctorate in management, and included the 'Summary of Progress to be Made' (submitted as part of my research application) to outline the background, objectives and current status of my studies.

We met at the appointed time and made our way to the conference room. As this was the first time we had met, there was a certain amount of general conversation to establish a little more about each other. It became apparent that Bob, like myself, was a frustrated musician and an avid guitar enthusiast; and after a little too long spent swapping tales of guitars, gigs and failed musical ambition, we managed to bring ourselves to discuss the matter in hand: Bob's experience of fixing a long-standing issue on one of our products, and how he may have incorporated and subsequently contributed to lessons learned in other people's experience.

I started by asking whether Bob had had chance to read the material I sent him in the email. He replied that he had and we had a short discussion regarding the content of the mail and some of the concepts that he was unfamiliar with. We then turned to Bob's experience of the problem he had been involved with resolving.

B960 booming landing gear

Bob had been called to investigate a problem of booming noise on the landing gear on a B960 aircraft. Previous analysis of flight test data from the aeroplane's telemetry systems had revealed nothing to indicate what was causing this phenomenon. The problem was particularly hard to diagnose and remedy because it only occurred intermittently. Strapped into his seat on the test aeroplane, Bob was presented with a bewildering array of instruments and read-outs that monitored and recorded every conceivable aspect of the aircraft systems during the flight. After many repeated take-off and landing cycles, the boom was identified to be associated with a cross-wind landing, causing unforeseen loading to be put through the nose landing gear. As I appreciated once Bob had explained a little more about how aircraft systems work, his diagnosis and solution of this problem was both innovative and intuitive.

Fly by wire

Bob explained that modern commercial aircraft are what is known as 'fly by wire' – a term describing how the control surfaces and systems on modern aircraft are actuated by electronic signals from the avionics computers, which are carried along wires to the solenoids and other hydraulic/electromechanical devices that move the aircraft control surfaces. In older aircraft, this had been done via cables routed via a series of conduits and bell cranks; each input or command from the pilot translated to a proportionate action on the part of the aircraft. For example, as the pilot pulled a lever to deploy the landing gear, the cable on end of the lever directly engaged with the control mechanism on the landing gear to start the sequence of deployment. On a modern 'fly by wire' aircraft, actuation of the deploy landing gear lever sends a signal to the avionics computers to start a pre-programmed series of events that will result in the deployment of the landing gear.

As the pilot makes his final approach to land, he throws the lever to deploy the landing gear. This then lowers both the main landing gear (the 10 or 12 wheels on the four landing gear in the centre of the aircraft) and the two wheels on the nose landing gear at the front of the aircraft. After deployment, the main landing gear does little other than hang there in the breeze, waiting for the ground to meet it at a vertical speed of around 2 m/s when it will absorb the vertical inertia of the aircraft and passengers. The nose landing gear – rather than being fixed along the axis of the aeroplane, like the main landing gear – is steerable, allowing the pilot to manoeuvre the aeroplane on the ground for taxiing during take-off and landing. Power to the steering mechanism on the nose wheel is disengaged prior to landing in order to allow the nose wheel to find its own centre when it hits the ground, before powering the steering system up to return control to the pilot who can then steer the plane on the ground. Bob had identified that the boom from the landing gear that was causing concern for the pilots was caused by the powering up of the nose wheel steering mechanism when the aeroplane was landing in a cross-wind.

Cross-wind landings

Pilots generally try to land aeroplanes into the direction of the wind, to minimise the ground speed of the aeroplane upon landing. Unfortunately, the wind cannot always be relied on to be blowing in the same direction as the runway; sometimes the pilot

must execute a cross-wind landing, positioning the aeroplane at an angle to compensate for the wind that is blowing it off the runway. This is a perfectly normal aspect of aircraft operations. Part of the certification process of any new aircraft is to demonstrate that the aircraft can land safely in extreme cross-winds. These tests, and real-life cross-wind landings, can be spectacular affairs as the aircraft wrenches and shudders amid screams of protest from the tyres as the physics of flying at an angle of 30 degrees to the centreline of the runway attempts to reconcile with the physics of over 200 tons of aircraft, passengers, crew and luggage now being required to point in the same direction as the runway, to avoid running off it onto the surrounding soft verge.

While the simulated cross-wind landings that Bob and the flight crew were performing were not of this order of magnitude, they were sufficient to induce stress in the components of the nose landing gear as a result of the steering mechanism fighting against the direction the aeroplane was travelling in as it was powered up to give the steering control to the pilot. This stress, and subsequent reaction by the steering mechanism, was producing the boom that the pilots were experiencing.

The sense that we make of our experiences

The above is my interpretation of Bob's account of his experience finding the cause of the boom in the landing gear. Though I am not an aircraft engineer and have little experience with landing gear (I am certainly not an expert like Bob), I was able to understand his experience as he explained it to me through the discussion that we were having. Throughout our conversation Bob used different ways of explaining his experience – some technical, some anecdotal, some metaphorical; but all of them through a discursive approach, where understanding came from the interaction between us. I was as much a part of this particular explanation that Bob gave as to how he identified the problem with the landing gear as Bob or the flight crew were on the day of the test flights. My understanding, good or bad, of Bob's account shaped the sense that we made of what was happening, as has every conversation that Bob has had with anybody else about this topic. Rather than Bob's experience of the booming landing gear being a fixed event that happened at some given point in time, in the future, when Bob is recounting this experience to someone else, the sense that we made of his experiences that day will influence his future account.

Each interchange might reinforce a previously held belief, or even change the sense that Bob made of his experiences that day; but in subtle or dramatic ways, it will change Bob's perception of what happened with the booming landing gear of the B960.

The new sense that Bob and I made of our experience

> Time is circular in the sense that the emerging future is constructed, as is the understanding of the past, in the self-organising process of interaction in the living present. (Griffin 2002: 15)

Talking with Bob about how he found the cause of the boom in the landing gear, I found myself wondering how he had located the problem, which had long defied analysis through review of sophisticated data by expert engineers. Had Bob just got lucky, backed a hunch? Had he experienced something similar elsewhere? Bobs' initial response to this enquiry was 'No one's ever asked me that before', then after a few moments of thought proceeded with the following explanation.

> Thinking about it, I recall being on a flight a few weeks before this test flight took place and experiencing a bumpy ride while coming in to land. I was sat at the back of a single-aisle aircraft – I can't remember whether it was a B550 or B551, but I recall being bounced from side to side as the pilot made his final approach to landing. I was wondering why this was happening; and what I realised was that the B550 aircraft family I was on was a fly-by-wire aircraft, and as such the control surfaces on the aircraft were under the direct control of the avionics computers. I also realised that as we were landing, the aircraft's descent and approach was probably being managed by the ILS system – that's the instrument landing system that most modern commercial airports use, whereby a beacon at the end of the runway transmits a radio signal to the approaching aeroplane that guides it into its landing. The pilot in ILS landings is there just to check that everything is going OK, the actual landing of the aeroplane being controlled by the avionics computers and the ILS signal. What I was experiencing, being bounced about at the back of the aeroplane, was the rudder, under the control of the aircrafts flight computers, making corrections to bring the plane back on the track of the ILS. If this had been a non–fly-by-wire aircraft, or not flying under the guidance of ILS, the pilot would have been in

> control of the descent and approach of the aircraft and may not have felt the need to respond to each and every deviation from the approach path, aware that as one gust of wind blew the aircraft to the left, the next may bring it back on track. The digital combination of the ILS and the avionics computers was responding to each deviation from course with a subsequent input into the rudder to correct the course, and this was resulting in the being bounced from left to right that I was experiencing at the back of the plane.

Bob was not sure how he made the connection between that experience and the booming of the aircraft landing gear. But something suggested to him that the cause of this booming, like the cause of his being bounced around at the back of the aeroplane, could be due to the function of the digital controls of the aircraft conflicting with what was happening in the distinctly non-digital world of the aircraft's operation.

Bob's ingenious fix for the problem of the booming landing gear was to delay the engagement of the power to the nose landing gear by a few seconds to allow the nose landing gear, and the rest of the aircraft, to find a settled position on the runway before engaging the power to the nose landing gear. How he achieved this elaborates another aspect of knowledge and understanding that challenges the if–then causality of the context-independent view of knowledge espoused in current approaches to lessons learned – that of human intuition and expertise.

Mind over machine: Knowing how over knowing that

In *Mind over Machine* (1986), Dreyfus and Dreyfus developed what Flyvbjerg refers to as 'the phenomenology of human learning' (Flyvbjerg 2001: 9). They identify five levels in the human learning process, describing these to as the five steps of skill acquisition from novice through to expert:

- Novice
- Advanced beginner
- Competent performer
- Proficient performer
- Expert

This model, developed as an explanation as to why artificial intelligence (AI), based on the 'unquestioned assumption that logical inference produces intelligence, has inherited erroneous views from the philosophical tradition' (Dreyfus & Dreyfus 1986: xiii), has relevance for my argument of the context-dependent nature of knowing in ordinary everyday life experience. As the authors explain:

> In general, all formal models of decision-making ask the expert questions which place him in a detached objective position and so fail to tap his intuitive expertise. They suffer, just as does conventional AI and expert systems engineering, from the impossibility of replacing involved *knowing how* with detached *knowing that.* The same problem reappears in attempts to automate factories and offices. (Dreyfus & Dreyfus 1986: 184, emphasis added)

It is the involved *knowing how*, as opposed to the detached *knowing that*, that experts such as Bob use when solving complex problems that defy rules-based analysis. Dreyfus and Dreyfus argue that *knowing that* is rule-guided and scarcely used beyond the stage of Novice. *Knowing that* involves clearly and objectively defined facts and features that can be recognised without reference to the overall situation in which they occur (Dreyfus & Dreyfus 1986: 21). These clearly defined facts and features they refer to as 'context-free' components, which are only applicable in the Novice stage of skill acquisition. In stages 2–5 of their taxonomy, these components are described as 'context-free and situational' (ibid: 50). At first glance, this seemingly contradictory description of something being context-free and situational attempts to distinguish between the context-independent, rules-based *knowing that* and the context-dependent *knowing how* of 'practical experience in concrete situations with meaningful elements, which neither the instructor nor learner can define in term of objectively recognisable context free features' (ibid: 22).

It is this *knowing how* that we need to be paying attention to if we wish to understand and genuinely learn from our experiences. Attempts to find solutions to problems solely through an appeal to rules and logic, typical of current approaches to lessons learned, risk taking insufficient account of human intuition and expertise typified in Dreyfus and Dreyfus' proficient and expert levels of skill acquisition.

Bob's knowing how

It was Bob's use of his intuition and expertise in the interchange of activity with the aircraft crew of the aeroplane experiencing the boom that led him to not only to identify but also to fix, the problem. Having identified the cause as the constraints placed on the nose landing gear by the powering-up of the steering system, Bob needed to delay the powering-up by a few seconds, allowing the aircraft and landing gear to settle first. Bob knew that the signal that told the aeroplane it had landed, and subsequently powered up the nose landing gear, is the 'weight on main gear' signal. When the aeroplane lands, the weight of the craft is transmitted through the landing gear and a sensor in the main (centre) landing gear signals the aircraft's control system to instigate the controls needed for manoeuvring the aircraft on the ground, including power-up of the nose landing gear. Bob also knew that the aeroplane does not land all at the same time; rather, the main (centre) undercarriage touches down some seconds before the nose landing gear.

This is not in itself particularly valuable or specialist knowledge. Anyone who has stood on an aircraft apron waiting to board their plane and witnessed a commercial airliner landing, ejecting plumes of blue smoke from the previously stationary tyres now hurtling down the runway while the nose of the aircraft still points elegantly skyward, nose wheel still in the air, will be aware of this fact. It is what Bob did with this information that makes it valuable. By switching the signal to power up the nose landing gear from 'weight on main landing gear' to 'weight on nose landing gear', Bob effectively delayed the power up of the nose landing gear. The latency in the aircrafts mechanical and hydraulic systems then give enough time for the aircraft to settle prior to the nose landing gear powering up and handing control to the pilots, thus removing the troublesome boom.

Lessons learned from Bob's experience

It is clear from this account that Bob did not resolve the landing gear boom solely by referring to the content of previous lessons learned activities on landing gear issues. They could not have taken into account Bob's experience of the bumpy ride at the back of his previous flight that led him to identify and resolve this issue. In our interview, Bob recalled that he had consulted previous lessons learned activities carried out on this and other undercarriage-related issues, but to have relied solely on

these accounts would not have resulted in a fix to the problem. A narrow focus on the simplistic, rules-based abstractions of current approaches to lessons learned activities would probably have hindered through focussing Bob's thoughts elsewhere than his past experience on the bumpy flight, limiting his expertise to at best the calculative rationality of the third-level Competent Performer in Dreyfus & Dreyfus taxonomy. Fortunately, on this occasion, Bob was able to draw on a mature and practised understanding, recognising the problem through 'holistic discrimination and association' (Dreyfus & Dreyfus 1986: 28) – the ability to intuitively respond to patterns without decomposing them into component features.

The paradox of knowing that knowing how is knowing that

It is important to note that in human learning, there is no real distinction to be made between *knowing that* and *knowing how*. When we engage in activity, we do not consciously consider whether we are performing as a novice or expert. Nor do we switch from one mode of operation for simple tasks to another for complex tasks. I do not feel that this is what Dreyfus and Dreyfus were implying with their taxonomy; as discussed earlier, it is necessary to abstract from our experience in order to make sense of it. Dreyfus and Dreyfus make it clear that their model can help to explain an observed human behaviour, rather than being a model of human behaviour; 'Our five-stage model skill model, we hope, has helped you recall what *it is like* to be an expert (Dreyfus & Dreyfus 1986: 52, emphasis added).

The inclusion of *what it is like* is key, for it encompasses the paradox of explanation – that in attempting to explain an observed phenomenon, we necessarily have to change it in order to make sense of it. The five-stage model is not how humans learn, but an account of how we may make sense of what is happening to us when we learn. Earlier in their book, Dreyfus and Dreyfus contend that the view of the AI community, that skills and expertise are equivalent to 'rules of thumb', 'do fundamental violence to the real nature of human intelligence'; and that 'to safeguard both, we shall propose a non-mechanistic model of human skill' (ibid: xviii). But this is precisely what they have had to do in order to make sense of their experience. As discussed earlier, we necessarily have to abstract in order to make sense to ourselves and others of what it is we are experiencing. In doing this, the context-dependent *knowing how* necessarily becomes the context-independent

knowing that. It is only when we make the generalised, abstracted experience of other situations particular to own current situation that *knowing that* becomes *knowing how.*

If Bob were to 'capture' his experience of fixing the landing gear boom in the current approaches to lessons learned, which seek to abstract 'golden rules' and 'top 3 lessons learned', and attempt to isolate the concept of experience from the activity of experiencing, it would lose the value of the very thing of interest. To attempt to describe Bob's experience of fixing the landing gear boom solely in bullet points or a flowchart would be to miss the point of how he fixed the problem in the first place by allowing the answer to 'unfold from the diverse, complex and sometimes conflicting stories that people, documents, and other evidence tell them'(Flyvbjerg 2001: 86). Bob found his own way through the problem, based on his personal experience and understanding of the sense he was making now of the problem. In this sense, he was using what Schon describes as reflection in action, where 'each move is a local experiment which contributes to the global experiment of reframing the problem' (Schon 1983: 94).

Thick simplifications: A different approach to lessons learned?

In the narrative about the fixing of the landing gear, I have attempted a rich and reflective analysis of the values and power taking place. It would not have been sufficient for my account of my interview with Bob to focus purely on my own interpretation of the outcome of our discussion: that Bob fixed the landing gear problem by referring to his experience of a previous flight he had taken. It is only by contextualising how this understanding came about – as part of a discussion with someone I had just met, who happened to share a common interest in guitars and was curious as to what my research was about, following an introduction from a colleague of Bob's whom I had met somewhat serendipitously – that the reader can make a judgement as to how useful the knowledge presented is. It is only through this contextualising that the reader can either agree or disagree with me that the important lesson to be learned from Bob's experience is that it is this ongoing social dialogue that is of interest and can contribute to future activity, rather than unequivocally, verified knowledge. Without the context, we are forced to accept the author's viewpoint, which may be of limited use in our present situation. Without the

context of how Bob and I met, and the power relations that might be at play – subtle power relations, such as our common interest in guitars and the invitation to take part in research for a doctoral thesis; as well as overtly hierarchical power relations, as in the case of Gordon and Pete – we are unable to make our own sense of this experience, and how it both informs and is informed by our other experiences.

Another interviewer, approaching an understanding of Bob's experience from a different perspective, may have concluded that the key lesson to be learnt is that booming noise on landing can be resolved by delaying the powering-up of the nose landing gear. This conclusion could be as valid as any that I could make, provided the reader has been given an opportunity to make their own sense of it by placing the knowledge in the context of the situation in which it originated.

