

A New Philosophy of Project Management

*An investigation into the prevalence of modern
project management by means of an
evolutionary framework*

By

Stephen Jonathan Whitty

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The University of Queensland in May 2009

School of Information Technology and Electrical Engineering

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“Everything is what it is because it got that way”

(Thompson, 1992)

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Declaration

This thesis is composed of my original work, and contains no material previously published or written by another person except where due reference has been made in the text. I have clearly stated the contribution by others to jointly-authored works that I have included in my thesis.

I have clearly stated the contribution of others to my thesis as a whole, including statistical assistance, survey design, data analysis, significant technical procedures, professional editorial advice, and any other original research work used or reported in my thesis. The content of my thesis is the result of work I have carried out since the commencement of my research higher degree candidature and does not include a substantial part of work that has been submitted to qualify for the award of any other degree or diploma in any university or other tertiary institution. I have clearly stated which parts of my thesis, if any, have been submitted to qualify for another award.

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Statement of Contributions to Jointly Authored Works Contained in the Thesis

This thesis incorporates two joint publications, specifically publication 2 and 3. I was principally responsible for the concept, design, review, analysis and interpretation of previous research findings, and drafting and writing. My principle advisor assisted in the final reviewing process.

Candidate: Stephen Jonathan Whitty _____

Principal Advisor: Dr Mark F. Schulz _____

Published Works by the Author Incorporated into the Thesis

1. Whitty, S.J. (2005). A memetic paradigm of project management. *International Journal of Project Management*, 23 (8) 575-583 – Incorporated as Chapter 3
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Additional Published Works by the Author Relevant to the Thesis but not Forming Part of it

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Abstract

Why are projects and project management so cool when managing projects is so problematic? This question is at the heart of this thesis which sets out to find answer using an evolutionary approach to the discipline. A conceptual evolutionary framework for investigation is developed, the heredity of the ideas and concepts that underpin project management are traced and their impact analysed, and a conceptual model of the project management environment is developed to demonstrate how individuals and corporations gain survival benefits from aspects of project management. To further investigate the evolutionary mechanisms that take place in the project management environment, the result of a phenomenological study are presented which show that various project management artefacts emotionally affect individuals, and that those individuals also use the emotional affects to emotionally manipulate others.

The conclusions drawn from this investigation are that modern project management delivers cultural survival benefits to individuals and corporations, and its various behaviours and concepts are encoded genetically and memetically across our genes and Western culture. The memetic framework for project management contributes to the field by providing a means to debunk the ‘sacred cows’ of project management; it brings new understandings of how the various ideals, tools and concepts of project management deliver benefits, and to whom; and it provides a agenda for evidence based practice and the democratisation of work where project management is inculcated into the various work domains such as Health, Art, Agriculture, Commerce, etc, rather than a standalone discipline.

Keywords

Project Management, Evolutionary Psychology, Memetics, Emotion

Australian and New Zealand Standard Research Classifications (ANZSRC)

1799 Other Psychology and Cognitive Science 50%, 9104 Management and Productivity 30%, 2202 History and Philosophy of Specific Fields 20%

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Synopsis

If project management is not delivering for corporations, why is it so prevalent, particularly in Western corporate society? A qualified answer to this question is conspicuously absent from the project management literature. However, my research has shown that there are various intriguing reasons why project management is so prevalent, but one needs to look through the lens of evolution to discover them.

My thesis comprises journal and conference proceedings that have been published (and in some cases not yet published) over the last 5 years of my research into project management. This practice of publishing before the thesis is submitted is strongly encouraged at the University of Queensland as it points to the academic rigour of the research through the blind peer review process. My thesis is divided into 8 Chapters with short preambles to Chapters 3 to 6 where I reflect on what I regard to be the purpose, underlying philosophy, and important aspects of that particular piece. I also discuss how the material has added or contributed to the literature and been received by the scholarly / practitioner community, and how it connects to the thesis as a whole.

Generally speaking my methods of research are founded on the epistemological framework of co-evolution (section 2.9.3.5) which regards human values, preferences, artefacts and behaviours as evolutionary adaptation in the same way one would regard bipedal walking. Following the review of evolutionary theory and its application to social phenomenon chapter 2, chapter 3 develops a memetic framework by applying evolutionary theory to the contemporary phenomenon of project management. Chapter 4 then applies this framework to the origins of modern project management. Finally, chapter 5 reinterprets

previous empirical findings in the light of this framework, and chapter 6 details an experiment that sets out test some of the assertions of chapter 5. To follow is a more detailed summary of the various chapters.

Chapter 1- Introduction begins with the circumstances of the project management paradox which outlines the apparent contradictory nature of the prevalence of projects and project management practices. The underlying premise of which is that projects are “cool” (Grabher, 2004) and so is project management (Pells, 2007). However, managing projects is problematic. I go on to qualify my reasoning for this state of affairs by presenting the case that this situation it is not really a contradiction, but that its contradictory nature can be explained by taking an evolutionary approach to the problem.

Chapter 2 – Literature review considers what knowledge and ideas have been established on the topic of evolution in general, and more particularly on its application to the prevalence of cultural practices and artefacts such as project management. I briefly overview the literature relating to project success and failure and management fads and fashions before devoting the rest of the literature review to the principles of biological and cultural evolution in the context of my research. The main focus of this chapter is to lay down the foundational evidence to support my argument that we humans are built (by natural selection) to manage projects, and that modern project management is encoded genetically and memetically across our genes and Western culture.