To deny the reader this opportunity to place the context of the knowledge in the situation it originated is to 'retain the unimpaired theory that knowing signifies a process of identification' (Dewey 2008: 148). Dewey, one of the father figures of American pragmatism, wrote extensively about the nature of knowing, captured in his later work *The Quest for Certainty* in which he argues that the progress of knowledge in the affairs of social and moral matters 'depends upon methods of observation and of the consequences which test them' (Dewey 2008: 149). The methods of observation relate to the activities undertaken to understand an observed phenomenon. In the example of my encounter with Bob, this method included the interview, the room we were in, the relationship between Bob and myself, the introduction through Etienne, and all other aspects of our interaction. Not to include these factors in an account of the understanding that resulted is to consider knowledge as a process of identification, separate from the act of knowing itself. Dewey proposes that knowledge is not separate from the act of knowing: 'the object of knowledge is eventual; that is, it is an outcome of directed experimental operations' (ibid: 136). He goes on to say that this does not imply that previous knowledge is not of immense importance in obtaining new knowledge, but that the conclusions of prior knowledge are the instruments of new inquiries and supply working hypotheses for new situations.

It is this argument that I would like to take up in the understanding of lessons learned activities. To be useful, knowledge from lessons learned must be presented as an instrument into a new situation, not merely an elaboration of a previous

situation. To enable the effective and appropriate use of this instrument, the conditions of its original creation need to be known, those conditions being related through reflexive narrative.

Reflexive narrative in practice

Schon refers to reflection-in-action, where 'each move is a local experiment which contributes to the global experiment of reframing the problem' (Schon 1983: 94). Once we move away from the model of organisational life enshrined in *if–then* causality, as espoused in the countless tomes on scientific management, we begin to understand the behaviour of the organisations we work for as an emergent property of the 'many single plans and actions of men [that] can give rise to changes and patterns that no individual person has planned or created' (Elias [1939] 2000: 366). We can then begin to understand that all knowledge about what goes on around us exists purely in the social; as such, it is both a function of, and simultaneously conditioning, the power relations that we find ourselves negotiating in our ordinary everyday lived experience. Thus, all we can ever do in any social aspect is infer the best explanation of what is going on; in turn, that that inference will somehow change the nature of what is going on. This does not, however, leave us lost in an unpredictable mess of organisational malaise that changes and shifts from one moment to the next in unpredictable, chaotic waves; clearly, no commercial organisations would be viable without any structure at all. Rather, organisations exist not in a structure by design, but in structures in the interplay of designs.

If organisations are not the product of a design from one particular viewpoint (as the dominant management discourse of cybernetic systems thinking would have it), then it will be very difficult to 'fix' a problem with a redesign from another particular viewpoint, as propounded in the dominant literature on lessons learned. What is required here is an engagement in argument around difference and a sense of compulsion to justify the perspective we take in our difference from other perspectives. Rather than lessons learned attempting to be a 'repository of any lessons learned during the project that can be usefully applied to other projects' (the PRINCE2® definition), or a process for the capturing of lessons learned to prevent organisations from making the same mistakes again, we should be taking what

Miller and Fredericks (1999) describe as Peirce's abductive approach of 'inference to the best explanation'.

We should use narrative to contextualise the explanation of what happened and justify the perspective taken in relation to other perspectives, thus allowing some account to be made of the power relations in play – not through any explicit statement of power relations from the author's perspective, but through a narrative explanation of the context sensitivity that 'enables readers to make sense of the narrative of the case, agree or disagree with the researcher' (Thomas 2010: 580). In this way we are using first-order abstractions of the experience we are recounting – leaving the individual in, in recognition of the intersubjective nature of understanding; as opposed to removing the individual in an attempt to be purely objective, as is the convention when describing observed phenomena in the natural sciences.

A pause for reflection on reflection

Yanow and Tsoukas (2009) challenge what they and other authors see as a cognitivist orientation in Schon's writings, particularly on the distinction he makes between reflecting in action and reflecting on action. They use Schon's example of reflecting on action in the construction of a gate as a way of 'sitting back and thinking through a problem – *after* the fact, chronologically – than the reflection *in the midst of action* that he seeks to theorise' (Yanow & Tsoukas 2009: 1343, emphasis in original). This, they claim, is a 'rather calm thinking through of what happened and what needs to be done, not while he is in the midst of action but, rather, removed in time (though not in space) from that action' (ibid: 1343). In this and other examples, they claim that Schon frames his approach to reflection as rethinking knowing in action as essentially a cognitive problem. This, they further claim, led Schon to ignore the 'embeddedness of mind in social practices' (ibid: 1343).

Considering Schon's work and the nature of reflexivity from the perspective of complex responsive processes, where understanding and knowing are based entirely in the social, I would question how reflective practice can ever be considered anything other than wholly embedded in social practice. If we are to consider, as Mead postulated, that 'our whole experiential world – nature as we

experience it – is basically related to the social process of behaviour', then 'the content of the objective world, as we experience it, is in large measure constituted through the relations of the social process to it' (Mead 1934: 112). In this sense, all thinking can be seen to be done *in action*, with *action* being the sense we make of phenomena in the triadic relation of meaning within gesture, response, and social act.

> Reflexivity is not simply an individual activity dependent on that individual person's history alone. This is because we are all members of a community that has a history and traditions of thought. Reflexivity, therefore, involves being aware of the impact on how one thinks of both one's personal history and the history and traditions of thought of one's community. (Stacey 2007: 11)

Even Schon's own distinction of reflecting on action is a form of reflecting in action, the distinction between the two being one of temporality (the decision about whether or not the actor is or is not in the midst of action being itself subjected to reflection), as well as the individual's depth of inquiry into their own reflective thinking. Douglas Griffin elaborated on this point in a personal note to a fellow DMan student, exploring the nature of reflexivity:

> First-order reflexivity is embedded in the nature of thinking, but we can take first-order reflexivity lightly or we can struggle to intensify it, i.e. to take our experience (e.g. a narrative which we have just presented) more seriously. First-order reflexivity moves more deeply into the matter. Second-order reflexivity is what we commonly refer to as reflection. It is a stepping back, e.g. in order to consider the coherency of our argument or strengthen it. The two are of course bound in a paradox, as are theory and practice or involvement and detachment.

Both first- and second-order reflexivity as described above are undertaken in the social as both one's personal history and the history and traditions of thought of one's community are taking into account in the nature of thought. The difference that Griffin makes between the two is that first order reflexivity is a *going* more deeply into the material, taking it more seriously and noticing the shifts in our thinking which will always be both predictable and unpredictable.

Geertz, the cultural anthropologist and former professor of social science at the Institute for Advanced Study, Princeton, states: 'The human brain is thoroughly

dependent on cultural resources for its very operation; and those resources are, consequently, not adjuncts to, but constituents of, mental activity' (Geertz 2000: 76). It is only through the discursive act of conversation that we make sense of the observed phenomenon. Understanding is not something that is universal, static, fixed; it is in the sense that we make of things happening around us that understanding arises. Mead referred to this as the logical structure of meaning, which is to be found 'in the threefold relationship of gesture to adjustive response and the resultant of the given social act' (Mead 1934: 80). We can only know the meaning of what we are saying in the response of the other to what we are saying.

In *How we Think*, Dewey writes that 'reflective thinking, in short, means judgment suspended during further inquiry' (2007: 10). It is this suspension of judgement during further inquiry that distinguishes first-order reflective thought from the second-order reflection that Griffin described in his note. Although – unlike Yanow and Tsoukas – I argue that both are thoroughly embedded in the social, it is the first-order reflexivity, with its suspension of judgement, that is required in the quest to better understand what goes on as we go about our ordinary everyday activities with other people in that organisations that we work in. Failing to suspend our judgement in this way, preferring to rely on the readymade logic of process flowcharts, predefined best practice and golden rules, is to miss out on more subtle learnings that arise through difficulties that present themselves as an experience unfolds. Writing on the training of thought in school conditions, Dewey suggests that such difficulties should be 'cherished by the educator, not minimized, for they are the natural stimuli to reflective inquiry' (Dewey 2007: 34); indeed, this stimulus should be exploited if we truly wish to learn from our own experience rather than merely being told what to do. This, however, requires the individual to work outside of, and challenge, the accepted processes of the organisation – relying much more on their own judgement, which is inherently more risky than the usual 'conformance of acts to precepts and rules [which] is the easiest, because most mechanical, standard to employ' (ibid: 29). As Dewey remarked, reflective thinking involves suspended judgement; and 'suspense is likely to be somewhat painful' (ibid: 10).

Judgement

Whenever we exercise judgement, how can we be sure that we are acting with the best of intentions? According to Schon (1983: 21), professionalism can be understood as consisting of 'instrumental problem-solving made rigorous by the application of scientific theory and technique'. Macklin expands this, describing an 'implicit or explicit declaration that the recipient can trust the practitioner not to use him or her as a mere means to the practitioner's ends [and] not instrumentalise the recipient of his or her services but will instead treat them as an ends in themselves' (Macklin 2012: 88). Using these criteria, how can I know whether my actions are professional?

Reflective narrative clearly requires judgement to be exercised by the narrator, who decides what to include; and also by future readers of the account, who decide what sense to make of the account in their current situation. This matter of practical judgement is, as discussed earlier, a natural part of the ongoing process of reflection, either first- or second-order, that each of us undertakes as we go about our interactions with others. However, in our quest for certainty within process-driven environments, our desire to understand experience as something predictable and safe, we can often overlook or even attempt to ignore or deny the relevance of our own practical judgement. In order to better understand what is going on as we interact with each other, we need to give proper attention to practical judgement – the Aristotelian virtue of phronesis.

Phronesis

In Project 3, I started to talk about the importance of phronesis in understanding our ordinary everyday experience. Flyvbjerg (2001: 57) defines phronesis as 'ethic[al] deliberation about values with reference to praxis. Pragmatic, variable, context dependent. Oriented toward action. Based on practical value rationality'. Various authors propose their own definitions of the term – as 'the practical wisdom that comes from an intimate familiarity with the contingencies and uncertainties of any particular social practice (Schram 2012: 16); 'People's practical wisdom in dealing with routine decisions and unexpected contingencies' (Frank, cited in Flyvbjerg et al 2012: 48); and 'Practical wisdom, or knowledge of the proper ends of conduct and the means of attaining them' (Runes 1960: 235). Other authors refer us to Aristotle's

definition of phronesis as 'prudence or practical wisdom' (Sliwa & Cairns 2012: 228). Kinsella reflects that the different definitions of *phronesis* usually 'imply the significance of reflection, both tacit and explicit, that highlight a reflection to morality; and that convey a relationship between reflection and action' (Kinsella & Pitman 2012: 35) – a subtle and important distinction that enhances our current understanding and use of the word *prudence*.

In today's parlance, 'prudence' is used to describe a cautious act that takes account of likely outcomes. The 1982 *Oxford English Dictionary* defines prudence as being 'careful to avoid undesired consequences, circumspect, discreet'; the prudent thing to do is often the safe option – the choice least likely to cause upset for those involved, the protagonist included. Flyvbjerg emphasises this distinction between the safe and the correct thing to do, saying that 'phronesis thus concerns the analysis of values – things that are good and bad for man' (Flyvbjerg 2001: 57). Kinsella's and Flyvbjerg's definitions include what I consider to be the key distinction between the modern-day understanding and use of the word 'prudence' and the sense that Aristotle made of it:

> Prudence is concerned with human goods, i.e. the things about which deliberation is possible; for we hold that it is the function of the prudent man to deliberate well; and nobody deliberates about things that cannot be otherwise, or there are no means to an end and that end a practical good. And the man who is good at deliberation generally is the one who can aim, by the help of his calculation, at the best of the goods attainable by man. Again, prudence is not concerned with universal truths only; it must also take cognisance of particulars, because it is concerned with conduct, and conduct has its sphere in particular circumstances.[18]

It is in the use of 'calculation' and 'cognisance of the particulars' that phronesis – not prudence, in its modern usage – captures the essence of practical judgement; judgement in the execution of praxis, the use of knowledge or skills. Phronesis is not just an instinct or hunch about what is the practical and correct thing

[18] Penguin 2004 edition of *The Nicomanachean Ethics*, p. 154.

to do; this would overlook the 'calculative' aspect of Aristotle's prudence. Nor is it purely an application of technical understanding without consideration of the local conditions; this would be to ignore the 'cognisance of the particulars'. Phronesis is the application of knowledge and understanding into the local particular situation, which in turn changes the understanding of that knowledge as a result of its application. We cannot hope to make any sense of episteme and techne without their practical application into the real world of experience.

Summary

In this project, I have argued that current approaches to lessons learned are too reductionist in their nature: in their attempt to generate context-independent knowledge, they paradoxically lose the very context that creates knowledge in the first place.

I argue for prioritising the particular, as well as aiming to produce knowledge that is general, explicit and universal. This emphasis on the particular is in recognition that the goal of learning is to 'produce input into the ongoing social dialogue and praxis in a society, rather than to generate ultimate, unequivocally verified knowledge' (Flyvbjerg 2001: 139). In human experience, there is no ultimate, unequivocally verified knowledge other than the experiences we each have of ordinary everyday life, which is churning around us as we 'continually negotiate and respond to others who are also intentionally doing the same' (Stacey 2007: 250). While all understanding is necessarily an abstract simplification of experience, I argue for creating a lesson learned that is a 'thick simplification' – one that leaves the first person perspective in the account of what happened, as opposed to the 'thin formulaic simplification' of current approaches to lessons learned. The reader can then make an assessment as to the power relations at work in the account of the experience, not just based on the reported outcome or the things that I thought were important at the time of writing.

The sense made of any future understanding of lessons learned that are abstracted from experience will depend on the power relations and ideology prevalent at the time of reading, just like the sense made and conclusions drawn of the lessons learned is dependent on the power relation prevalent at the time of writing. It is by recognising the role that phronesis plays – both in the phenomena

that we are interested in understanding through a lessons learned activity, and the sense that we now make of the phenomena that we are interested in understanding – that we can make better use of reflexive narrative, in accounting for lessons learned through proper consideration of power and ideologies at play. For any other approach that 'extracts the general from the particular and then sets the particular aside as detail, illustration, background, or qualification leaves us helpless in the face of the very difference we need to explore' (Geertz 1995: 40).

Synopsis

Power and narrative in project management: Lessons learned in recognising the importance of phronesis

Introduction

In this synopsis, I account how my research over the last 3 years has taken me and my animating question – patterns of human relating and how they are influenced by power and ideology – on a journey of understanding that has led to me explore the role of narrative in organisational change. My research has been situated in project management, the discipline that I was working in at the time of my research, the application of my inquiry being the activity of lessons learned within project management.

The format of the Synopsis is a brief review of each of the four projects followed by a discussion on the movement of thought and a critical reflection of the key themes emerging from each project. This is followed by a reappraisal and further explication of the key themes that have emerged during my research. Following the section on method, the final section summarises and clearly states my contribution to knowledge and practice.

Project 1

Project 1 is an account of the influences and experiences that have formed my professional practice prior to starting my research. I draw on my experience of working in UK aerospace and automotive manufacturing industries to explore the understanding of organisations as systems and pose some of the questions that I was beginning to ask. I recall how – when promoted from the blue-collar world of production and supervision to the white-collar world of planning, analysis and administration – I initially became enamoured with the systems methodologies that I was coming into contact with. At the time that I was successfully implementing such approaches as lean systems principles, I felt it was the correctness of the tool I was deploying that accounted for our success. I believed it had some value that existed – independent of the situation into which it was being deployed – that could be

weighed, measured and universally recognised as such through logical argument. I write how later in my career, I became concerned that I could not always replicate this apparent success in other companies. This led me to begin to question the notion of scientific management – namely, that observed behaviour can be broken down into its constituent parts, understood and then built back up into an understanding or model that can be applied in other circumstances with predictable results. This was not my experience of working in different organisations and applying what I had found effective in one environment into a similar one. Neither was it consistent with my observations of what was considered the right thing to do at one point in time not being the right thing to do at another point in time in the same organisation, despite little having changed in the environment apart from the senior management team's view of what 'good' looked like.

Movement of thought in Project 1

I recall scanning the suggested reading list that accompanied the wealth of forms that I received with my enrolment on the DMan programme. Among the long list of unfamiliar authors and topics, *Rationality and Power: Democracy in Practice* (Flyvbjerg 1998) caught my eye, as the back cover notes described 'how power not only corrupts character but public discourse, how bluffing and deception displace sound argument, how rationalisation displaces rationality'. This appealed to the latent sense of injustice I had felt for some time regarding what I considered to be the capricious nature of what was considered the right thing to do in organisational life. I remember reading it by the side of the pool on our annual holiday in my first year of my research, as engrossed as any other holidaymaker reading the latest bestseller camped out on their captured sun bed. I recall being glued to its plotlines of heroes and villains, the warring factions of the civil servants of the Danish town of Aalborg as they schemed their way through the politics, administration and planning of the building of a new bus station. All of this brought to life by Flyvbjerg's lively first-hand account of the unfolding drama.

My thoughts were moving away from the notion that a 'technically good plan would implement itself' (Flyvbjerg 1998: 122), toward one where 'power defines what counts as knowledge and rationality and ultimately... what counts as reality' (ibid: 97). I began to view the success of changes as not only due to the

appropriateness of the method for the technical environment into which it is being applied, but equally due to the fit of the approach with the existing conversations within the company. In this context, I recognised that it is 'the activity of conversation itself [that] is the key through which forms of organising are dynamically sustained and changed' (Shaw 2002: 10). I related to how Shotter, in his work on conversational realities, argues that 'the primary human reality is persons in ordinary everyday conversation' (cited in Griffin 2002: 134) and that it is in the 'intermediacy, undecidability and ambivalence in which different people meet each other in the socially constructed encounters of everyday life, that political struggles are their most intense' (Shotter 1993: 38).

I explored the work Elias (1970) on power and Foucault (1994) on the relationship between power and truth – how truth can be understood as 'the ensemble of rules according to which the true and the false are separated and specific effects of power attached to the true' (Foucault 1994: 132). In this view, truth is not absolute and unchanging, but subject to constant economic and political enticement – what is true only being held to be true because of its 'circular relationship with systems of power that produce and sustain it' (Foucault 1994: 132).

This led me to my examination of the work of Stacey (2007, 2010), Shaw (2002) and Griffin (2002) and their understanding of organisations as complex responsive processes that '[focus] attention directly on patterns of human relating, and [ask] what kind of power relations, ideology and communication they reflect' (Stacey 2007: 266). Through their writing, I started to take up Mead's understanding of communication (1934), in which gesture and response constitute the social act. This is a way of understanding how meaning is constructed in the act of conversation – as opposed to the sender–receiver model of communication widely adopted in systems literature (Stacey 2007), in which meaning can be fixed and transferable. I was coming to understand how the sense we make of situations changes due to the particular circumstances and people involved.

Critical reflection on Project 1 and the impact it was having on my working practices

In Project 1, I was beginning to engage with some of the concepts and authors associated with complex responsive processes. I was also acquiring familiarity with

the critical review technique required for doctoral-level studies. Had I read *Power and Rationality* prior to undertaking my research, my understanding of Flyvbjerg's work would have ended upon completing the book, with the sense that I was making of his writing probably reinforcing some of the more cynical views I had of the organisations I had worked for. However, critically reviewing the sense that I made of the book with other students and the DMan faculty opened up new meanings for me.

I was excited by, and had begun to grapple with, some of the challenging themes and authors that were the topic of discussion on the programme. I vividly recall reading *Mind, Self and Society* over and over again, trying to make sense of what it was telling me. Reflecting on that time now, it feels to me that I was trying a little too hard to make sense of what I was exploring in the rational sense of sense making. That is to say that something, if inquired into enough, could be resolved. It is apparent from my writing at the time that I had yet to grasp the concept of paradox and accept the possibility that what I was exploring was not 'resolvable' in the traditional scientific sense. It was not until Projects 3 and 4 that I would begin to comprehend that there are 'many areas of human experience that are paradoxical. True paradoxes have no solution, like non-linear equations, but can only be iterated and investigated and perhaps made more comfortable through investigation' (Mowles 2011: 263).

This must also have been clear to other members of the programme at the time. I recall a conversation with one of the faculty members, who expressed concern that 'we [the faculty] are only going to disappoint you'. This puzzled me at the time, but I now interpret it as a comment on my desire at the time to make some sense of what was going on, separately from the activity of what was going on. It was not without some degree of ironic self-reflection that I recently found myself writing the following to a fellow DMan student in the process of writing their Project 1:

> The meaning I make of Mead came to me gradually. Sometimes it felt like trying to look at the 'floaters', those little black dots in your eyes (that I understand are made up of clumps of protein) that each time you move your gaze to look at them they move as well. The only way to observe them being

> not to look directly, but allow them to exist on the periphery of your vision – not the focus of, but part of, your field of view.

The change within my work activity was a subtle one. For some years preceding the DMan programme, I had a sense of disquiet with how people within the commercial organisations that I was a part of, went about getting along with each other. It was not a new thing for me to be exploring other ways of understanding what it is we are doing together. To further this understanding was, after all, why I decided to undertake this research. Its influence on my work practices at this time was to expand the themes I would find myself discussing with my work colleagues. I was now more inclined to deliberately opening up questions, rather than closing down with a deliberated answer.

Project 2

This project is a more in-depth exploration into the nature of power relations in organisations. I recounted a change initiative that I was managing, to co-locate 175 Research & Development (R&D) engineers at our site in Parkstown. Initially, this project to deploy an established company policy proceeded to plan, with agreement from all stakeholders involved that it was the rational thing to do. Then there came the intervention of a previously silent senior manager, Dennis Otto, who opposed the plans. I recall how the influence of this one manager was sufficient not only to change what was viewed as the rational thing to do by the management team that had previously supported the project, but also to polarise opinion to such a degree that it was no longer acceptable to challenge the new view of what was rational within the management peer group. An illustration was a meeting with John Taylor, the head of R&D, to decide which course of action should be taken: the project proposal, which accorded with company policy, or the proposal that aligned to the wishes of Dennis Otto. In the last half-hour of this meeting, John stated that this was not an easy decision to make and asked the same question over and over: ‘Are there any other solutions that we have not considered?’ His breathing was very audible, which my boss and I took to indicate that he was in a highly anxious state.

I reflected on how this meeting had changed my views of what was happening and how I was a part of this process of change. This gesture of the heavy

breathing called out in me the feeling of anxiety. However, the meaning did not reside in the gesture of the heavy breathing alone. As Mead explains, this 'response on the part of the second organism to the gesture of the first is the interpretation – and brings out the meaning of that gesture, as indicating the resultant of the social act which it initiates, and which both organisms are thus involved' (Mead 1934: 80). John's anxiety was expressed in the social act of conversation, and became an anxious expression when recognised as such by myself through the experiences I have had within other anxious situations and in the response that I gave to this recognition, which in turn called out an anxious act on John's part. It is in this gesture, and response – the social act – that meaning emerges. I was now less certain about the position I was taking, and was contributing to the overall uncertainty of the situation. My views were forming and being formed by the social act at the same time, as were the views of the other senior managers who had initially supported the project but were now having doubts in the light of the uncertainty of direction expressed by all.

Movement of thought in Project 2

The sense that I was beginning to make in Project 2 was that there may not be an answer, teleological and fixed in nature, to the problems that organisations encounter that exists independently from ourselves. This 'implies a very different understanding of participation, namely that participation is self-organisation' (Griffin 2002: 125). We are both forming and being formed by the communicative situations we find ourselves in while conducting our ordinary everyday activities.

This led me to look more closely at rationality itself, which can be seen as technical rationality – 'a method of deciding that involves setting clear objectives, gathering the facts, generating options, and choosing one that maximizes or satisfies the objective' (Stacey 2007: 152) – and also as 'a method of deciding and acting in what seems to be sensible ways which are reasonable in the circumstances and sane rather than foolish, absurd or extreme' (ibid: 152). This second understanding of rationality is how I made sense of senior management's decision to realign their views with those of Dennis Otto. As his intervention shifted the power relations within the organisation, it became absurd or foolish to see the issues any other way. I began to enquire further about this phenomenon of shifts in power – what Foucault

(1994) and Elias (1970, [1939] 2000) refer to as power as a function of relationships; is not something that someone possesses, but 'a structural characteristic of all human relations' (Elias 1970: 93). 'What characterises the power we are analysing is that it brings into play relations between individuals' (Foucault 1994: 337).

This understanding of the importance of relationships between individuals continued in my exploration of Scott's work (1998). I found in my own experiences of the communicative nature of power relations Scott's assertion that any centrally managed social plan must recognise the importance of local customs and practical knowledge if it hopes to succeed. I related this to my experience as to how the initial approach to the project aligned with company policy and in this sense aligned with the technical rationality of setting clear objectives, gathering the facts and generating options. This approach ultimately came undone with the introduction of a shift in power relations that required that rationality of the second kind, that of deciding and acting in what seems to be sensible ways which are reasonable in the circumstances.

Critical reflection on Project 2 and the impact it was having on my working practices

Project 2 moved me toward a deeper understanding of the ideas that had appealed to me during Project 1. The interesting notion of power being relational, which I first encountered when reading *Power and Rationality* (Flyvbjerg leaning heavily on Foucault's treatise on power), was enriched through the subsequent reading around Project 2. I began to explore how other authors explain these phenomena from another perspective – such as Stacey (2007) and Toulmin (2003), in their separate discussions on rationality and reasonableness, respectively – and linking this back to the discourse on power. Finding no reference to Scott or Toulmin in the works of Flyvbjerg and Foucault that I was reading, I began making my own links between contemporary authors writing around different but related topics. While Stacey (2007, 2011) gives a comprehensive overview of many of the authors who are writing around complex responsive processes, I was beginning to make my own sense of the authors I was reading, and of what I thought was going on.

What I was not doing in Project 2 was critically reviewing the work of the authors I was reading. I was ready to accept what was written verbatim – finding, perhaps by chance, other work that supported our shared point of view. I did not

presume to challenge the ideas of respected scholars by researching the alternative views of other authors. I felt confident enough to write about topics such as Scott's 'thin formulaic simplifications' in exploring how abstractions of the particular that appeal to the technical rationality of setting clear objectives, gathering facts and generating options (the rational processes that, as a project manager, I had been following) and thus prevail within management circles – yet it is the human rationality of deciding and acting in what seems to be sensible ways, within the fluctuating context of the current moment, that so often takes precedence. This in turn led me in Project 3 to explore the work of Bourdieu on *habitus*, but I still lacked the academic rigour (or vigour) to challenge what I was reading. I was prepared to find my own words in the words of others, but not prepared to challenge the words of others with their words; it was not until Project 4 that I found my own voice strongly enough to do this.

The influence of my research on my work practice was becoming more profound toward the end of Project 2. I was very taken with the work of Scott in *Seeing Like a State* (1998), and found myself effortlessly eulogising about the necessity of local knowledge if we are to avoid the pitfalls of the *Waldsterben*.[19] Metaphors such as this gave me confidence to engage in this topic with the broader section of the people in the organisations I was working for: the topic of forestry in Saxony in the eighteenth century was sufficiently removed from the personal emotion of our day-to-day operations to allow safe discussion. However, I was still viewing metaphors such as this as an answer in themselves, and collapsing the paradox into a this/that, true/false statement ('four legs good, two legs bad', as my supervisor wryly commented). Once again, it was not until Project 4 that I was able to start to talk and write in a way that explored paradox without the tendency to collapse into dualism, as evidenced by the new sense I made of Scott's work in my second reading and critique in Project 4. At the time of writing Project 2, I was using

[19] The forest dieback caused by the absence of litter and woody biomass, an unintended consequence of German forestry's attention to formal order – an approach that is now recognised as a major factor leading to thinner and less nutritious soils (Scott 1998: 20).

such rhetorical devices as a means to close down discussion and 'prove' that I was right. I still talk about the cadastral maps and thin formulaic simplification to anyone and everyone who will listen, but now I see it as more as a means to 'continually negotiate and respond to others who are also intentionally doing the same' (Stacey 2007: 250).

Project 3

In this project I attempted to understand the resistance to the implementation of visual management boards to the manufacturing area where I worked. Visual management, widely regarded as best practice within many manufacturing and industrial environments, aims to improve the effectiveness of the manufacturing or support areas concerned by making any issues visible and therefore improving escalation and resolution of any issues that affect performance.

I sought to understand why this practice of visual management continues to be held in such high regard, despite it being counter intuitive to many of the beliefs of the community to which we were introducing it. Examining my response to the resistance I encountered, I explored why I and other managers insisted on deployment of the boards, despite our lack of personal conviction that it was a useful initiative. Why were we unable or unwilling to challenge the status of something that was considered best practice, despite our own personal misgivings and previous experience of failed deployment of visual management? What sense should I make of this apparent conflict between our beliefs and our behaviours?

Movement of thought in Project 3

Throughout Projects 1 and 2, I explored the influence of power in understanding why some of the behaviours that at first sight could be seen to be irrational could also be considered rational when we consider that power and its effects are not absolute, but relative. Power is brought into play by, and at the same time creates, the relations between individuals. In Project 3, my research led me to question why that might be: how, despite expressing our individual concerns about the course of action we were taking, collectively we were unable to change direction in the way we felt was appropriate.

I explained how the sense that we (the management team responsible for implementing the change) made of the resistance we met might typically be understood through the concept of the change curve, adapted from Elizabeth Kubler-Ross. This idea of change as a process in which resistance gradually resolves into acceptance – provided the correct process is followed – has widely been accepted in the management literature as a description of how change happens in organisations. Yet why, despite the previous failure of visual management boards and our personal reservations about their effectiveness, did none of us question the value of reintroducing them? This led to me explore the work of Pierre Bourdieu and the notion of *habitus*, which he defined as 'systems of durable, transposable dispositions' (Bourdieu 1977: 72). Bourdieu's argument is that our behaviour is not governed by rules telling us what we should and should not do. It is these 'durable, transposable dispositions' – the collective products of history, which create structures that continually self-structure based on this history – that regulate our collective practices.

The concept of *habitus* prompted me to think differently about why it was not feasible for us, the highly paid management team, to accept that the visual management boards might not work. Surely a benchmarked lean process such as visual management, which aligned with and supported the habitus of scientific management, only had to be applied properly for it to work eventually? To concede that the visual management boards might not work in practice could call into question the whole ethos of scientific management, and with it the validity of our own roles within the organisation. We are paid to make sense of the manufacturing activity, and can only do this within what Fleck describes as 'thought collectives' – where what is already known influences the particular method of cognition; and cognition, in turn, enlarges, renews, and gives fresh meaning to what is already known (Fleck 1979). The need to understand the commercial organisation epistemologically as predictable rule-obeying endeavour is predicated on the need to understand the organisation epistemologically as a predictable rule-obeying endeavour. The engineers and managers entering the modern manufacturing organisations are being trained in scientific management tools and techniques in order to be able to work with the scientific management tools and techniques

prevalent in modern manufacturing organisations. This then to some degree predetermines their disposition.

What I had previously viewed as an illogical activity – redeploying the failed initiative of visual management boards – was beginning to make a different kind of sense to me. It was now understandable within the context of an organisation as *habitus* (a system of 'durable, transposable dispositions'), the habitus of the dominant management discourse being an epistemological understanding of knowledge being universal, invariable and context-independent.

Finally, in Project 3, I started to explore a different understanding of knowledge that may be appropriate to the everyday experienced world of practice: that of phronesis. Flyvbjerg contrasts *episteme* (theoretical *know why*) and *techne* (technical *know how*) with *phronesis* – practical knowledge and practical ethics (Flyvbjerg 2001). He argues, as I do, that *phronesis* is the intellectual activity most relevant to praxis – the process by which a lesson or skill is enacted in the working environment.

Critical reflection on Project 3 and the impact it was having on my working practices

One of the more remarkable features of Project 3 is my extensive use of first-order narrative (an account that retains the personal viewpoint). In Projects 1 and 2 and in early drafts of Project 3, I had been challenged by my supervisor and learning set to include more of myself in the narrative: 'We can't see Mick in this narrative' was a critique that I consistently received. Yet whenever I attempted to include Mick in the narrative, I felt even more removed from it. I wondered why it was so difficult to do what was being asked of me, especially as it was what I wanted to do. This quandary in my writing resonated with the experience I was writing about with the visual management boards: despite our earnest intent as individuals, there is something in the social that paradoxically both enables us and prevents us from being our independent selves. I would now explain this through the writings of Mead and Elias, who describe how the individual can only exist in the social; but at the start of Project 3, I had yet to make a connection between the sense I was making in my research and the sense I was making of my experiences at work – there was still a degree of separation between theory and practice.

My curiosity as to why I was not 'simply' able to write in a narrative style led me to explore the work of Fleck and Bourdieu. Bourdieu had greatly influenced Flyvbjerg, who quoted him extensively in *Making Social Science Matter* (2001). I began to make sense of my inability to simply write as I wanted to, in the same way that I was making sense of my inability to challenge the reintroduction of Visual Management boards. I felt a dawning realisation that I myself was one of those engineers and managers entering the modern manufacturing organisations who had been trained in scientific management tools and techniques in order to be able to work with the scientific management tools and techniques prevalent in modern manufacturing organisations. This then to some degree predetermined *my* disposition.

I was beginning to explore why I was not able to stand outside of the phenomena I was observing, paradoxically through the recognition of not being able to stand outside of the phenomena I was observing. I reflect that this was enabled by a change in the way I was attempting to explain my experiences in my writing. By deliberately using first-order narrative and leaving my account in, I was recognising that I was as much a part of the account as the phenomena I had been trying to objectively observe.

The impact on my work was becoming inescapable. Earlier in my research, I had gained confidence in using the work of others (such as Scott) to introduce some of the more radically social concepts I was embracing; now, I was using the narrative approach within my own work. I was asked to write an article for the company magazine, entitled 'A Day in the Life of…' – one of a series of articles by senior managers describing a typical day working day. These normally follow a formula: start work at such-and-such time, do some emails, go to this or that review, find time to visit the 'troops'… Encouraged by positive reviews of my narrative approach to Project 3, I decided to write a narrative account of my commute back to England from Toulouse. I wrote about the sights, sounds and experiences I had and the sense they made to me in the context of what was happening to me at work at the time.

I recall being nervous about its publication, and feeling equally flattered and petrified that the editing team had left most of what I wrote untouched. The extract below is from the closing lines of the article, recounting the final few minutes of my

commute as the aeroplane descends toward the runway adjacent to our facilities in Parkstown.

> As the aircraft makes its final approach, I can see Pegasus House, waiting to become the centrepiece of the new office campus, and Concorde.[20] These images remind me that change happens. Goxhay and Parkstown have enjoyed many years of history together, achieved by being adaptable to the changing needs of the environment and responsive to the needs of the people who make our organisation what it is. Disembarking, I reflect that we need to ensure that we continue being adaptable and responsive to secure our future.