Chapter 3 – Applying evolution to project management, is principally an incorporation of my published paper ‘A memetic paradigm of project management’ (Whitty, 2005) and is the first application of memetic principles to the project management discipline. I argue that

the current paradigm towards project management research cannot help us understand the true nature of projects and that a more critical approach, which considers projects to be a human construct, about a collection of feelings, expectations and sensations, cleverly conjured up by the human brain might be a more fruitful way of looking at why projects exist and behave as they do. I suggest that the discipline of project management should be viewed from an evolutionary point of view as a collection of related memes which propagate as a group (memeplex) by bootstrapping themselves to our Western cultural values. The main body of this chapter is focused on developing a memetic framework for project management that embraces the following 6 areas (1) project management: project management is self-serving and evolves for its own good without serving a higher purpose; (2) bodies of knowledge: the popular form of project management (the PMBOK) evolves to increase the maximum number of projects and is not a conscious expert design, thus it favours fuzzy definitions and positivist ideas over hard, falsifiable facts; (3) project managers/teams: the role of the project manager and team is created by the memes of project management and not consciously crafted to implement a strategy; (4) the profession: is not consciously constructed and skilfully designed but evolved mainly to spread project management memes; (5) knowledge creation: knowledge is not created by social systems (e.g. scholars and practitioners) but knowledge processes (memes) construct social systems; and (6) project organisations: are not simply human constructs but creations to replicate project management memes.

The chapter concludes with two recommendations for research practice (1) benchmark ideas and develop best evidence based practices, thus spreading project management memes more quickly, and (2) supposing the first recommendation is implemented, unify the bodies of knowledge letting only the fittest memes survive.

Chapter 4 - A phylogeny of project management, is principally an incorporation of my published paper ‘The impact of Puritan ideology of aspects of project management’ (Whitty & Schulz, 2007). It builds upon the memetic approach to project management as presented in Chapter 3, and attempts to understand today’s popular project management by examining its phylogeny. That is to say, it traces the evolutionary development of the ethos of project management from its Puritan origins. In short, it illustrates the influential memes that drive modern project management and follows them through to a natural conclusion.

In this chapter I present the argument that contrary to traditional thinking, the essence of today’s prevalent Western project management has developed against a background of Puritanical elements (memes) and the Puritanism descendants of Liberalism, Newtonianism, and Taylorism, which are favourable to the development of capitalism. Furthermore, I suggest that the classical Puritan roots such as doctrinal supremacy, work ethic, and depravity continue to impact in a conservative way on how the project management discipline evolves; limiting its development, oversimplifying the process of managing people, and consequentially thwarting nonconformists.

I conclude by suggesting that through no fault of their own, scholars and practitioners alike are being driven by powerful memes that not only drive their behaviour but create the very fabric of their society, and before we can make progress in the discipline we must acknowledge that our past and present actions have been determined by them.

Chapter 5 – Where Projects and Project Management Thrive, is principally an incorporation of my paper (under review) ‘Projectistan: where projects and project management thrive, and appearance trumps productivity’, which is itself a revised version of

the earlier previously published international conference paper ‘The PMBOK Code’ (Whitty & Schulz, 2006).

In this chapter I progress the argument presented in Chapter 4 that the social conformity behaviour of project management scholars and practitioners is being driven by powerful memes. I begin by presenting the case that the popular PMBOK® Guide version of project management is prevalent in the West because it is a well adapted collection of memes that are bootstrapped to cultural values. I draw on empirical evidence from a variety of disciplines and considers how noteworthy Western memes drive a particular self-sustaining cultural environment I call Projectistan where the concept of projects and project management thrive. I establish how cultural selection takes place in this ‘project friendly’ environment by using the metaphor of the theatrical stage, and show the role impression management plays in creating a competitive advantage for practitioners, and how it reduces anxiety in project stakeholders.

I suggest that the social norms and mores of Projectistan are born out of the all pervasive Corporation meme and the popular PMBOK version of project management. Those who embrace the ideas of Projectistan (e.g. individuals and/or organisations) can gain a benefit or competitive advantage from doing so. More interestingly, on a practical level that consumes less energy, a similar benefit can be gained by presenting the image that one embodies the ideal that are so valued in Projectistan, one does not necessarily need to actually believe or practice them in a real sense.

A principal claim of this chapter is that popular project management is more about appearance than productivity, and that project managers are hostage to their environment.

Finally it argues that as project management is currently evolving for its own benefit, if left unchecked it will eventually fractionalise the workforce to the extent that corporations will ultimately reap more benefit from it than individual people.

Chapter 6 – Why project management prevails, is principally an incorporation of my published paper “Project management artefacts and the emotions they evoke”. Whereas the previous chapter focused on how the socio-cultural mechanism of social conformity supports the survival of popular project management, this chapter investigates the physiological mechanisms.