The article's reception was more than I could have hoped for. I got a lot of ribbing from colleagues, but also a lot of feedback that they had found what I wrote refreshing and how it had called out similar feelings in them.

I was also beginning to use narrative in more formal engagements. As head of project management for UK R&D, I hosted many project reviews. These were usually very 'proper' affairs. Over the years, I had developed the art of collecting inputs and wide-ranging data and presenting it in a coherent and convincing way, as expected of someone in professional project management. Now, I found my presentation style shifting: rather than refining the presentation in detail, I found myself deliberately leaving things 'unfinished' – leaving the outcome open, rather than feeling the need to cover all possible scenarios and assessments. Though rigorous in stating how I had arrived at my point of view and the methodology followed, I no longer sought to close down the discussion by concluding with three options or recommendations; other than inviting the audience to make their own sense of it all.

I was fortunate that my reputation within the project management community, confidence in presenting my subject-matter and credibility with the management teams I was presenting to allowed me a certain degree of latitude in

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[20] Pegasus House is a previously derelict building from the 1920s that was undergoing renovation at the time of writing. The last Concorde to fly was on static display at the side of Filton runway.

meeting their expectations; but there were a few raised eyebrows and even direct challenge on what I was presenting. I recall one executive, after a project gate review, urging me to draw things to a close in the project reviews and insisting that I should be synthesising the issues more conclusively. My initial dismay at this criticism turned to delight as a lively discussion followed about the real purpose of these reviews with each other. We each engaged in the other's viewpoint, enriching the sense that we were making of the project meeting that had just taken place. This has not been an isolated experience: my practice is constantly changing to include a more narrative and discursive approach to understanding what it is we are doing in our ongoing interactions with each other.

Project 4

Project 4 is a critical review of the current practice of lessons learned in project management practice that typically seek to 'avoid failures in the future, proactively prevent reinventions, enable an immediate understanding of root cause and problem solutions by providing recommendations' (Goxhay KM website). I recount my experience of managing a project to relocate the manufacture of aircraft components from one plant to another, and the challenges we faced in our efforts to capture the 'lessons learned' at the end of the project. I propose that the deterministic tools and processes of current approaches to lessons learned, entrenched in the technical rationality of first-order systems thinking, necessarily over-abstract and oversimplify the problems encountered. Approaches that profess to comprehensively ensure that lessons learned are applied through the two steps involved in capturing lessons learned and the three steps involved in applying lessons learned (Rowe 2008), necessarily remove the power relationships at play in the organisations that we are engaged in. In order to fit the technical rationality of contemporary management science, they must imply that there is a best practice to be found by application of the appropriate tool or process. This assumes 'efficient cause' – where the nature of movement is a 'corrective repetition of the past in order to realise an optimal future state' (Stacey 2011: 301). In assuming an objective reality that can be objectively observed by an individual, we inevitably remove the power relations inherent in the nature of organisational life from the lessons learned analysis.

Movement of thought in Project 4

In this project, I explore the necessity of context when understanding the sense we make of our experiences. I critique the work of Dreyfus and Dreyfus on skill acquisition in their challenge of the 'unquestioned assumption that logical inference produces intelligence' (Dreyfus & Dreyfus 1986: xiii) and the 'impossibility of replacing involved *knowing how* with detached *knowing that*' (ibid: 184, emphasis added). I link this with Schon's account of reflection in action, where 'each move is a local experiment which contributes to the global experiment of reframing the problem' (Schon 1983: 94) and Dewey's argument that the progress of knowledge in the affairs of social and moral matters 'depends upon methods of observation and of the consequences which test them' (Dewey 2008: 149).

I argue that within this understanding of experience and the knowledge gained from it – in which the sense that we make of our experiences is not fixed in nature, but dependent on the interpretation we place on them (the methods of observation and the consequences that test them) – lessons learned cannot be an exercise in understanding that is captured and frozen in time. I propose that any future sense made of any lessons learned abstracted from experience will be dependent on the power relations and ideology prevalent at the time of reading, just as they are at the time of writing. I explain how this is due to the paradoxical nature of human understanding: how in order to understand something it is necessary to abstract it and this process of abstraction necessarily changes the nature of what we experienced. In contemporary literature on management, the tendency to 'look for answers', to find the 'root cause', to 'frame the world as a set of problems amenable to fixing' (Bavington 2010: 116) leads us to over-abstract from our experiences. It is this abstraction of experience, without positioning within the power relations and ideology of our experience that I contend is the reason for the organisations we find ourselves in not learning from lessons learned.

In Project 4, I proposed instead what I called a 'thick simplification' – a reflexive-narrative approach to lessons learned, leaving the first-order narrative abstractions in the account. This is a way of enabling an understanding around power relations in play at the time of event we are interested in, through a narrative account of what was going on around us at the time of the experience that we wish to learn lessons from. It is an approach that allows us to represent the understanding that the

particular gives us, while at the same time making sense of the population-wide patterns that emerge from the particular phenomena to better help us understand and make sense of the actual activity we experience.

In describing an interview I performed with an engineer called Bob, I use a first-order narrative, leaving the personal account in. This, I argue, enables the reader of the lesson learned to place the account within their own experience, through the act of generalising aspects of the account within their own particular experience. It is the recognition of this paradoxical relationship between the general and the particular that differentiate this approach from others in the contemporary management literature –treating the lessons learned as inputs into a potential future understanding, rather than as an output from current understanding. My contention is that this 'thick simplification' approach to lessons learned addresses the weakness I have observed in current approaches – namely, that they are inadequate in their interpretation of experience as separate from the activity of experiencing and therefore do not take account of the influence of power relations on those involved in the activity of capturing lessons learned, power relations that are paradoxically both forming and being formed by the action of undertaking a lessons learned activity.

Critical reflection on Project 4 and the impact it was having on my working practices

A significant development in Project 4 has been my critique of the work of others. In critiquing *What is Reflection in Action? A Phenomenological Account* (Yanow & Tsouskas 2009), I challenged what they and other authors see as a cognitivist orientation in Schon's writings, which they claim led Schon to ignore the 'embeddedness of mind in social practices' (Yanow & Tsoukas 2009: 1343).

This critique enabled me to elaborate an argument that reflective practice cannot be considered as anything other than wholly embedded in social practice. This then led me to ask myself the question: What distinction could, or should, be made between the act of reflection and the act of doing? I related my further research into what Dewey called 'judgment suspended during further inquiry' (Dewey 2007: 10) to Griffin's distinction between first-order versus second-order reflective thought. Unlike Yanow and Tsoukas, I concluded that both are thoroughly embedded in the social; yet it is the first-order reflexivity, with its suspension of judgement,

that is required if we hope to better understand what goes on in our ordinary everyday activities with others in the organisations in which we work. This informed my criticism of current approaches to lessons learned in project management that I contend do not suspend judgement– instead, appeal to the readymade logic of flowcharts, process, best practice, 3 steps, etc in an attempt to avoid the difficulties that present themselves within the development of an experience. Paradoxically, it is in attempting to avoid these difficulties that those undertaking such an approach to lessons learned do not succeed in learning the lessons of their experiences. These insights represent a significant shift in my research from the preceding three projects, and I could not have arrived at them without my critical review of the authors I was reading.

The continued development of the first-order reflective narrative approach is another key aspect of Project 4. It is an approach that allows us to represent the understanding that the particular gives us, while at the same time making sense of the population-wide patterns that emerge from the particular phenomena to help us understand and make sense of the activity we experience. This I termed a 'thick simplification' in an attempt to hold the paradox of generalising and particularising, the paradoxical need to change our experience in our attempts to understand our experience.

Thin formulaic simplifications and thick descriptions

In *Seeing Like a State*, Scott (1998) explains what I see as the paradoxical nature of what he termed 'thin formulaic simplifications' – schemes that did not recognise the importance of local customs and practical knowledge; schemes that are 'very much like a still photograph of the current in a river', being 'far more static and schematic than the actual social phenomena they presume to typify' (Scott 1998: 46). The paradox is that it is their very thinness of nature that makes them of interest to us. He explains that the cadastral maps of seventeenth-century Europe were of interest to the state because of their abstraction and universality: 'the completeness of the cadastral map depends, in a curious way, on its abstract sketchiness, its lack of detail – its thinness' (Scott 1998: 44). It was only through this thinness that the state was able to make sense of land taxation.

To explore description, Ryle (2009: 497) uses an imagined situation of one boy rehearsing to parody another boy's wink:

> The thinnest description of what the rehearsing parodist is doing is, roughly, the same as for the involuntary eyelid twitch, but its thick description is a many-layered sandwich, of which only the bottom slice is catered for by that thinnest description.

Ryle's somewhat elaborate exposition highlights the necessity of 'thickness' of description if we are to understand what it is that is that is occurring. By describing the act of the boy as closing and opening one eyelid without the other (the thinnest of descriptions), the reader cannot know whether the boy has an involuntary twitch, is mocking another person's involuntary twitch, giving a knowing wink to a friend, etc. Enabling the reader to interpret meaning into the act of closing one eyelid requires a thicker description than just the physical act itself.

In Project 2, the sense I made of Scott's thin formulaic simplifications was as an argument to move away from what I considered a lesser approach of simplification toward the greater value of thick description. In doing so, I was attempting to collapse the paradox of the need for something to be both thick and thin at the same time. In Project 4, my use of the term 'thick simplification' is an adjunct to both Scott's thin formulaic simplifications and Geertz's borrowing of Ryle's thick descriptions in an attempt to introduce a paradoxical concept into project management, an environment that eschews paradox as a sign of weak argument.

The term 'thick simplification' is also an attempt to recognise that it is not possible to be part of the *habitus* of contemporary management if we do not to some degree conform to the norms and standards of contemporary management, in which we are expected to formulate our experiences within the dogma of 'efficient cause' where the nature of movement is a 'corrective repetition of the past in order to realise an optimal future state' (Stacey 2011: 301). We cannot hope to change the *habitus* of contemporary management if we are not recognised within that *habitus.*

This paradoxical characteristic of the need for change to be recognised within the existing habitus is evident in all areas of human experience. In writing this thesis, I have to demonstrate a significant original contribution to the practice of

organisational change through the sustained exercise of critical powers as the outcome of a sustained programme of research containing material worthy of peer-review publication. All this must be done in a lucid and scholarly manner, demonstrating technical competence within the chosen field within the agreed word count limit. Failure to observe any of these criteria would render my work unintelligible to the academic community to which I hope to contribute.

This represents a further shift in my thinking from earlier projects and illustrates a change in my understanding throughout the course of Project 4. I write that it is very easy, when writing critically about how systems interpretations are taken up in our attempts at understanding, to fall into dualisms and argue for one or the other side of a particular debate. I explain how the *habitus* of modern professional life that I spoke about in Project 3, the 'structured structures that are predisposed to function as structuring structures' (Bourdieu 1977: 72), creates a predisposition to look for answers; and in turn, that predisposition conditions the requirement for an answer. In Project 4, I recognise that in our attempts to make sense of our experience, we necessarily have to abstract from our experience, and this process of making sense paradoxically changes the sense that we make – without feeling the need to 'fix' this paradox through some clever device or other form of intervention.

During the writing of Project 4, I have attempted to arrive at a significant original contribution to the practice of organisational change. This has been through a sustained programme of independent research over the last 30 months, and the ongoing development of my ability to critically review the work of other authors who are writing in and around my chosen field of understanding: the behaviour of people in organisations as complex responsive process of relating. This has culminated in my animating question – patterns of human relating, and how these are influenced by power and ideology in the discipline of project management – being brought to bear on the practice of lessons learned within project management. The focus on lessons learned has grown naturally out of the course of my research, as has the development of my critical understanding of other authors' work.

Reappraisal of emergent themes, and how my thinking has changed during my research

The key learning for me that has influenced both my thinking and my professional practice is that the sense we make of experience can only be made sense of in the social context in which we make sense of it. It is not that sense has a sense independent of the social context within which we make sense of our experience. Sense-making is subject to, and a constituent of, the constraining and enabling forces of the power relations in the social environment in which we are going about our ordinary everyday activities.

In Project 1, I explored how my failed attempt to introduce change at Collins can be understood by examining the power relations at play within that organisation at the time. I explained how, while the espoused ('legitimate') themes of the company were to minimise cost and focus on quality, it was the 'shadow' themes of fulfilling sales orders, and the power relations between the key actors in the company, that influenced what made sense in that organisation at that time. In particular, the relationship between Peter Finks and the senior sales managers influenced what was accepted as the right thing to do, what made sense in that situation; and that influence overrode the rational management view that I had of what was the right thing to do. Furthermore, the sense that we collectively made of what was the right thing to do changed as those power relations changed. I described how my 'technically correct' approach to managing aspects of the company, an approach that was once lauded as best practice and had been instrumental in my rapid promotion within the company, also became my undoing when this approach no longer aligned with the power relations at play in the company. These were power relations to which I had inevitably contributed through the introduction of a more flexible manufacturing system that that did not rely so heavily on an accurate sales forecast. This was the sense I made of my attempt to introduce change in that organisation at that time – a different sense than was made of similar attempts in other organisations at other times.

In a radically social view of organisations, change occurs from a social point of view

In attempting to orchestrate change in the organisations we find ourselves in,[21] we inevitably engage with the 'many single plans and actions of people [that] can give rise to changes and patterns that no individual person has planned or created' (Elias, 2000, p366). This leads to a pervasive unpredictability which 'renders all projections in social life permanently vulnerable and fragile' (MacIntyre 1985: 103).

In Project 2, I give the example of a change programme in the R&D department that was proceeding as was expected by the senior management team until the intervention of a previously silent stakeholder, Dennis Otto. As the activity that we were undertaking, the relocation of 175 engineers on the Parkstown site, engaged with Dennis Otto's plans regarding the relationship between our organisation and that of a risk-sharing partner (RSP), the project suddenly shifted direction in an unforeseen way. It is important to point out that I am not suggesting that this change in direction could have been foreseen had we taken some different approach to engaging with this stakeholder, but that the outcome of this engagement was only knowable after it had happened. This is because the consequence of the actions of the individual stakeholders acting on each other – such as the anxiety expressed by the head of R&D in this matter; Denis Otto's strong character, and his position regarding the RSPs; support from the executive committee for this move; and the project managers' desire to deliver the plan – are not linear (as in an understanding of 'efficient cause') but are non-linear (as in an understanding of causality being transformative).

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[21] Throughout this synopsis, I refer to 'the organisations that we find ourselves in'. This has for me been a serendipitous development of a phrase to explain our relationship between the individual and the social, related to how the individual can only be known in the social: the organisations that we *find* ourselves in are also the organisations that we find *ourselves* in.

Efficient cause and transformative cause

Central to my argument for the importance of first-order narrative in lessons learned is the move from a systemic understanding of efficient causality to a responsive process understanding of transformative causality. Stacey contrasts the Kantian ideal, where there is a duality between the individual and the social, with the Hegelian perspective of social practices in which the individual cannot be separated from the social (Stacey 2007: 246). Indeed, in Hegel's view, both individual and social consciousness arise in social relations, which they are simultaneously constructing. This is clearly a paradoxical perspective, in which individual minds are simultaneously forming and being formed by social relations; it presents a notion of causality that we may call transformative causality.

> The move from systemic to responsive process thinking is, therefore, fundamentally a move from a dualistic theory of rationalist-formative causality to one of *transformative causality*. (Stacey 2007: 246, emphasis in original)

It is this notion of transformative causality, where the nature of movement is 'iterated interaction perpetually constructing the future in the present in order to express continuity and potential transformation in identity at the same time' (Stacey 2007: 246), that best explains the experiences I have had of attempting change in the organisations we find ourselves in. In contrast to the notion of efficient causality, where the nature of movement is a 'corrective repetition of the past in order to realise an optimal future state' (ibid: 246), transformative causality allows for surprise and novelty, with the cause of movement being 'responsive processes of local interaction between the entities in the present' (ibid: 246).

This understanding of transformative cause is further supported by Mead's notion of the *I–Me* dialectic and the response to the generalised other, in which the individual cannot exist independently of the social. I can only know myself in response to the effect that I have on the representation of myself in the generalised other; and that response inevitably changes my understanding of myself, at the same time as forming my understanding of the generalised other. In finding myself in the *habitus* of contemporary management, I inevitably maintain, create and change the *habitus* of contemporary management. The *habitus* of contemporary management does not exist outside of our collective understanding of it, an existence that

inevitably changes and transforms as we attempt to make sense of it in the organisations we find ourselves in.

This is what has most vividly informed my practice and led me to conclude (for now) that in a radically social view of organisations, change occurs from a social point of view.

This engagement with the 'many single plans and actions of people [that] can give rise to changes and patterns that no individual person has planned or created' (Elias [1939] 2000: 366), can be further illustrated using the metaphor of heavy traffic on a busy three-lane highway, how the individual intentions of each driver to reach their destination in the shortest possible time can lead to every individuals journey taking longer than desired. The many single plans and actions of each driver (acceleration, deceleration and weaving in and out of lanes) give rise to changes and patterns that no individual person has planned or created (congestion through sudden braking, traffic jams, accidents).

This is the sense that I now make of the practice of organisational change; any intentional change, instigated by an individual, is subject to the complex interplay of intentions. The *habitus* of management, that is the interplay of the individual plans and actions of people, renders projections as to the outcome of the organisational change 'permanently vulnerable and fragile' (MacIntyre 1985: 103). Just as a speeding driver can succeed in reaching their destination ahead of schedule on any one journey, yet can find themselves stuck in traffic through employing the same approach on a different journey, so the practice of organisational change from an individual perspective can find itself stalled, gridlocked in the complexities of everyone else's individual perspectives.

This viewpoint should not be seen as an excuse or even reason why any individual should give up on the notion of effect change within the organisations they find themselves in; rather, it should be seen as inspiring further efforts on the understanding that attempting change from a singular, individualistic point of view is (to borrow a quote from Dreyfus & Dreyfus: 1986) no more sensible than climbing the highest tree in the forest in an attempt to reach the moon (Ibid,10). If the problems we face in the organisations we find ourselves in result from the unpredictable outcome of the interplay of all the various individual plans, then they are unlikely to be resolved through the introduction of another individual plan.

Current approaches to change management that recommend introducing new plans, based solely on analytical, technical, calculative or instrumental rational assessment of the existing plans, are unfortunately getting better and better at doing the wrong thing. In their ambition to 'fix' whatever the perceived problem is, from a singular point of view, faster and more effectively than any other proposed solution they may be competing with, they necessarily over abstract and over simplify the phenomena we were interested in in the first place.

What is required is a thoroughly social view of social change.

This does not mean giving up on all that we currently know about management

When Stacey writes that all we can do as people in organisation is 'continually negotiate and respond to others who are also intentionally doing the same' (Stacey 2007: 250), I do not see this as an invitation for us to relinquish the value we place on scientific endeavour in understanding what it is we do in organisations. Nor do I see it as a retreat from scientific management to some *laissez-faire* approach to organisational change, where there is no instrumentality in our actions. Stacey elaborates that although the tools and techniques of analytical, technical, calculative or instrumental rationality cannot be the cause of change or improvement, 'many of them are essential in modern organisations and societies where some degree of control has to be exercised from a distance' (Stacey 2012: 65).

Far from dismissing the dominant management discourse, the complex responsive processes view of relating is a critical appraisal of what it is that we do when we work together within the dominant management discourse. It is an abductive approach to understanding that 'adopt[s] a hypothesis as being suggested by the facts' (Peirce 1998: 95). It is an inference to the most likely explanation as to why we have a need for scientific management and how that need for scientific management conditions our disposition for a need for scientific management.

Taking a complex responsive process approach to understanding how we act in organisations is a recognition of the nature of the habitus of management – that is, the necessity of science and scientific endeavour as the means to continually negotiate and respond to others who are also intentionally doing the same, while recognising that there is nothing that exists or needs to exist outside of this

endeavour. This conversation of gestures between individuals in the social – Mead's act of gesture–response–social act, that forms and informs the I–Me dialectic over and against the generalised other – is the totality of our experience; and all forms of understanding are firmly rooted in the continually changing and constantly changeable nature of collective human experience. As Charles Sanders Peirce, the father of pragmatism, eloquently put it, 'there is not one drop of principle or theory in the whole vast reservoir of established scientific theory that has sprung from any other source than the power of the human mind to *originate* ideas that are true (Peirce 1998: 216, emphasis in original).

There is no efficient cause where the nature of movement is a 'corrective repetition of the past in order to realise an optimal future state' (Stacey 2011: 301) outside of our desire to experience phenomena as such. There is no enfolded causality that exists independent of our experience of it. There is just (and by just I mean only and completely) the 'many single plans and actions of people [that] can give rise to changes and patterns that no individual person has planned or created' (Elias [1939] 2000: 366).

To return to my earlier example of traffic on a busy three-lane highway, it is my experience that people caught up in traffic jams often remark that 'there was nothing to cause the traffic jam' after having sat stationary in their car for many minutes in the fast lane of the highway, bumper to bumper with the car in front. I have uttered this to myself when the traffic starts moving again and I can find no apparent cause for the delay: no accident, no broken-down vehicle, no lane closure – nothing outside of the reality of the traffic all coming to a halt owing to the many single plans of actions of each driver (the acceleration and deceleration and weaving in and out of lanes) giving rise to changes and patterns that no individual person has planned or created (congestion through sudden braking, traffic jams, accidents).Yet the traffic jam, temporal and co-created though it was, was just as real an obstacle as any created by observable cause and effect or some other instrumental rationality to which we could more readily attribute the phenomenon.

In our ambition to conclude what is wrong and fix it, we inevitably and inexorably contribute to the situation we find ourselves in

By avoiding reliance on the technical rationality of cause and effect (necessitating the collapse of paradox of human experience), understanding the organisations we find ourselves in as complex responsive processes of relating succeeds in what Dewey described as the essential element of reflective thinking: 'judgment suspended during further inquiry' (Dewey 2007: 10).

It is important to emphasise that this suspension of judgement is not just 'an act' of suspending – it is not that there is something 'out there' to be uncovered, that we will discover more quickly by waiting a while before judging. Rather, it is a recognition that the act of *not* suspending judgement but appealing to the readymade logic of flowchart, root cause analysis, 5 whys, etc, creates a reality that was not there before hand independent of our experience of it. Of course the same has to be true of suspending judgement. As stated above it is not that we will see more clearly what is already out there, but suspension of judgement allows for critical reflection on what it is we are doing; it 'focuses attention directly on patterns of human relating, and asks what kind of power relations, ideology and communication they reflect' (Stacey 2007: 266) – enabling a deeper exploration of the intersubjective nature of our shared experience.

The intersubjectivity of our shared experience

In my reflection on Project 1, I recall how I happened upon Flyvbjerg's *Power and Rationality: Democracy in Practice* and how something in the title, and the reviews I read, called out a response in me – then something in his writing resonated with my own experiences of organisational life, and led me to further enquiry with the authors he built his understanding on. This then started a journey of exploration that over the past 30 months has led to countless conversations, readings, reflections, understandings, misunderstandings, arguments, negotiations, agreements and compromises – and all manner of associated feelings around trying to understand what it is we are doing when going about our ordinary daily lives together. The four projects, together with my reflective account at the start of this synopsis, are an attempt to capture my experience of those last 30 months in such a way that I and the reader can make sense of my research project. However, from a complex responsive

process of relating point of view, this action in itself poses a number of questions and challenges from some of the themes that I have attempted to cover.

If, as I argue in Project 4 and elsewhere in this synopsis, the sense that we make of our experiences is not fixed in nature but dependent on the interpretation we place on them, and if those interpretations in turn are context-dependent, then how can I expect the reader to make the sense of it that I intended? Furthermore, from a Meadian point of view of gesture/ response/social act, how can I even know what I intended until it is responded to by others?

Throughout the writing of my thesis, my work has been subject to constant peer review and critique by my supervisor, learning set and extended research group, with whom I have shared successive drafts as part of the iterative development of each project. While I have been writing about my personal experiences, it has been clear that my own experiences resonate with those of others reading my work, who have encountered similar situations and people in their own lives. This continues to be evident in their response to my work; they can make sense of my writing about my experience through reference to their own – a positioning that is made more accessible by the narrative account.

My supervisor commented on an earlier draft of this synopsis that she felt she had encountered a Dennis Otto in every organisation she had worked in across four different countries. Experiences that are as separate from mine are nevertheless connected to mine, through the social object of the generalised other – the habitus that we are co-creating. A narrative such as my account of the last 30 months of my research can make sense to another reader through the subjective, involved nature of responsive understanding, as opposed to the objective detached view of systems thinking.

It is this paradox of shared/separate experience, and how the sense that we collectively make of it can be explored through a narrative approach to learning and sense-making in the organisations that we find ourselves in, that has most influenced my thinking during this research and, more latterly (as I will expand upon later), drawn me to focus on the current practice of lessons learned in project management.

Through the suspense of judgement and gradually allowing the narrative to unfold from the diverse, complex and sometimes conflicting stories that people, documents, and other evidence tell them, I have, with others, co-created a different

understanding of what it is that we are doing together in our ordinary everyday lives – an understanding that continues to inform my management practice.

Further positioning of complex responsive processes of relating and the dominant management discourse

Throughout this thesis, I have contrasted a complex responsive process of relating approach to understanding what it is that we are doing when we go about our ordinary everyday business with what I have termed the 'dominant management discourse' – by which I am referring to systemic means of explaining and understanding what happens in the organisations we find ourselves in. The dominant management discourse could also be described as that found in the mainstream literature on management practice – most of which is based on scientific and first-order systems management practices.

The dominant discourse has its roots in the scientific management principles founded by Taylor (1911) and Fayol (1916). Fayol and Taylor were both engineers and sought to understand and improve what they observed going on in the organisations they were engaged with through the application of mechanistic and reductionist approaches. Taylor's remarkably slender volume *The Principles of Scientific Management* (1911) has had an equally remarkable impact on management principles for the last 100 years. Within its 76 pages, he positions the new approach of scientific method against the inefficient 'rule of thumb' method prevalent at the time, claiming to show the enormous gains that would result from the substitution by our workmen of scientific for rule of thumb methods (ibid, 6).

Stacey (2011) plots a course through the historical evolution of reductionist management science as it shifts to a holistic systemic perspective. In doing so, he emphasises that this shift does not entail any substantial challenge to the scientific method: the manager continues to be equated with the natural scientist, the objective observer (Stacey 2011: 59). Just as the scientist is concerned with natural phenomena, so the manager is concerned with the workings of an organisation. Though countless volumes of books seem to be produced almost daily that claim to

offer the answer to all the problems of current management practice,[22] the majority position themselves within a first-order systems understanding of management practice. *The Org* (Sullivan & Fisman 2013), for example, promises to reveal the underlying logic of the office. *Smart Swarm* (Miller 2010) offers an understanding of how the intricate group behaviour of flocks, herds, schools and colonies of animals can teach humans to organise, systematise and problem solve more effectively. Pink's bestselling book *Drive: The Surprising Truth About what Motivates Us* (2010) talks of nine ways to improve your company as you move from motivation 2.0 to motivation 3.0. All of these titles share the assumption that the organisations we find ourselves in are systems with 'human individuals with minds inside them located at one level of existence while organisations as things called "systems" which actually exist are located at another level of existence' (Stacey 2011: 41). Whether talking of an organisation as a system, or taking the second-order view that organisations can be described *as if* they are systems, these approaches share the taken-for-granted assumption that organisational phenomena are somehow located at a different level from the human individuals who can design, intervene, influence and solve systemic problems (ibid: 42).

It is the view of organisations as first-order systems, and the managers within these organisational systems as objective observers capable of independent analysis of what it is that is going on, that represents what (following Stacey) I have called the 'dominant management discourse' found in mainstream literature. Against this, I have contrasted the non-systems understanding of complex responsive process of relating, which is based upon a Hegelian understanding of transformative causality. This differs from systems thinking in that the observer cannot be separated from the observed. Studies of organisations as complex responsive processes of relating are not alone in interpreting organisations as something other than first-order systems: both social Cartesianism (a second-order approach, where the object under observation is considered *as if* it were a system) and critical management studies

[22] A quick search on Amazon.co.uk on 8 April 2014 for books published in the last 90 days with the word 'management', in the category 'Business Finance and Law', returned 2368 results.

take a non-systemic view of organisations. I will examine further these two examples and contrast their approaches with that of complex responsive process of relating. I will conclude this section with a brief review of the work of Elias and Mead in relation to their contribution to a processual understanding of society and social evolution, as this is a key aspect in the understanding of complex responsive processes of relating.

Social Cartesianism: Tacit and explicit knowledge?

An alternative understanding of knowledge from that found within the first-order systems thinking of *if–then* cause and effect is that of tacit and explicit knowledge. Polanyi posited the idea of tacit knowledge with his claim that we can know more than we can tell (Polanyi 1966). He positioned tacit knowledge in opposition to explicit knowledge (what we can tell), but maintained that while tacit knowledge can be possessed by itself, explicit knowledge must rely on being tacitly understood and applied (Polanyi 1969). This understanding of explicit knowledge having to be tacitly understood in order to be of use (in the sense that it is of little use if it cannot be applied) resonates strongly with the subjective nature of understanding that I have discussed during this thesis.

Collins explores this interrelationship further in *Tacit and Explicit Knowledge* (2010), taking the view of social Cartesianism, which posits that humans are special in that they have collective tacit knowledge that is not shared by animals or things. This collective tacit knowledge gives humans an asymmetrical power to organise all those things that amount to what we perceive as 'selves', to repair their deficiencies and fit them into our social lives (Collins 2010: 164). Building on Polanyi's original hypothesis, Collins further subdivides tacit knowledge into what he refers to as weak, medium and strong tacit knowledge. These subdivisions have to do (respectively) with the contingencies of social life (relational tacit knowledge), the nature of the human body and brain (somatic tacit knowledge), and the nature of human society (collective tacit knowledge). These three phenomena of tacit knowledge, Collins argues, are usually experienced by an individual learning something new. Collins further challenges what he refers to as the mistaken claim that all knowledge is tacit by asking: 'If all knowledge is tacit, what is it that is rooted in tacit knowledge?' (ibid: 6).

Reading Collins' book *Tacit and Explicit Knowledge*, it appears to me that he is seeking to clarify the relationship between the tacit and the explicit: while Polanyi's formulation makes a distinction between the tacit and the explicit, it doesn't show exactly where the distinction lies or how it works in practice (ibid: 6). It is this inexact distinction that Collins tries to resolve with his three phenomena of tacit knowledge, listed above. Throughout the book, he builds this understanding into a three-phase model of tacit knowledge that he describes as a 'Google Earth'-type map of tacit knowledge and the terrain of tacit knowledge, with the aim of showing how the three phases of tacit knowledge can move into the explicit. Collins describes explicit as being something being conveyed as a result of strings impacting with things. Strings in this sense being, 'bits of stuff inscribed with patterns [that] in themselves are not meaningful. A string is simply anything that is neither random nor featureless' (ibid: 16)[23]

In *Tacit and Explicit Knowledge*, Collins attempts to build a model of human understanding that, like all models, does not seek to explain what is going on in the real world, but models something that is close enough to be of use to us in understanding what it is that might be going on. Collins recognises this in a footnote to a section in which he suggests that the growth of automation caused us to question what knowledge might be, although knowledge cannot be found in the absence of the activities of humans:

> The point is that we must *start* with an attempt to think about knowledge in a way that goes beyond human experience if we are to understand that experience properly. The starting to point is to think of knowledge as 'stuff' that might be found in animals, trees and sieves and then try to work out from this starting

[23] Collins further explains his meaning of 'strings' in the following footnote on page 9: 'This has nothing to do with "string theory" as in physics. The metaphor in string theory is "lengths of strings", whereas the metaphor used here is found in *Chambers Dictionary*, "a state of things threaded together or arranged as if threaded". In some ways, it is akin to the usage in computing – an ordered set of symbols in one dimension – but is more general still, including, as it does, the physical medium on which the information contained in the pattern is expressed'.

> point what it is that humans have. Human experience alone is too blunt an instrument for this task. (ibid: 6, emphasis in original)

It is important to understand this footnote when attempting to make sense of Collins' work being an 'attempt to think about knowledge' rather than an attempt to explain knowledge. This can be thought of in the same way that a mathematical model of our solar system can predict, with some degree of reliability, where a given planet will be at a given point in space and time; but that is not to say that the planet is there *because of* general theory of relativity or Newton's first law of motion. Such concepts merely offer the means to a good enough working understanding of what it is that might be going on. As with all models of reality, there will be exceptions, where the models do not adequately explain what is happening. Collins recognises this, and indeed points to many such instances within his own work.[24]

These exceptions to the rule do not present too great a problem in themselves. In fact, their elaboration by the author could help the reader in assessing their importance in deciding whether or not to accept the general hypothesis under consideration. Collins' work on tacit and explicit knowledge is as good a representation of what it is that might be going on between us as Senge's 'fifth discipline' (Senge 2006), Kotter's eight-step change process (Kotter 1996), Lewin's unfreeze–change–refreeze change model (Lewin 1947) or any of the other attempts to describe experience in terms of a cause-and-effect first- or second-order system.

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[24] For examples, see page 25: 'The trouble is that in humans, this nearly always involves a degree of fluency in the language in which the teaching is conducted. For the sake of the exposition, this ambiguity will be ignored and fluency will be treated as something separate from merely absorbing instructions'; page 40: 'Figure 4 [a magnified picture of an integrated circuit] is of course not an object, it is a string that you are being asked to interpret as an object. You are being asked to carry out a kind of thought experiment'; page 96: 'Unknown knowledge is, of course, an oxymoron; but not one that causes too much trouble'; and page 130: 'In chess the rules do not change, whereas in language they change continually in response to the way society changes [followed by the footnote quoted earlier]. See Mackenzie 2008 for an exceptional case in which the rules of chess are not completely fixed'.

They are all simply tools that can be used to understand what it is that might be going on in order to predict (in some instances) to a reasonably satisfactory degree what might happen in some other given similar circumstance. What I find more problematic is what Collins refers to as the most fundamental subdivision of human expertise: the distinction between expertise of the sensory motor kind and that of the social kind (ibid: 124).