By illustrating the findings of a phenomenological study, this chapter suggest that the prevalence of project management in the Western corporate environment is also due to the condition that project managers obtain an emotional fix from aspects of the project management experience. That is to say that project managers continue to engage in the project experience because they get enjoyment from significant parts of it. Project managers also obtain benefits by using the emotional affects of various artefacts and aspects of project management to emotionally manipulate their environment (e.g. placating and misdirecting senior management and project stakeholders).

The discussion in Chapter 7 is organised around four themes. The first two, evolution and existentialism, reflect the themes from Chapter 1, and considers how we are hardwired and therefore drawn to aspects of project work. I expand the topic of ‘thinking tools’ and suggest that we better understand and appreciate them, and develop the discussion from Chapter 6 on abstracted forms in project management to show how limited our understanding of work is. On the topic of existentialism, I point out that projects and project management is the new way of understanding and being at work. However, we must be careful as these

concepts replicate and evolve with little regard to humans, and as I state in Section (5.5.2), these concepts might ultimately favour the corporations.

The last two themes in the discussion deals with the ‘so what?’ factor of my thesis, which I have ranged under the developmental themes of disorientation & confusion, and liberation, as these are usually the next phases that occur after one has come to terms with an evolutionary and existential view of human behaviour. Disorientation & confusion affirms my argument of how we have misunderstood and misinterpreted project management behaviour by highlighting how some of our project management practices are still very 19th Century and how we should open our eyes to Projectistan. Finally, liberation comprises my call for action, how we can look at project management anew and ultimately provide a justification for a democratised workforce.

Chapter 8 includes my conclusions and their possible implications, and points to how I think future research in this field could develop.

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List of Abbreviations used in the thesis

AIPM	Australian Institute of Project Management
APM	Association for Project Management
IPMA	International Project Management Association
IM	Impression Management
OS-PMBok	Open Source Project Management Body of Knowledge
PM	Project Management
PMs	Project Managers
PMBok or PMBOK	Project Management Body of Knowledge
PMBOK® Guide	Guide to the Project Management Body of Knowledge
PMI	Project Management Institute
WBS	Work Breakdown Structure

Chapter 1: Introduction

I believe it is time that we looked at project management through Charles Darwin's theory of evolution. It is time to talk about an instinct for project management or a concert of instincts that go together to make up project management as we know it today. I think this is the best way to start over again and look at project management from the beginning.

For years the prevailing zeitgeist in organisations and at academic institutions has been that project management is a socially constructed and consciously applied strategic tool. Generations of scholars and practitioners have been taught this as though it is true. We know the reasons why projects fail and why they succeed (Morris & Hough, 1988). We know how the various project management methodologies work (Charvat, 2003), and that if projects fail it's not that the methodology was wrong, rather that the methodology was wrongly implemented (Gheorghiu, 2006). Or do we really know these things?

What I have come to understand over the years is that with regard to project management we have been duped. I have learnt, through experience and with insight into real projects, that a project can implement all ten reasons for failure and still succeed. I have also seen projects implement the top ten reasons for success and still fail, and that methodologies applied as 'per book' can cause more disruption than they are worth.

My thesis was inspired by an article in *The Economist* (Economist, 2005) which looks at how construction, development, and technology projects continually run over their schedule and budget yet project management is more popular than ever. The inspiring by-line of the article read "Companies are increasingly keen on projects. Why, when so many fail?"

Simply put, despite decades of research and experience, project management is not living up to the expectations of those who purchase it, yet it still sells like hotcakes! No matter how one views project management one cannot deny that it is prevalent and continues to increase across all business sectors and geographical regions. Corporations today spend more on project management training than ever before (Kerzner, 1998a), and suggest that projects are a vital contributor to future business success and the key enabler of business change (PIPC, 2005). Moreover, the growth of the major project management institutions such as the Project Management Institute (PMI), which is the world's largest project management professional association with some 238,000 members (Project Management Institute, 2007), is noteworthy. Rather contradictory to all this, many corporations report that project failure is commonplace (Evans, 2005; KPMG, 2003; PIPC, 2005; The Standish Group, 2001). Furthermore, the humour amongst project managers reflects the difficulty practitioners have in matching their expected professional identity with their actual everyday performance (Hodgson, 2005).

This seemingly paradoxical condition of project management goes to the heart of the overarching question of my thesis, which is;

If project management is not delivering for corporations, why is it so prevalent, particularly in Western corporate society?

As my thesis suggests, answers to this question will not be found by using more of the current research approach to project management which can be characterised by (Project Management Research Program Team, 2001; Slevin, Cleland, & Pinto, 2002). My thesis argues that even though in the main project management does not enable corporations to deliver projects more effectively, project management does, in evolutionary terms, provide

survival benefits to corporations, project managers, and other social structures that are aligned with it.

My working hypothesis is evolutionary in nature and addresses the prevalence or fitness of project management in the West by arguing that the human behaviour one would broadly call project management is brought about by the replicating behaviour of particular memes in the form of ideologies, concepts, and artefacts, and these memes will necessarily surface in Western (Jewish, Christian, and Islamic) societies courtesy of selection pressures. Furthermore, that human emotions form part of the replicating mechanism for these memes, as individuals (e.g. project managers) obtain an emotional fix from aspects of the project management experience, and the emotional affects of various project management artefacts are used by individuals and organisations to manipulate their environment to increase their competitive advantage. In short, project management provides cultural benefits to those in the Western corporate environment.

In this introductory chapter I will present the case for an evolutionary mode of enquiry into matters pertaining to project management. I point out how we need to move beyond Newton's legacy which dominates the project management literature to a paradigm that embraces the richness and complexity of the project environment we find ourselves presented with. I am not the first to suggest a new paradigm that embraces complex behaviour in project management (see (Shenhar, 2001; Williams, 1999; Xia & Lee, 2004). However, I am the first to propose a cultural evolution or memetic approach to the discipline.

1.1 Newton's Legacy

Over the last 200 years or so, scientific researchers have in the main removed themselves from the world at large and entered laboratories to look at small pieces of the world that have been isolated and controlled. If lab work is not feasible then statistical analysis is used to process observations. This reduces the effects of noise or error from the data.

Judging by the tools we see project managers using, the project management world is composed of simple geometric forms such as triangles, circles, and straight lines. As I discuss in Section 7.3.1.3, the simple geometric forms of Figure 1 are instantly recognisable to any project manager. Indeed these forms are a reflection of how we come to understand work.

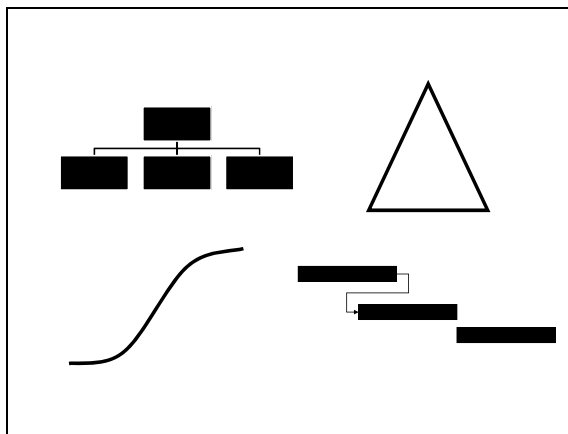


Figure 1: Simple geometric forms of PM

The ancient Greek geometer Euclid described the world in simple forms. Descartes use these forms in developing his Cartesian geometry, and Newton used Cartesian geometry in his great discoveries¹. Within the scientific community this way of seeing has become

¹ Chapter 4 contains a discussion on the impact of Descartes and Newton on project management thinking.

second nature. Newton's legacy is deeply embedded in our education system which continues to teach us to search for clear patterns and relationships.

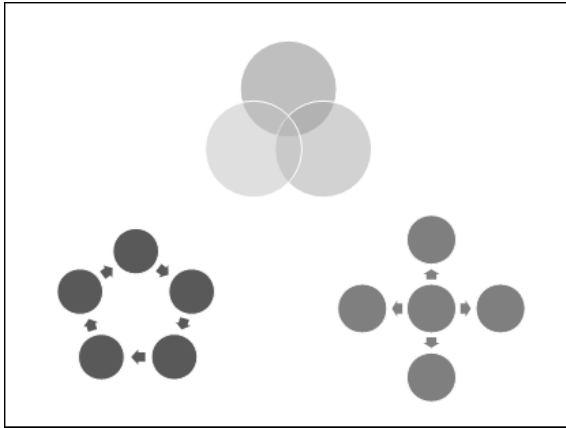


Figure 2: Typical PM conceptual diagrams

Popular books and courses on project management use similar diagrams to those in Figure 2 to explain project management concepts. The project management literature is highly normative (Sydow, Lindkvist, & DeFillippi, 2004). In the main, scholars and practitioners look beneath complexity, to find complete geometric forms. They try to find order under the superficial messiness.

For years engineers have straightened out our messiness. They straighten rivers, level hills, regulate plant growth, and generally pave over things to give our world a Newtonian look. In order to understand certain phenomena we reduce things to their smallest parts. This approach works well if you are trying to understand how a bridge or computer chip works, but not so when you are trying to understand human behaviour. And if one thing could be said about project management, it's that it involves a lot of complex human behaviour, and our research approach to the discipline must embrace this if the discipline is to move forward in a progressive sense.

1.2 Complexity

We are used to thinking with the ‘hub and spoke network’ which offers the leader all control over details. Every orchestra must have a conductor? But this is simply not true. The 100 billion brain cells operating in each human brain has no master ‘conductor’ cell. Similarly, the 10,000 pacemaker cells that tell the rest of the human heart when to beat need no single cell in charge. These are just two examples of self organising behaviour in our own biology, and are examples of a natural phenomenon of complex systems called synchronicity. At the cultural level, individuals also interact with each other in some sort of complicated way and patterns of behaviour emerge. I suggest one such behaviour is project management.

A complex system is a system formed out of many components whose behaviour is emergent. That is to say that the behaviour of a complex system cannot be simply inferred from the behaviour of its components (Bar-Yam, 2003). Examples of complex systems include human civilisation, governments, the human body (physiological), a person (psychosocial), the brain, the ecosystem of the world and sub-world ecosystems, the spread of infectious disease and infectious ideas (Bak, 1997; Bar-Yam, 2003).