Collins makes this distinction in critiquing the five-stage model of skill acquisition as described by Dreyfus and Dreyfus (1986), highlighting what he refers to as a serious misunderstanding of tacit knowledge as 'an obsession with the human body at the expense of the proper obsession, which should be with the nature of knowledge' (Collins 2010: 104). This distinction between expertise of the sensory motor kind and that of the social kind is problematic as it does not pay proper attention to the effect of power relations in the generation of knowledge, either tacit or explicit. The problem with failing to take account of power relations can be shown in passages such as:

> Examples of the application of tacit knowledge discussed so far include bicycle riding, copy typing, paint spraying and chess. In each case it was argued that the knowledge needed to accomplish them, though not expressible in rules that could be executed by humans, was in practice, or in principle, expressible in rules that could be executed by machines. In the case of balancing on a bike and copy typing, machines can already do the task better than humans, albeit by different means. (ibid: 119)

Splitting expertise into either sensory motor or social requires a shift from describing the human-capable activity of bicycle riding to a machine-capable activity of balancing on a bike. Knowing how to balance on a bike is only one part of knowing how to ride a bike. There are other things that need to be taken into consideration in order to ride a bike, as Collins goes on to point out:

> In each of these cases, however, when they are carried out by humans in the normal course of social life, there are additional aspects of the activity to be taken into account that have not so far been discussed. The most straightforward case is bike riding. What was discussed in the last chapter was bike balancing, but in normal human life bikes are ridden on roads used by

> others and traffic has to be negotiated: the gyroscopes and feedback systems that keep a mechanical bike upright cannot negotiate traffic. (ibid: 120)

This distinction that Collins makes between humans and machines (humans being able to negotiate traffic, but machines not) does not take into account the influence of power relations in the human societies in which bikes are ridden. The above passage does not explain *why* we would be riding a bike in the first place. The subdivision of human expertise into sensory motor kind or the social kind causes us to stop short of enquiring why we might ride bikes as we do. While recognising that negotiating traffic is a different kind of problem to riding a bike, and requires an understanding of the social conventions of traffic management and personal interaction, the social Cartesian view stops short of enquiring why these social conventions are there in the first place. To understand why the social conventions might be different in the examples cited (Amsterdam, London, Rome, New York, Delhi, Beijing) could benefit from further inquiry into how human activity (such as riding a bike) is paradoxically both formed by and forming the power relations in each society, and how these power relations shift over time as a result of this paradoxical relationship.

While bike balancing can be achieved by either man or machine, bike riding is an entirely human phenomenon – and as such, indivisible from the social. The social circumstances that prompt someone to ride a bike (affordable transport, ecological awareness, sporting activity, status symbol, only means of getting from A to B, etc) inevitably condition how the activity of bike riding is viewed in that society. If we take Bourdieu's perspective of the notion of habitus as paradoxically self-structuring and constrained by those structures, then any understanding of the social conventions involved in traffic management and personal interaction must to some extent be formed by an understanding of the social conventions of traffic management and personal interaction.

Perhaps it would be useful here to consider a different approach to elaborating on Polanyi's work, by taking a processual (rather than systems) understanding of experience and the knowledge gained from it. In a processual understanding, human actions, decisions and behaviours are understood as embedded in and continuously reshaped by local patterns of communicative power relations

that in turn condition the local interactions. Rather than attempting to precisely specify the inexact distinction between tacit and explicit (a necessary undertaking, if we are to take a systemic understanding of what it is that is going on in the organisations we find ourselves in), a processual understanding allows the definition to remain inexact, explicated only in the live and lived moment of a specific experience.

To attempt an exact distinction changes the nature of any sense that we may make of the distinction between tacit and explicit. Collins himself writes that as soon as we begin to reflect and write our reflections down, we create a subject that is concerned with what cannot be written down (ibid: 80). Instead, we should accept the paradoxical nature of knowledge: that in the very process of defining something, we necessarily change it.

This is why I have chosen a critical reflection of the patterns of human relating as espoused in the non-systemic approaches of critical thinking and complex responsive process of relating, rather than the models and maps of first- or second-order systems thinking. In order to go deeper into understanding why social interaction are as they are, I am arguing for a thorough enquiry into power relations and the effects of those power relations on the people involved. I argue that this way of understanding the phenomena of lessons learned in project management, supported by the narrative of my lived experience at work – one that treats experience and the knowledge that comes from it as indivisible – is more helpful than any attempt to separate knowledge from human activity.

Critical thinking: An emancipatory approach

Alvesson and Willmott also challenge the dominant discourse on management from a critical thinking perspective. In *Making Sense of Management: A Critical Introduction* (2012), they seek to

> provide an integrated and distinct perspective on management that is at once broad and critical. Broad in the sense that the theory and practice of management is examined in relation to the emergence of modern capitalist society; and critical because assumptions underpinning the world of management are subject to scrutiny, rather than being acknowledged or disregarded. (Alvesson & Willmott 2012: xi)

In taking account of the practice of management in relation to the emergence of modern capitalist society, Alvesson and Willmott are, like Stacey, recognising the inherently social nature of the individual; they 'assume that as humans we are always formed by social relations, cultural understanding and unconscious processes' (ibid: 22).

They too outline a dominant management discourse based in the scientific management principles of Taylor and Fayol – reflecting that ever since the publication of *Principles of Scientific Management* (Taylor 1911), academics have 'endeavoured to revise his thinking rather than contest its scientific aspirations' (Alvesson & Willmott 2012: 47). Rather than revisit the transfer of scientific thinking from its domain in the natural sciences into the domain of social sciences, Alvesson and Willmott argue that it is what they call the 'trickier aspects' of management practice – such as the politics of practice – that are often deemed by practitioners to be the most realistic. Although they make no reference to the concept of phronesis, they do emphasise the importance of the contextual nature of understanding – stating that paradoxically, it is precisely the inexact, contextually sensitive forms of knowledge that are often most valued and appreciated by practising managers.

There are many parallels to be drawn between critical thinking and complex responsive processes of relating. Both take a non-systems understanding of what it is that we are doing as we go about our ordinary everyday lives of interacting with each other. Both emphasise the importance of viewing human participation in society not as the activities of autonomous individuals, but as fundamentally interdependent and always formed by social relations. Both place importance on the exercise of power in the construction and representation of reality, and consequently stress the importance of a more reflexive approach to understanding what it is that we are doing rather than simply accepting the logic of systems thinking. It is important, however, to note the key point at which complex responsive processes of relating and critical thinking diverge.

According to Alvesson and Willmott, the social relations, cultural understanding and unconscious processes that form humans 'often impede or conflict with our capacity to be reflective, to use our knowledge, to exercise our intellectual skills and to engender a sense of morality'(2012: 22). Critical thinking

has its roots in those scholars who are closely related to the Frankfurt school of thought; particularly in the work of Habermas. As Alvesson and Willmott explain (ibid: 63), the core aim of critical theory is to develop a more rational, enlightened society through a process of critical reflection upon the organisation and efficacy of existing institutional ideologies. This anticipated emancipatory movement is what distinguishes critical thinking from complex responsive processes of relating:

> The critical study of management aspires to foster less socially oppressive form of organising and managing. The (for us) desired democratisation of managerial activity may result in divisive work organisation being replaced by collectives of cooperatives in which there is focus *inter alia* upon social objectives, green forms of work and a reduced vertical division of labour. (ibid: 19)

In contrast to the post-Habermassian thinking of critical theory, the post-Hegelian thinking of complex responsive processes of relating does not promise to deliver some less socially oppressive form of organising and managing. In the conclusion to one of his most recent books, intriguingly entitled *Tools and Techniques of Leadership and Management: Meeting the Challenge of Complexity* (Stacey 2012), Stacey explains what he sees as the major importance of what he is offering as

> trying to indicate an alternative way of thinking about organisational life which focuses our attention on what we currently are already doing in organisations rather than what we should be doing to achieve our outcomes. (ibid: 123)

Unlike critical thinking, the complex responsive processes of relating school of thought makes no claim to contribute toward positive outcomes enabled through collectives of cooperatives focused upon social objectives, nor indeed towards any other predicted outcome. To claim a specific outcome *a priori* would be contradictory to the understanding that complex non-linear interactions produce unpredictable patterns – unpredictable, because simple *if–then* causal links do not apply. Rather, we are urged to realise that an 'outcome' is an artificially static representation of events that are simply ongoing, never complete.

In complex responsive processes of relating, there is no prescription of a utopian future state that we are working towards. While there is agreement that

humans are formed through social relations, cultural understanding and unconscious processes, there is no claim that these processes in any way 'impede or conflict with our capacity to be reflective, to use our knowledge, to exercise our intellectual skills and to engender a sense of morality'(Alvesson & Willmott 2012: 22). The claim of complex responsive processes of relating is that these are the processes within which we *must* exercise our capacity to be reflective if we are to better understand the ongoing process of change in our thinking and our working practices.

Mead and Elias: A processual view of life

The emphasis on a processual understanding of organisations, as opposed to the systemic understanding that characterises the dominant management discourse, is a key distinguishing feature of complex responsive processes. Ralph Stacey, the leading author in the field of complex responsive processes of relating, developed the concept from his original work in the field of complex systems and their application to understanding management practice. It was his collaboration with two of his former PhD students, Doug Griffin and Patricia Shaw, in the mid 1990s that introduced the notion of process as opposed to system as a way of understanding management practice. As Stacey recounts in *Tools and Techniques of Leadership and Management* (2012), it was Griffin who introduced the notion of pragmatism, with particular reference to the works of George Herbert Mead. Shaw emphasised the importance of conversation, drawing upon the work of social constructionists such as Shotter, while Stacey himself was strongly influenced by Elias (Stacey 2012: 153). This concept of understanding observed phenomena as an ongoing process is the important contribution that the complex responsive processes of relating approach makes to the understanding of management practice. It is important to emphasise that 'process' in this context is defined by Stacey (2007: 239) as the fundamental processes of human communicative interaction between interdependent persons taking the form of a conversation of gestures. Processes thus refer to conversations, power choices and ideologies that may be patterned as routines and procedures. This is where the insights of Elias and Mead are most evident in the contribution to an understanding of complex responsive process of relating.

Norbert Elias, one of the most influential sociologists of the twentieth century, made a number of detailed studies of how people in Western civilisations

have experienced themselves over the centuries. In *The Civilising Process* (2000), he argued that what we now call Western civilisation did not result from any calculated planning, but emerged gradually through social evolution. In Elias' conception of human agency, actions and ideas cannot be understood if they are considered in isolation; instead, 'they need to be understood and explained within the framework of interdependent networks' (Elias 1970: 96). Elias also argued against the concept of society as some kind of systemic whole that somehow exists outside of the interaction of actions and ideas. Instead, he saw the social life of human beings as being full of contradictions, and tensions due to the fact that although individuals can plan their own actions, they cannot plan the actions of others and so cannot predict or control the interplay of actions. Elias also recognised that although the development of a society is unplanned and beyond immediate control, the interplay of plans produces a pattern of developments that tends in a particular dimension. This last point explains why the term 'process' is central to Elias' work: in his view, something is going on that has a direction – which can be understood as having a pattern and form that emerges out of an ongoing interaction between many interconnected individuals; this is how Elias views the civilising process. As Stacey points out, this has significant implications for management thinking. To shift from a consideration of autonomous individuals working within/upon a whole that exists independently of themselves to a notion of interdependent persons working within a framework of interdependent networks, challenges the concept (inherent in systems thinking) of leaders and managers being able to change organisations in any direct manner.

The philosopher and social theorist Georg Herbert Mead is acknowledged as one of the founders of the American pragmatist movement. In *Mind Self and Society: From the Standpoint of a Social Behaviorist* (1925), he addresses the central theme of his work: the problem of how consciousness and mind arise in human conduct. Mead argued that mind and society must have evolved together, and that self-consciousness could not exist without human societies. Like Elias, Mead emphasised the importance of conflict in the process of society that he describes a communicative interaction in understanding 'life as a process and not a series of static physiochemical situations' (Mead 1925: 275). For Mead, understanding comes from the communicative interaction between people engaged in the process of

gesture, response, social act. It is these currents of communicative interaction that constitute what Mead refers to as the 'generalised other' – collective society emerging from sophisticated processes of cooperative interaction.

It is beyond the scope of this thesis to provide a comprehensive review of the work of Elias and Mead. Rather, the passages cited, and my reflections on their work, are intended to highlight both authors' emphasis on a non-systemic understanding of what it is that might be going on among us in the societies that we live in. This processual, rather than systemic, understanding is at the heart of understanding organisations from the viewpoint of complex responsive processes of relating. This non-systemic approach is both intriguing and challenging for researchers such as myself, who are interested in exploring different ways of understanding just what it is we might be doing together in the organisations we find ourselves in.

To consider management and organisational behaviour as anything other than systemic in approach is, to use Fleck's vernacular, to try and describe something outside of the current 'thought collective'. As described earlier in the work of Stacey and Alvesson and Willmott, the dominant discourse on management as first-order systems has been repeatedly revised, rather than contested or challenged, over the course of the last century. Newton (2001), writing about the relevance and limitations of Elias in organisational management, explains that this lack of challenge is not surprising: given that organisations are composed of asymmetrical networks of interdependency based on organisational and professional hierarchy, it would be surprising if critical management discourses were commonly adopted, as they risk exposing such asymmetries. Many managers have built successful livelihoods and careers upon an understanding of management as systemic; asking them to challenge their own thinking in this regard would be rather like 'asking turkeys to vote for Christmas' – a popular analogy that many colleagues have used in reaction when I have tried to explain the nature of my research to them. It is to some degree an inevitable response when trying to engage in conversation within a discourse where underlying cause and effect are assumed as self-evident. To challenge the need to understand our experience in terms of hard-measurable objective facts and figures by proposing a more fluid, interconnected and subjective

understanding is (somewhat paradoxically) often met with the request for 'concrete evidence' of how this way of thinking is being used by other companies.

As I have already mentioned, it is this form of understanding that makes a processual viewpoint both interesting and challenging for myself. Interesting, as it provides a way of understanding that allows for the nature of power and power relations to be taken into consideration in discussion about organisational design and management. Challenging, because it necessitates a discussion around power and power relating that strips away the rationalisation of systems and procedures and emphasises the asymmetries of everyday life. It is also a necessary challenge: to return to the analogy turkeys voting for Christmas, Christmas is likely to happen whether the turkeys vote for it or not. In a processual view of social organisations, change will happen whether we vote for it or not.

Method, validity and generalisability

The research method employed on the DMan is that of 'making sense of one's own experience… taking one's experience seriously with the aim of reflexively exploring the complex responsive process of human relating' (Stacey 2011: 488). This is a qualitative method of research where our own experiences, expressed within our narratives, become the data for our research. This is very different from the traditional epistemological, quantitative research methods that are usually employed in scientific enquiry.

Alvesson and Skoldberg (2009: 1) explain that traditional research has been conceived as 'the creation of true, objective knowledge following a scientific method'. In this traditional sense, scientific knowledge is seen to be objective, interpretation-free, and theory-neutral; and is either inductive (proceeding from a number of single cases and assuming that observed connections are generally valid) or deductive (proceeding from a general rule and asserting that this rule explains a single case). Steedman (1991), however, claims that knowledge cannot be separated from the knower, and that data and facts are the constructions or results of interpretation. Flyvbjerg also takes up this point, proposing that as *phronesis* is commonly involved in social practice, any attempt to reduce social science to either *episteme* or *techne* is misguided (Flyvbjerg 2001). This is a position echoed by Stacey (2011), who calls for a different approach to research methodology with the

aim of reflexively exploring the complex responsive processes of human relating, given the difficulty of establishing evidence (in the traditional scientific sense) in an uncertain world.

According to Alvesson and Skoldberg (2009: 9), 'reflexive research has two basic characteristics: careful interpretation and reflection'. 'Careful interpretation' implies that all references to empirical data (the observed phenomena of the case study) are the results of interpretation. Here, we are taking the position that facts are always theory-laden (Hanson 1958) and that seeing is inseparable from the perspective; by its very nature, it is perspectival (Wittgenstein 1953). This challenges the very notion of scientific knowledge as objective, interpretation-free, theory-neutral. Given this, any interpretation we make of our research work calls for acute awareness of the theoretical assumptions that constitute the major determinants of our interpretation (Alvesson & Skoldberg 2009).

One of the key challenges laid at the door of this type of research is the 'so what?' question (Bailey 1992: 50) – the risk that the results of such research are particular to that situation only and cannot be generalised to other areas of inquiry. In the narrative research method, in order for its interpretation to be generalisable, the writer must rigorously make explicit the assumptions being made and the ideology being reflected, in order to distinguish their narrative from a literary story that leaves interpretation and meaning largely to the reader (Stacey 2011: 488). Indeed, when addressed correctly, the 'so what?' challenge can invoke the fullest potential of the reflexive narrative method by opening up conversations and discussions around the sense that those involved are making of their everyday lived experience as opposed to the closing down or narrowing of focus. Thomas (2010: 576) further makes the point that the 'seeking of generalisability can inhibit or even extinguish the curiosity and interpretation that can come from *phronesis*', supporting Flyvbjerg's call for the goal of social sciences to be knowledge based on *phronesis*, which uses theory understood in practical experience rather than just theory. Flyvbjerg also argues that case studies can owe their legitimacy and power to the exemplary knowledge of case study, rather than to their generalisability.