Complexity theory has been liberally applied over the last decade in many disciplines in an attempt to solve complex problems (Ziemelis, 2001). However, traditional methods are often the only option humans have to marshal some sort of control of a complex system, and these methods predominate in the project management literature (Hodgson & Cicmil, 2006), with the exception of a few (see (Baccarini, 1996; Cicmil & Marshall, 2005; Cooke-Davies, Cicmil, Crawford, & Richardson, 2007; Jaafari, 2003; Maylor, 2007; Shenhar, 2001; Williams, 1999; Xia & Lee, 2004)) who have attempted to define complexity in the context

of project management. In addition to this, it is notable that projects are socially constructed entities (Cicmil, Williams, Thomas, & Hodgson, 2006), and so can be described as complex adaptive systems (Harkema, 2003) which are necessarily subject to the mechanism of evolution.

1.3 An evolutionary approach

As I will demonstrate, an evolutionary approach has enabled me to reframe current ways of thinking about various aspects of project management, and present the case that some project management concepts are popular not because they are intrinsically right, truthful, useful, or lead to increased productivity, but because they have survived cultural selection pressures and they do this by bootstrapping themselves to cultural values and evoking particular emotions.

My thesis embraces evolution and existentialism, both of which contradict certain traditional assumptions about the nature of life and the human experience. Evolutionary theory argues that species change over time. In the struggle to survive, only those species that are optimally adapted to their environments survive while others perish. Therefore species are, in a way, required to change both their physical and behavioural characteristics in order to become better adapted to their environment.

Evolutionary psychology and sociology attempt to understand the human mind, human behaviour, and human society/culture in terms of the evolutionary pressures that shaped them. The evolutionary approach to human behaviour seeks to understand the complex interactions of brain, behaviour and environment, and this thesis will draw on theoretical and empirical research from a range of fields including behavioural biology, psychology,

sociology, neuroscience, anthropology, and more recently memetics (the study of how ideas and culture spreads).

Evolution asserts that all psychological processes exist in part to influence behaviour. This influence is mainly benign and adaptive. For example, if the total net effect of emotion were to cause behaviours that were maladaptive, i.e. by reducing survival and reproduction, then natural selection would likely have phased emotion out (Baumeister, Vohs, DeWall, & Zhang, 2007; Vohs, Baumeister, & Loewenstein, 2007).

Emotion plays a large part in my thesis. Rather than the traditional view that emotion directly causes behaviour (e.g. fear stimulates flight, thereby promoting survival) emotion is more appropriately considered a feedback system whose influence on behaviour is typically indirect (Baumeister et al., 2007). This feedback process stimulates a retrospective appraisal of actions and is consistent with existential thinking.

Compatible with evolutionary thinking is existentialism, the central tenet of which is that existence precedes essence (meaning). Existentialism proposes that humans are born or thrown into a social world that has already been socially defined for them by other humans. That is to say that how one makes sense of the world is defined or shaped by the minds of those who came before, as the meanings and values of previous generations are emotionally embodied or encoded in material culture by means of all forms of artefacts – from simple line drawings to Cathedrals. Furthermore, existentialism proposes that humans define themselves in terms of who they become as their lives are played out in response to the challenges posed by existence in the world. As my thesis contends, project managers invent and reinvent (adapt) themselves during their struggle to survive.

If properly embraced, all-inclusive evolutionary thinking, which embraces biology and culture, makes liberating changes to how one comes to understand and consider human behaviour. A major plank of this way of thinking is that all human behaviour, including emotion and communication, must be considered to be adaptations that have no intrinsic meaning or purpose other than those ascribed to them existentially by humans. That is to say that meaning and purpose do not exist in any real tangible sense; however, imagining or believing that they exist does drive behaviour which may prove to be beneficial. An example of this would be the metaphor of an invisible cord which is often used by teachers of ballet to correct the posture of a dancer. The dancer is told to imagine an invisible cord running up through their body, from their toes, out through the top of their head, and up to the sky. Consequently, the dancer's behaviour is changed and their posture is considerably improved. However, the crucial point is that both teacher and dancer know that the cord does not really exist. The invisible cord is merely a 'thinking tool', a concept I explain in Section (2.7.9), which when used produces behaviour that proves, in this instance, to be beneficial to the dancer and the teacher. As my thesis will show, project management is another type of thinking tool, the benefits of which are not so easily recognised or attributed unless one views the Western corporate environment through the lens of evolution.

1.4 Rethinking project management in the light of evolution

As the literature review in Chapter 2 shows, evolutionary thinking is still rather radical when compared to the mainstream disciplines of psychology and sociology of today, which still appear to ask for a special exemption for humans. Dennett (1995) calls evolution "Darwin's Dangerous Idea" because it was such a monumental shift in the way people would see the world. Evolutionary thinking requires one to invert the traditional top down or

trickledown approach to human social structures. Traditional structures are considered with meaning and purpose at the top, with design, structure and artefact below. Evolutionary thinking requires us to invert this structure with a bottom up or bubble-up approach that argues that as social structures and artefacts emerge, the human brain attributes meaning, purpose, and design to them.

This last sentence is essentially what my thesis is about. My thesis applies evolutionary thinking to the phenomena of project management. I argue that human social structures and artefacts (e.g. organisations and project management processes and tools) emerge as a consequence of the process of biological and cultural selection, and these have been attributed meaning and purpose by the human brain which consequentially further drives behaviour.

In the next Chapter I review the major pieces of literature that illustrate this inversion of the traditional trickledown thinking, and how it provides a method of enquiry into the phenomenon of project management behaviour. But first, let me attempt to summarise Darwin's essentially simple algorithm for natural selection which is the underlying premise for my research.

If organisms vary at all, and if because of finite resources there is a severe struggle for life, and furthermore if variations useful to organisms do occur (i.e. the differences between individuals is not neutral and some variations do provide a benefit), then these individuals will have the best chance of being preserved in the struggle for life. From the strong principle of inheritance these individuals will tend to produce offspring that have characteristics which are more like their parents than

they are like their parent's rivals for these finite resources. If these conditions are met, there will be a gradual refinement / improvement of these characteristics - a principle of preservation where improvements are accumulated. For the sake of brevity this principle of gradual refinement is called natural selection (Darwin, 1890).

This principle is not hard to understand. However, many still find it hard to accept, particularly with regard to humans and their culture. The topic of evolution has a chequered past. Many have held various contrasting perspectives and viewpoints on the subject. On the one hand, it has liberated us from the bonds of religious doctrine and saved millions of lives by advancing medical research. On the other, by being misconstrued it has been used as a basis to incite racial hatred and discrimination and almost plunged us back into the dark ages. A new philosophy for project management will use evolution to liberate all practitioners.

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Chapter 2: Literature Review

2.1 Introduction

The intention of this chapter is to convey what knowledge and ideas have been established on the topic of evolution in general, and more particularly on its application to the prevalence of cultural practices and artefacts such as project management.

I begin with an overview of the current literature that addresses the evolution of modern management in general and the concept of a project and project management in particular, with specific attention drawn to some of the more popular artefacts of modern project management. The literature takes a traditional trickledown approach to the project management phenomena and shows how we have attempted to reconcile the difference between the prevalence and popularity of project management with its poor track record to deliver projects by altering with the ways and means by which we measure project success. Furthermore, I overview the literature that pertains to fads and fashion in the context of management disciplines and show how some have already begun to approach this phenomena from an evolutionary point of view by computer modelling. No empirical research has been done.

The main body of this chapter is devoted to evolutionary concepts, the principles of which are core to my thesis. I particularly focus on the principle of co-evolution and attempt to highlight the holistic qualities of biology and culture. I present the case that they are essentially manifestations of the same thing by considering the interconnectedness of biology, emotion, gesture, and artefacts, and how complex

behaviour can be encoded across them. Next I focus on the chequered past of cultural evolution and how it has been misunderstood and misused. I believe it is necessary to understand this body of literature as it goes to the reasons why an evolutionary approach to project management research has not been previously applied. Finally I illustrate how cultural evolution currently informs research in the social sciences.

As Chapters 3 to 6 comprises self-contained journal papers, I will leave it to those chapters to present a more concise review of the literature pertaining to their topic.

2.2 Evolution of modern management

The story of the modern manager begins in America at the beginning of the 20th century as businesses expanded into complex corporations. As corporations became larger and more complex, so did the ranks of middle management. At that time there were possibly three career tracks for upper level and senior managers (Jacoby, 2004).

- To come up through the ranks of the organisation
- To come from engineering as there was a boom in engineering education and graduates in engineering schools made the transition into management
- To have attended some undergraduate college and majored in business.

This was the era of ‘the company man’ as most managers at this time tended to stay in the same company, or at least stay within the same industry (Jacoby, 2004). One of the strengths of this behaviour is that people obtained domain knowledge (Sennett, 2006).

Professional managers run businesses today. But it has long been argued that we should return to the days of where managers of businesses had some domain knowledge (Hopper & Hopper, 2007). That is to say that to run an engineering business, one doesn't need to be an engineer, but one does need to know a lot about engineering. At some point a shift from domain to discipline took place. To find out how this shift was made it is necessary to understand a history of management education which can be divided up into three eras (Jacoby, 2004).

- The earliest business schools in the United States such as the University of Pennsylvania and the Harvard business School all had curricular that were extremely engineering orientated and based on ideas from industrial engineering at that time. It was about a systematic method of management and coordination.
- Later on from the 1930s to the 1950s, other subjects were introduced such as personnel psychology, human resources management, and marketing. A lot of what was taught was practical knowledge as there was not a lot of research being done, and business education did not have a very high status on University campuses.
- In the late 1950s, MBA curricular were revamped and business schools increased the amount of research being done. To that end, business schools took a more rigorous approach to management research and directed that research should be founded on the principles of economics, statistics, and operations research which could be considered to be a form of applied engineering, a precursor to project management. These principles were

applied to discipline areas such as accounting, finance, and marketing, which made them less practical and more research orientated.

A by-product of this last era is that whilst intellectual output increased, the relevance of research to companies diminished (Harmon, 2006). Another by-product of this behaviour was that managers became more specialised and more intellectualise than they had previously been (Jacoby, 2004). Rather than being ‘a jack of all company trades’, increasingly managers saw themselves as a marketing or finance person. Moreover, these new intellectual managers had greater career mobility because a detailed knowledge of one's company business was not necessary, and it was easy to move from company to company and climb the corporate ladder at greater speed than before (Dewhirst, 1991). Simply put, the modern MBA structure that came from America is based around the idea of teaching engineers general business skills, and this ‘disciplined’ management thinking was further fuelled by the rise of management consulting firms (Hilmer, 1985).