From the perspective of complex responsive processes, research itself is a complex responsive process of reflecting on ordinary everyday experience, with experience being an interdependent, social phenomenon fundamental to human

reality. It then becomes essential to focus on the minutiae – 'the primary human reality [of] persons in ordinary everyday conversations' (Griffin 2002: 134) – rather than paying proper attention only to the more obvious problems that conventional wisdom would have us focus on. What is required is a method that allows us to represent the understanding that the particular gives us, while at the same time making sense of the population-wide patterns that emerge from the particular phenomenon.

This is why I have chosen a reflexive research method based on my own individual experience, expressed in narrative format as an abductive approach (Peirce 1998). Abduction differs from induction and deduction in that it includes understandings, as well as empirical and theoretical viewpoints, that are successively developed, adjusted and refined. It is a method of research that takes the approach of 'adopting a hypothesis as being suggested by the facts' (Peirce 1998: 95).

Peirce's extensive writing on the nature of meaning and logic is firmly rooted in the understanding of meaning and logic being an entirely human construct and not existing independent of our own sense of it:

> There is not one drop of principle or theory in the whole vast reservoir of established scientific theory that has sprung from any other source than the power of the human mind to *originate* ideas that are true. But this power to originate ideas is feeble and the truths are almost drowned in a flood of false notions. Experience enables us to filter off the false ideas, letting the truth pour on in its mighty current. (Peirce 1992: xxxiv, emphasis in original)

Peirce asserts that the primary hypothesis underlying all abduction is that 'the human mind is akin to the truth' (Peirce 1998: 108). It is this recognition of truth as originating in the human mind that qualifies abduction as the only logical operation that introduces any new idea, for it is the only one that does not presuppose something exists independent of our understanding of it.[25] It is in this recognition of

[25] By comparison, induction simply determines a value, while deduction merely evolves the necessary consequence of a pure hypothesis. 'Deduction proves that something *must*

the iterative, looped interdependence between theory and experience that an abductive approach enables what Aristotle, in his writings on *phronesis*, termed the 'cognisance of particulars [that] is not concerned with universal truths only'.[26]

The validity of the research is therefore claimed in its context sensitivity, which enables the reader to make their own sense of the narrative of the case, and to agree or disagree with the researcher (Thomas 2010:576). In induction and deduction, generalisations, laws, universals and theory are governed by exacting expectations and procedures that enable the investigator to deal with exceptions, anomalies and idiosyncrasies (such as '*X* happened because of *Y*'). Such expectations and procedures are impossible in social science, as we cannot say in any precise way under what conditions they hold owing to the pervasive unpredictability that 'renders all projections in social life permanently vulnerable and fragile' (MacIntyre 1985: 103).

It is in the very nature of pervasive unpredictability that understanding human behaviour cannot be reduced to a rules-based epistemological understanding independent of context. Human interaction is iterative and recursive. It is complex. We build our understanding based on the understanding we are building within an entirely social experience through which population-wide patterns of behaviour emerge that can only be understood *as if* they have rules and systemic qualities that form and are formed at the same time by the ordinary everyday lived experience. In the social environment, fascination with accuracy, generalisability, the creation of true, objective knowledge following a scientific method is no more or less sensible than using a micrometer to measure potatoes to predict what type and flavour of crisps they may make. It is a perfectly capable device being put to inappropriate use – measuring the trivial and predictable, for which we do not need such sophisticated methodology (Thomas 2010). What is required in social inquiry, such as my DMan research, is not reliance on a naive model of scientific induction, but a broader,

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be; induction shows that something *actually* is operative. Abduction merely suggests that something *may be*' (Peirce 1998: 216, emphasis in original).

[26] Penguin 2004 edition of *The Nicomanachean Ethics*, p. 154.

richer inquiry that accounts for (among other things) questioning and surprise, particularity, and context sensitivity (Thomas 2010).

In the DMan programme, this abductive approach of 'inference to the best explanation' takes the form of my narrative, and the sense I make of it, being iteratively reviewed by my immediate peer group. Research proceeds by researchers 'engaging in argument around difference [and] feeling themselves compelled to justify the perspective they take in its difference from other perspectives' (Stacey 2011; 490). At the mandatory DMan residential weekends, we are required to discuss the sense we are making of our narratives with the other members of the course and faculty in the community sessions – large group sessions where issues are iteratively discussed within the group to ensure that our understanding is justifiable and valid in terms of a wider tradition of thought that the community finds persuasive and plausible. It is through the activity of reflecting on our experiences and the struggle we have to make sense of them collectively that our thought moves and develops. These community sessions are often tense and highly charged, as the activity of having to justify the perspective we take and its difference from other perspectives can be uncomfortable in a large group and can challenge our own sense of identity. The residential weekends also have learning groups where we discuss our progress and issues with our immediate learning group and supervisor. This is an opportunity to understand and make sense of the topics discussed in the large group with the members of the immediate learning group, and to make further sense of our research. This multiple perspective is also encouraged between students in different learning groups, with discussion groups around particular topics happening during meals and the breakout sessions. The semi-structured nature of these meetings, allied with the cohort members being at different stages in the process of the DMan, results in a cross-fertilisation of ideas and challenges from different perspectives.

A number of other qualitative approaches were considered alongside a reflexive narrative approach which, by definition of my research being conducted on my own working practice, falls under the broad category of action research as defined by Argyris, Putnam & Smith (1985):

- Experiments on real problems within organisations that are designed to assist in their solution

- Involving an iterative process of problem identification, planning, action and evaluation
- Leading to re-education, changing patterns of thinking and action
- Contributing to both academic theory and practical action.

I would describe my own investigative approach as action research, as it satisfies all of the above criteria. However, I recognise that it may differ from what many would typically conceive as action research, as the research subject and researcher are less divisible than normal. Though atypical, this is not problematic; for as Bryman & Bell (2007: 429) point out, many action research projects are undertaken by part-time students who take their own work and problems within it to be their primary focus of study.

A methodology used in action research that is similar to the research method of the DMan is organisational ethnography, which has been variously described as the 'confessional' or 'autobiography' (Van Maanen 1988), 'autoethnography' (Cunliffe 2009), and 'at-home ethnography' (Alvesson & Skoldberg 2009). Alvesson describes 'at-home ethnography' as a study/text in which the researcher/author describes a cultural setting to which s/he has natural access and in which s/he is an active participant (ibid: 159). One of the issues associated with organisational ethnography is what Alvesson describes as 'closeness' and 'closure'. He proposes that it is rare for academics to study the lived realities of their own organisations, and suggests that perhaps it is difficult to study something one is heavily involved in. However, he also recognised that personal involvement should not rule out inquiry; involvement should be recognised as being as much a resource as a liability (ibid: 156).These issues are clearly relevant to my research undertaken on the DMan program, given that the area of inquiry is my personal account of my own work experience. I was not what Agar (1986) described as a 'professional stranger', having been employed by the organisations I was conducting my research into at the time of my research. In order to mitigate the difficulties inherent in studying something so familiar, Alvesson suggests that the at-home ethnographer may be wise to address phenomena with which s/he is not deeply involved. Alvesson also recognises that this does not imply detachment on the part of the researcher, but curiously proposes that a low or moderate degree of personal involvement is a

benefit (Alvesson & Skoldberg 2009: 160). He encourages the researcher to take a step back from the flow of interaction in order to take a different perspective from that of an organisational member.

While I would agree that looking at the flow of interaction from a researcher's point of view is the ambition of my research, I cannot view the individual researcher as somehow separate from the organisation that they examine: in the research that I have undertaken, I am both researcher *and* organisational member. The implication of 'doing research in a cultural setting to which I have natural access' is that I can be apart from that cultural setting: though I have access to it for the purposes of research, I am able to retreat to some other cultural setting in order to assess and evaluate, to make sense of my work. In the method of research I have chosen, there is no such neutral ground other than the recognition that the closeness of my cultural setting is what gives my research validity. Through acknowledging that I am as much a part of the phenomena under inquiry as any of the empirical data, I must carefully interpret and reflect upon my own role in what it is that is going on, rigorously making explicit any assumptions being made and the ideology being reflected.

One particular feature of my research is that of the emergent nature of the topic of enquiry. While my animating question – focusing attention directly on patterns of human relating, and asking what kind of power relations, ideology and communication they reflect – has remained consistent throughout, the area of its application – that of lessons learned in project management – has emerged in the course of my research. Another research methodology that promotes a similar emergent approach is that of grounded theory.

Grounded theory (GT; Glaser & Strauss 1967) is a qualitative approach that can be defined as 'theory that was derived from data, systematically gathered and analyzed through the research process' (Strauss & Corbin 1988: 12). In this sense, GT can be seen to be inductive: 'since grounded theory is derived from data, it is developed inductively' (Alvesson & Skoldberg 2009: 57). One of the key features of GT is that of 'coding', whereby data are broken down into component parts that are given names. This activity of 'coding', which is quantitative by nature, is presented as a qualitative approach by dint of the way it is used: Charmaz (2000: 515) elaborates that grounded theorists code emerging data as it is collected, so in GT –

unlike quantitative research, which requires data to fit into preconceived standardised codes – the researcher's interpretations of data shape the emergent codes.

It is in this emergent act of coding that GT seeks to set itself apart from quantitative methods of social science research. Rather than beginning with a hypothesis, the first step in GT is data collection, which is then assembled into a text in which key points are marked with a series of codes. These codes are then grouped into similar concepts (discrete phenomena). It is from these concepts that categories are formed as a higher level of abstraction, which then form the basis for the creation of a theory, which Strauss & Corbin (1998) define as a set of well-developed categories that are systematically related through statements of relationships to form a theoretical framework that explains some relevant social or other phenomena.

For me, this is the key tenet of grounded theory, which makes it of interest to me as a method of social research but ultimately causes me to discount it as the methodology that I wish to undertake. It is in what Alvesson and Skoldberg describe as Glaser and Strauss's 'rather liberating thesis that *anyone* can create their own theory, so long as they start from reality' (Alvesson & Skoldberg 2009: 57, emphasis in original) that I find the GT methodology problematic. It implies a reality that exists independent of our own experience of it, which the researcher can uncover through a process of iterated coding during which the interpretations of data shape the emergent codes. It is this notion of 'presuppositionless induction' (ibid: 58) that problematises GT and its claims for validity: an assumption that the researcher can somehow approach the research topic without any preconceived notion/model and allow the theory to emerge purely from the data. Glaser and Strauss recognise this in their original writings on GT, and offer this curious prescription (1967: 37):

> An effective strategy is, at first, to literally ignore the literature of theory and fact on the area under study, in order to assure that the emergence of categories will not be contaminated by concepts more suited to different areas.

How any anybody can realistically ignore what they already know is clearly problematic – not to mention contrary to what Glaser and Strauss claim to be beneficial in other parts of their work, where they recognise that the researcher does

not approach reality as a *tabla rasa*: 'He must have a perspective that will help him see the relevant data and abstract significant categories from his scrutiny of the data' (ibid: 3). Bulmer (1979) is also critical of this aspect of GT, questioning whether it is reasonable to expect researchers to suspend their awareness of relevant theories or concepts until late in the process of analysis. Bryman and Bell (2007) also point out that business researchers are typically sensitive to the conceptual armoury of their disciplines and it is unlikely that this awareness can be set aside (ibid: 591).

In many ways, I consider GT to be very close to the reflective first-person narrative approach that I have taken in my research. Both are rooted in the experience of the researcher as expressed in a text representing the phenomena they are interested in exploring. Both promote an iterative approach to research that recognises the complex interconnected relationship between researcher and research topic. Both link the emergent theory with practice. But unlike GT, a reflexive first-person narrative does not seek to mitigate or put aside our own self in terms of the experiences that we bring with us; rather, it encourages the exploration of these experiences recognising that 'the conceptual armoury of our disciplines' is instrumental in the sense that we make of our research.

Ethics

In traditional research activity, it is normal practice to inform those that one is writing about, making a clear statement about intent and anonymity offering these individuals an opportunity to review the content prior to publication. There are two main difficulties with this approach in the context of research by reflexive narrative. Firstly, when writing about our own personal experience of everyday work it is impractical to keep explaining to everyone we come into contact with that we may be writing about them. Besides, this would undoubtedly influence their behaviour, thus challenging the nature of the observations of your research. Moreover, given the uncertain nature of the research, it is not possible to predict what direction it might take at any moment: the process of reflecting on one's own experiences bends back on itself as the theoretical viewpoints are successively developed and refined, based on empirical observations which are themselves altered by the theoretical understanding they are helping to develop. It is a continuous process of forming and being formed at the same time.

In order to overcome this situation in a satisfactory manner I have made it clear through presentation an outline of my work to my immediate work colleagues, explaining that I am undertaking a doctorate through research based around my everyday work experiences. I have also discussed this explicitly with my line manager, explaining the reasons for my approach and keeping him updated as to the direction in which my work is moving. I have also committed to anonymise any individual, corporate and place names that may enable identification of individuals within my research, in compliance with the requirements for ethical approval from the Business School's Ethics Committee.

It could be argued that anonymity is difficult to assure in a large and potentially identifiable organisation such as my current employer. However, the nature of modern aircraft and aircraft parts manufacture is such that there are many first- and second-tier suppliers that manufacture significant proportions of our product, with organisations that mirror each other in terms of size of undertaking and diversity of geographical location. Even if it still were possible to deduce which one of these organisations I was working in at the time of writing, the size and highly capricious nature of our organisation would make identification of the exact person or people I have written about unlikely (there are many hundreds of people doing very similar roles in different functions that change and morph on a regular basis through local and global reorganisation initiatives). The capricious nature of the organisations I write about is not a problem in itself, as it is the generalisable aspects of the examples I give that are of interest to this research.

Thick simplifications

Narrative sense-making as first-order abstractions in the activity of lessons learned within project management: Recognising the importance of phronesis

A consistent theme throughout the course of my research and the four projects that account for the large part of that undertaking has been the impact of power relations and ideology on patterns of human relating in my recent experience of working within project management. I have recounted examples of how what can be seen to be the right thing to do, at a particular point in time, can also be seen as the wrong

thing to do at another point in time, through the influence of the power relations being acted out in the organisations we find ourselves in. These experiences seem contradictory when viewed through the systems lens of the dominant management discourse – which presupposes efficient causality, where the nature of movement is a 'corrective repetition of the past in order to realise an optimal future state' (Stacey 2011: 301). This in turn presupposes an optimal future state that is somehow fixed independently of our experience of it and can be arrived at through reasoned argument that will be universally acknowledged and accepted. This does not reflect my own experience of working in commercial organisations, where what is accepted as right and wrong is subject to the constant churn of power relations played out through the interdependence of the involved actors. In seeking to understand my experiences, I have therefore drawn heavily on authors who have written around the relational nature of power in the social organisations we find ourselves in.

In Project 4, I have argued that this overreliance on understanding our organisations as technically rational systems is detrimental in our current approach to lessons learned activities in project management. These are inadequate in their interpretation of experience as being separate from the activity of experiencing, as they fail to take account of the influence of power relations on those involved in the activity of capturing lessons learned. Nor do they take into account the paradoxical nature on those power relations, which are simultaneously both forming and being formed by the action of undertaking a lessons learned activity.

My contention is that an approach of lessons learned as a first-order, narrative abstraction that I have termed 'thick simplification' enables the reader of the lesson learned to place the account within their own experience through the act of generalising aspects of the lessons learned account within their own particular experience. It is the recognition of this paradoxical relationship between the general and the particular, the need to have both present in order for either to make sense, that distinguishes this approach from others in the contemporary project management literature.

The argument for first-order abstraction narrative sense-making in project management lessons learned

Although, as argued in Project 4, all forms of sense-making necessarily involve abstraction, narrative sense-making can be considered first-order abstraction wherever the interest is in 'the generalising through the identification of categories of experience articulated in narrative and philosophical arguments' (Stacey 2011: 418). This can be contrasted against the abstraction process of the logico-scientific mode of understanding, a kind of second-order abstracting that 'seeks to simplify, standardise and measure, so reducing elaboration, multiple interpretations and mystery' (ibid: 418). It is in the reduction of elaboration, interpretation and mystery that second-order abstracting, so typical of current approaches to lessons learned activities prevalent in project management does a disservice to the learning process. As Schutz (1973) pointed out, it is impossible to understand human conduct while ignoring its intentions, and it is impossible to understand human intentions while ignoring the settings in which they make sense.

Czarniawska (2004: 4) cites this quote from Schutz to illustrate the importance of context in explaining human conduct, and goes on to say that 'contexts have a history, within which both particular deeds and whole histories of individual actors can be and *have* to be situated in order to be intelligible' (ibid: 4, emphasis added). MacIntyre elaborates on the importance of this point with his observation that if we were to describe our experience in terms of sensory description only, 'we would be confronted with not only an uninterpreted, but an uninterpretable world' (MacIntyre 1985: 79). Tsoukas and Hatch (2001) quote Polkinghorne on the importance of narrative with regard to context: 'The narrative scheme serves as a lens through which the apparently independent and disconnected elements of existence are seen as related parts of a whole' (Polkinghorne 1988: 36).

These and other authors argue, as I have in Project 4, that any approach to understanding that is firmly entrenched in first-order systems thinking – where the observer is separated from the observed – take insufficient account of the importance of context. They assume 'an objective reality that is objectively observed by an individual. The assumption [being] that the social world is made up of systems having a purpose, which can be objectively observed and modelled' (Stacey 2011: 201).

Tsoukas and Hatch contrast this understatement of the importance of context (what they refer to as the logico-scientific approach to thinking, where 'propositions or rules connect categories of behaviour to categories of actors and situations') with a 'narrative mode of thinking [which] enlivens and energises the emplotted character and events' (Tsoukas & Hatch 2001: 998). I would associate this logico-scientific approach with what I have described in Project 4 as the deterministic tools and processes of current approaches to lessons learned in project management, which are entrenched in the technical rationality of first-order systems thinking. As Tsoukas and Hatch (2001: 998) comment, 'In narrating, a narrator communicates and captures nuances of events, relationships and purpose that are dropped in the abstraction process that permits categorisation and correlation in the logico-scientific mode'.

Throughout the course of the four projects that constitute the body of this thesis, I have developed a narrative approach to my writing that, to borrow the words of Tsoukas and Hatch, enlivens and energises the emplotted character and events – capturing nuances, relationships and purposes that I would otherwise have dropped in the abstraction process typical of second-order abstraction. Tsoukas and Hatch refer to this as 'a more concrete rendering of causality' – a term that, with its connotation of fixedness, I find slightly at odds with the rest of their paper, but can appreciate in the context of giving a broader view of what was going on enabling the reader to create a more concrete understanding from which to make their own sense. This was my experience of the account of the move of the R&D plateau in Project 2: by explaining the situation within which the meetings took place – the collection of managers attending this important meeting from four corners of Europe – as well as relating the heavy breathing of the head of R&D and the sense that my boss and myself made of this, the reader is equipped to place this experience within their own experience of similar circumstances. As already mentioned, from her own history my supervisor could relate to the people and experiences I described. Without the broader rendering of the narrative account, my supervisor (and others who have similarly commented) would have been restricted to accepting the abstractions and classification that I, the author, had chosen to impose on the account; further explication and understanding of what had happened would have been limited by the sense that I made of it at the time of writing.

It is this broader rendering that a reflective first-order abstraction narrative account can and must bring to lessons learned in project management, if we are to learn from our experiences.

Not only does a first-order narrative account give a broader rendering of causality; it also allows an opening-up of the debate about the sense we are making of what it is that we are doing, in ways that second-order narrative does not. As Thomas (2010: 576) argues, 'the seeking of generalisability can inhibit or even extinguish [the] curiosity and interpretation'. Misak (2010: 392) makes a similar criticism of evidence-based medicine's 'attempts to rid the study of medicine of the subjectivity of individual judgements' – which, she suggests, in its quest for objectivity has 'narrowed its conception of evidence and imposed limits on its enquiry in a way that impedes the search for getting the best answers to our questions… it puts medicine in one of those methodological straightjackets' (ibid: 393).

In Project 4, I give a narrative account of my interview with an engineer, Bob, in which I elaborated a previously unexamined aspect of his experience: how he was able to realise the fix to a long-standing problem with the undercarriage on one of our products. Our interview was conducted as a narrative enquiry, with the emphasis on exploration of themes particular to Bob's experience rather than seeking generalisability that can inhibit or even extinguish the curiosity and interpretation. By continuing this narrative account into the lesson learned, and not separating the lesson learned from the activity of learning it, the author invites the reader of the lessons learned to continue with the explication and contribute to the ongoing understanding.

Rhodes and Brown (2005), reporting on the rapid expansion of narrative approaches in management and organisational theory, propose that narrative has developed as a sophisticated research methodology, representing a move away from what McKinley (2003: 142) described as the 'aperspectival sense of objectivity with the realist ontology that typifies much of organisational science'. Rhodes and Brown (2005: 177) argue that 'rather than viewing organisations as static, homogeneous and consistent entities, narrative approaches demonstrate the processual characteristics of organisations and can render both the paradoxes and complex causal relationships inherent in organisation open to analysis'. It is in this opening-up of analysis that

first-order narrative enhances the opportunity for us to learn lessons from lessons learned activities. Through treating the lessons learned not only as an output from current understanding, but equally as an opening up, as inputs into a potential future understanding.

Current use of narrative in lessons learned

Despite this rapid expansion of narrative approaches in management and organisational theory, and the recognition that narrative stories are to be taken as a credible source of knowledge and 'an important means through which managers acquire knowledge at work' (Rhodes & Brown 2005: 169), contemporary literature on lessons learned in project management appears to remain 'stuck' in the logico-rational approach of understanding. I do not think this impasse results from any lack of awareness of the challenges to this approach. Some authors on project management topics are already writing about concepts associated with complex responsive processes of relating.

Positioning of my research against other research into complexity in project management

Much literature on the topic of complexity in project management refers to the technical complexity of the activity being managed and proposes the rigorous application of tools and techniques to make sense of, and simplify, the problems that present themselves. A number of authors have sought an approach that moves away from research into what should be done or the frequency and or use of traditional project management practices to focus on the social aspects of project management.

In "We're not in Kansas anymore, Toto: Mapping the strange landscape of complexity theory and its relationship to project management" (Cooke-Davies et al 2007), the authors describe what they call the prevalent Cartesian–Newtonian–Enlightenment paradigm from which the practice of project management has emerged. They contrast a number understandings of complexity theory that they claim amount to a challenge to the prevalent paradigm: the various versions of control theory, operations research and systems theory, which are largely normative

and prescriptive (ibid: 50). In this and other papers that were published in connection with the Rethinking Project Management Network,[27] the authors claim that 'a better understanding of *project actuality* – that is, of complex social processes that go on at various levels of project working' (Cicmil et al 2006: 675, emphasis in original) will be beneficial in the theoretical development of project management. This notion of project actuality – described as encompassing the understanding of the lived experience of organisational members in their local project environments (ibid: 676) – accords strongly with my call for recognition of the importance of phronesis in understanding what it is that we are doing as we go about our ordinary everyday business of interacting with each other. Cicmil et al elaborate that this new 'lens' through which to view project management implies that projects are not structures, but social arrangements that have structural properties upon which actors draw in their social interaction (Cooke-Davies et al 2007). This understanding echoes Shaw's view that it is how we devise and make use of tools and techniques – as important props for the drama, rather than as an end in their own right – that is of primary importance in our attempts to understand experience.

In calling for a subjective, first-person reflexive narrative in the normally objective activity of lessons learned , I build on the work of Cooke-Davies et al (2007) and Cicmil and others (2006, 2009) to invoke the need for integrative pragmatic theory and the development of social knowledge and wisdom relevant to the context of project management.

In *Exploring the Complexity of Projects: Implications of Complexity Theory for Project Management Practice* (2009), Cicmil et al undertake a study of complex responsive processes of relating (what they refer to as CRPR). Their study aims to propose a useful description of the landscape of complexity theory and 'explore in depth the potential of the CRPR concept for enhancing the understanding of the complexity of project settings and uncovering issues that cannot be captured by other

[27] Rethinking Project Management was a UK government-funded research network that ran from 2004 to 2006. Its primary aim was to develop a research agenda aimed at extending and enriching mainstream project management ideas in relation to the developing practice.

theoretical frameworks' (Cicmil et al 2009: 2). In their critical discussion of the research outcomes, they

> propose a shift from a conventional instrumental/rational paradigm that underpins the project management field in its many parts, toward studying social processes, conversational, and powers relating as experienced at the micro level of practice, taking account into practitioners' views, interpretations, feelings, meanings and capturing subtle aspects of interactions in project environments that are not readily observable through conventional enquiry. (ibid: 74)

Their research into CRPR and its potential benefit to project management is a continuation of their earlier research into where they see the differences between CRPR and more orthodox approaches to project management. Many of the points they raise resonate with my own experiences of project management, and I would endorse many of the ways they feel CRPR can benefit project management. They describe the aim of their study as twofold, in that it has both a theoretical and a practical component (ibid: 2). It is in this almost taken-for-granted act, which they describe as a 'not surprising aim behind the study', that I would argue their call for a complex responsive processes of relating to understanding project management is already lost. To appeal to theory as separate from practice is to assume a reality that exists outside of our lived experience of whatever it is we are interested in. It seems self-defeating for any author to attempt to make sense of understanding as a complex responsive process of relating from a systems perspective. To propose a shift from a conventional instrumental/rational paradigm toward studying social processes, conversations, and powers relating as experienced while using the conventional instrumental/rational paradigm to propose this shift surely undermines the argument. This strikes me as a common malady of many authors, who attempt to relate non-systems views of organisations in systems terms; it reminds me of my own experience of attempting to share my research insights with colleagues at work. The temptation to collapse 'the many areas of human experience that are paradoxical' (Mowles 2011: 263) into the dualism of if–then causality that aligns with a systems view of understanding reifies the understanding, reducing the complexity of the experience we are interested in.

The necessity of phronesis, not just process

If we are to accept my above argument as to the importance of the subjective involved nature of responsive understanding as opposed to the objective detached view of systems thinking, then this requires us also to take a different view of the value we place on process. The concept of process within systems thinking that can be understood as 'a series of things that are done in order to achieve a particular result',[28] necessarily relies on the notion of efficient causality.

In Project 3, I challenge the process-based rationale for one aspect of the visual management boards – the skills training matrix. I explain how in capturing the actions of the skilled fitter in undertaking the assembly activity, the methods engineer must abstract and translate what he sees – a dynamic four-dimensional temporal activity of movement and effort in time and space carried out by a particular person – into a flat, two-dimensional work instruction that can be understood by people in general. This process of abstraction not only necessarily aggregates and reduces complex human action into simple statements, thus losing granularity in the process; it also, necessarily, translates the instinctive and learnt human action of thought, muscle reaction, coordination, adjustment, balance, discretion; into an engineering language that dictates a rigid series of steps. Later, in Project 3 and again in Project 4, I contend that the mechanism that enables us to translate the abstracted sense-making of processes as embodied in work instructions, flowcharts and guidelines back into human action is the Aristotelian virtue of phronesis.

As I elaborate in Project 4, *phronesis* – commonly defined as practical judgement – is the application of generalised knowledge and understanding into the local particular situation, which in turn changes the understanding of that knowledge as a result of its application. In contrast to the detached view of knowledge prevalent in the dominant discourse of scientific management, I and others contend that we cannot hope to make any sense of *episteme* and *techne* without their practical application into the real world of experience.

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[28] Definition taken from the 2002 edition of the *Oxford English Dictionary*.

This is an approach that not only recognises the importance of context in the sense that we make of our ordinary everyday lived experience, but celebrates the understanding that the sense we make is the sense we make. The only logical operation that allows introduction of any new idea (learning) for it is the only one that does not presuppose that something exists independent of our experience of it. While we have to work within the established habitus of scientific management, we are at the same time changing that habitus; and in a radically social view of organisations, *phronesis* is the vehicle by which we introduce change –it is the contextually situated practical judgement that enables us to both sustain and change the *habitus* of management.

If, as I postulate earlier, in a radically social view of organisations, change occurs from a social point of view, then we need to recognise the importance of phronesis. The 'phronesis that *we* acquire and accumulate [that] is always malleable and corrigible' (Thomas 2010: 578 emphasis added); the *phronesis* that 'reasons about acting in particular situations' (Eikeland 2008: 51) the *phronesis* that *we* acquire as we 'continually negotiate and respond to others who are also intentionally doing the same' (Stacey 2007: 250); the *phronesis* that through first-order narrative 'allows the social scientist to uncover perceptions, experiences and feelings about power, power relations and institutionalised constraints as they are confronted (or not) through social and political engagement' (Flyvbjerg, Landman and Shcram, 2012: 32); in Aristotle's words, the *phronesis* that 'is not concerned with universal truths only; [but] must also take cognisance of particulars, because it is concerned with conduct, and conduct has its sphere in particular circumstances'.[29]

In Project 4, my exploration of the nature of knowing as a reflexive act leads me to argue that in order to be of use, knowledge from lessons learned needs to be presented as an instrument into a new situation, rather than merely an elaboration of a previous situation. For effective and appropriate use of this instrument, the conditions of its original creation need to be understood. The conditions of its original creation being related through a 1st order reflexive narrative, the mechanism by which we use this understanding being phronesis.

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[29] Penguin 2004 edition of *The Nicomanachean Ethics*, p. 154.

Contribution to knowledge

Throughout the course of this thesis, I have demonstrated a significant and original contribution to the knowledge and practice of project management through the introduction of first-order narrative into lessons learned exercises.

I have shown that despite there being an awareness of how an understanding of complex responsive processes of relating can inform the practice of project management, current writing on lessons learned from within project management continues to stress the importance of 'efficient cause' (if–then causality). I have explained how this 'stuckness' may be understood through the concept of *habitus*, the 'structured structures that are predisposed to function as structuring structures' (Bourdieu 1977: 72.), and that this *habitus* creates a predisposition to look for answers, which in turn conditions the requirement for an answer. Thus the need to understand the commercial organisation as an epistemologically predictable rule-obeying endeavour is predicated on the need to understand the organisation as an epistemologically predictable rule-obeying endeavour.

It is against this understanding of what it is that we are doing as we go about our ordinary daily lives together that my research contributes to the knowledge and practice of project management. In proposing a non-systems understanding of the project management practice of lessons learned, I am further extending the invitation of authors such as Cooke-Davis, Cicmil and Flyvbjerg for practising project managers to pay greater attention to quality of patterns of conversation, and relating their own participation in these processes. It is in understanding knowledge not as a fixed outcome at some given point in time, but as ongoing process of understanding – an input into future understanding – that distinguishes my work from that of others in this field.

My contribution to knowledge is that an approach of lessons learned as a first-order, narrative abstraction – which I have termed 'thick simplification' – enables the reader to place the account within their own experience, through the act of generalising aspects of the lessons learned account within their own particular experience. The term 'thick simplification' is an attempt to introduce a paradoxical concept into project management, an environment that eschews paradox as a sign of weak argument. It is the recognition of this paradoxical relationship between the general and the particular, the need to have both present in order for either to make

sense that distinguished this approach from the approaches in contemporary project management literature. This represents a significant and original move away from the current systemic understanding of efficient causality, prevalent in current writings on project management, to a complex responsive process understanding of transformative causality.

Contribution to practice

Throughout the course of the four projects, I have developed a narrative approach to my writing that I argue enlivens and energises the emplotted character and events, capturing nuances, relationships and purposes that otherwise I would have dropped in the abstraction process typical with second-order abstraction. It is this broader rendering of causality, through a reflective first- order abstraction narrative account, that has informed and changed my practice.

Throughout my narratives, I have given examples of how I have taken a first-order narrative approach to managing projects. This approach is continuing to develop and be recognised by others in my place of work that are keen to explore different ways of understanding what it is we are doing in the organisations we find ourselves in. My views on organisational life have been sought by several people who have read my work, interested to know more about what I am researching; I have also been invited to give a number of talks and presentations to interested groups within Goxhay on the topic of complex responsive processes of relating in general, as well as on narrative approaches to lessons learned.

A further example of how my research has influenced my practice is a change project that I was undertaking during the writing of Project 3, the objective of which was to reduce the reporting burden within the R&D perimeter. In an early draft of Project 3, I recount how I was strongly urged to adopt an orthodox approach to managing this change project by undertaking an evaluation on a small area of the R&D organisation to establish an 'AS-IS' state and then propose an improved 'TO-BE' state by extrapolating the results from the small evaluation across the entire population of R&D to establish the way forward (while the original narrative did not make it into the final version of Project 3, my mention of a senior executive's insistence that I should synthesise for them to a greater degree was related to this project). I resisted this approach, as I felt that introducing another improvement plan

from a singular viewpoint would not help to fix a problem that I perceived as arising from the interlacing of many individual plans (the reporting procedures of each department within the R&D community), each of which may also have had the aim of minimising reporting. I proposed taking a more subjective and discursive approach to managing this change project through engaging in conversation with a large cross-section of members of the R&D community to build a thicker description (in the form of a collective narrative) of the issues surrounding reporting than the simple calculative extrapolation would allow.

My argument was to that we should use the AS-IS and TO-BE analysis as objects for conversation within the R&D community, not as an end in themselves but as inputs into the final solution. This allowed my approach to be recognised within the habitus of the management discourse (I had goals and would identify things that needed to be changed) while recognising the emergent nature of whatever outcome ensued. The change project is now recognised as being successful not only for having delivered over a 30% reduction in the original reporting burden, but also for having taken a fresh, narrative approach to managing a change project.

A further contribution to knowledge and practice is that in recognising the importance of *phronesis* in lessons learned in project management, I also highlight that the distinction between knowledge and practice is artificial; and that *episteme* and *techne* cannot exist independently from the context in which they are enacted. By not separating the lesson learned from the activity of learning it, and opening the account so that the reader can continue with the explication and contribute to the ongoing understanding, we 'continually negotiate and respond to others who are also intentionally doing the same' (Stacey 2007: 250) through 'focusing attention directly on patterns of human relating, and asking what kind of power relations, ideology and communication they reflect' (ibid: 266). It is here, in the live and lived moment of social interaction that incorporates the fixed notion of technical rationality, that we can attempt to truly learn from our experiences. By allowing the narrative to 'unfold from the diverse, complex and sometimes conflicting stories that people, documents, and other evidence tell them' (Flyvbjerg 2001: 86), we avoid the risk of skipping the minutiae, extracting the general from the particular, and then setting the particular aside as detail, illustration, background or qualification – 'an approach that leaves us helpless in the face of the very difference we need to explore' (Geertz 1995: 40).

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