The two key features of the modern professional manager are mobility and specialisation (Dewhirst, 1991). They are no longer generalists, rather specialists in marketing, personnel, finance. Many project managers and their professional institutions regard themselves as specialists (Hodgson, 2002). However, other management disciplines have yet to recognise this (Morris, Crawford, Hodgson, Shepherd, & Thomas, 2006). As part of the evolution of the specialist, there has been a knowledge trade off, where previously the managers’ knowledge was about a single company or industry sector vs. today's situation, where managers’ knowledge is about their specialty with very

little understanding of their industry sector or the particularities of the company and its customers (Sennett, 2006).

The growth of the short-term institutional investors has put more pressure on corporations to improve their share price (Sennett, 2006), and this has driven senior management to be recruited from finance rather than engineering or law. Consequentially businesses have been reconceptualised as a collection of numbers or financial assets, and this new breed of senior managers understood how financial markets worked and could co-operate with shareholders to improve the rate of return on the company. This situation laid the foundation for short-termism where both manager and investor tenure was short (Sennett, 2006).

In the 1990s the West was in the era of strategy, and project management was seen as strategic (Fulmer, 2000). Today, we are in the era of finance (Fontela, 1998), and all project managers are expected to view the progress of their projects in terms of its Earned Value (Kerzner, 2003).

2.3 Project and project management

The word 'project' derives from the Latin 'pro' and 'jacere' (Hoad, 1996). 'Pro' in Latin means "before", "forward" or "for". As a prefix it can also mean "front", "in front of", or "earlier than". So if one proceeds someone, one goes before them. 'Jec' or 'jac' comes from 'jacere', the Latin verb meaning "throw" or "hurl". So to eject something is to throw it out. Therefore, the word 'project' originally involved the physical movement of throwing a physical object forward. One might project one's jaw in defiance, or project

an arrow or bolder. The sense that ‘project’ originally pertained to physical movement of a physical object has eroded since the middle ages. It is quite common that verbs involving movement turn into markers of the future. For example, ‘going to’ originally involved the physical movement of someone going somewhere (Perez, 2003). Today, ‘going to’ is not so much commonly used to describe someone moving on a course in physical space, but in time towards some point in the future. The word ‘project’ is more commonly understood to mean “an enterprise carefully planned to achieve a particular aim”, “a proposed or planned undertaking” (Soanes & Stevenson, 2004), and “a temporary endeavour undertaken to create a unique product, service, or result” (Project Management Institute, 2006). ‘Project’ is today very much a future expression.

Project management was formally recognized in the 1950s as a distinct discipline arising from the broader discipline of management, and it is recognized to be primarily concerned with the planning organizing and management of resources to bring about the successful completion of a project (Cleland & Gareis, 2006). A significant challenge for the project manager is to achieve the goals and objectives of the project (Mantel, Meredith, Shafer, & Sutton, 2001) whilst managing the constraints of the so called “iron triangle” of time, cost, and quality (Atkinson, 1999).

2.4 Abstractions in project management,

Abstractions appear to play an important role in the management of project constraints. As mentioned in Section 1.1, simple Euclidian diagrams are used extensively in modern project management writing, four of which are the Gantt chart, the Iron Triangle, the Project S-Curve, and the Work Breakdown Structure (WBS).

2.4.1 Gantt chart

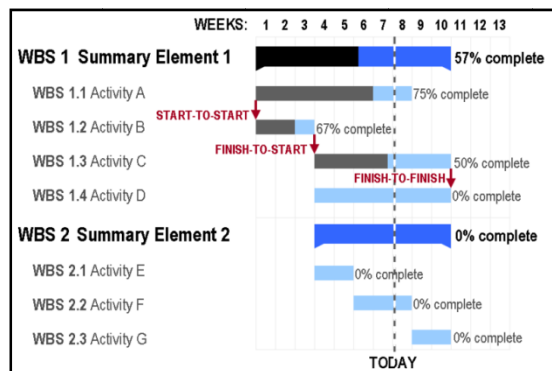


Figure 3: A Gantt chart

The Gantt chart in Figure 3 is an abstraction. The horizontal bars that represent each task on a modern Gantt chart are abstracted versions of the Adamiecki vertical paper strips, which no doubt were also abstractions. It was finally Henry Gantt who lent his name to the Gantt chart. He popularised it by showing its application, but it was the Polish man Karol Adamiecki (1866-1933) who developed the forerunner of the Gantt chart. Interestingly, Adamiecki developed what he called a Theory of Work Harmonization which centred around a form of graphical analysis called the "harmonogram" (Marsh, 1975). The harmonogram consisted of a tableau of detachable paper strips, each hanging vertically and held in place with clamps at both ends. There was one strip for each operation in the production process. Each strip was labelled according to the operation it represented and ruled with horizontal lines representing units of time. Time was measured from zero at the top, downward to as many units as were required. See (Marsh, 1975) for more information on how Adamiecki's harmonogram worked.

2.4.2 Iron triangle

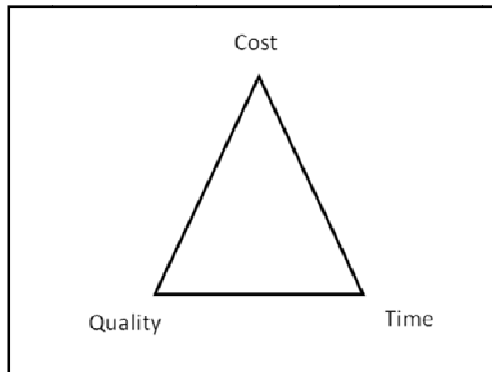


Figure 4: The Iron Triangle

Figure 4 shows the project management triangle or Iron Triangle (Atkinson, 1999) which is traditionally listed as scope, time and cost (Meredith & Mantel, 2000). It is well established that traditionally project performance is evaluated using schedule triple constraints (Meredith & Mantel, 2000) though it does have its critiques (Atkinson, 1999).

2.4.3 Project S-Curve

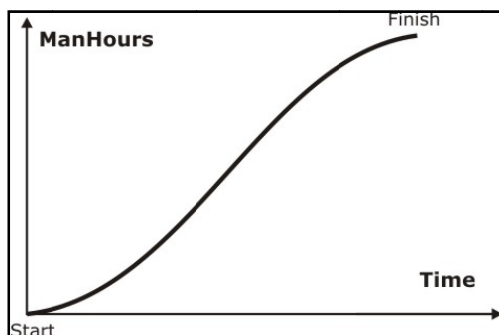


Figure 5: Project S-Curve

The project S-Curve (Figure 5) is used primarily in PM to display cumulative costs, labour hours, percentage of work, or other quantities, plotted against time (Project Management Institute, 2006). Typically it is used to model proportion complete against

time committed. Despite evidence to the contrary that suggests that project work really doesn't behave in this way (Gersick, 1988, 1989), the S-Curve is a staple artefact of PM.

2.4.4 The Work Breakdown Structure (WBS)

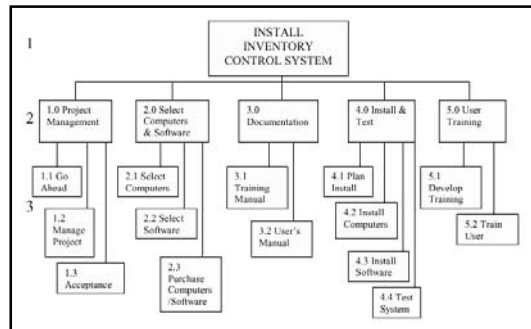


Figure 6: Example Work Breakdown Structure

The WBS is a tool born out of scientific management that breaks down work into a hierarchy of tasks, and is a fundamental PM tool for defining and organising the project as a whole (Meredith & Mantel, 2000). There is a particular assumption one must make about the world if one applies a WBS to a body of work. This assumption is a common convention of management thinking which assumes that the nature of work (and the organisations in which it takes place) can be foreseen, quantified, broken down into units, and optimised (Morgan, 1997).

2.5 Why projects fail or succeed

Failure to deliver projects within the triple constraints of time, cost, and to meet the needs of the stakeholder, dominate all sectors and industries (Pinto & Prescott, 1990; Thomas, Deisle, & Jugdev, 2002a). The internet is replete with opinion from corporations to bloggers on why projects fail and why they succeed. The Standish Report (The Standish Group, 2001) suggests that there are three major reasons why a project will

succeed; user involvement, executive management support, and a clear statement of requirements. Opinions about why projects are impaired and ultimately cancelled ranked incomplete requirements and lack of user involvement at the top of the list.

Fortune and White (2005) have reviewed the literature on critical success factors of projects. While there is limited agreement among authors on the factors that influence project success, the three most cited factors are: the importance of a project receiving support from senior management; having clear and realistic objectives; and producing an efficient plan. No research makes a clear causal connection between any factors of project management and project success/failure. Unfortunately the literature on the matter of project success / failure is replete with anecdotal evidence and hearsay. Project stakeholders continue to be disappointed by project results (Cooke-Davies, 2002; KPMG, 2003; The Standish Group, 2001), yet projects remain “cool” (Grabher, 2004), project management remains fashionable (Pells, 2007), and the Project Management Institute (PMI) is now considered to be the world's largest professional association (Maylor, Vidgen, & Carver, 2008).

2.6 Management fads and fashion

The discipline of project management has gone through various trends over the last 10 years, shifting from Interpersonal Issues and Quality Management to Project Evaluation and Improvement (Crawford, Pollack, & England, 2006), and more recently complexity (Whitty & Maylor, 2009). One way to establish the popularity of a management topic is to use an annual bibliometric technique to determine how many articles have been devoted to a given concept over time. However, this technique is not

without its critiques (Clark, 2004). Nevertheless, using this technique Söderlund (2004) has shown that the topic of projects and project management features modestly across all the major scholarly management and organisational journals, with a particular focus on the notion of projects as temporary organisations.

Abrahamson (1996) argues that “whereas aesthetic fashion need only appear beautiful and modern, fashionable management techniques must appear both rational (efficient means to important ends) and progressive (new as well as improved relative to older management techniques)”. He puts forward the case that societal norms and expectations govern managerial behaviour, and a societal expectation is that managers will use new and improved techniques. Furthermore, he defines management fashion setting as “the process by which management fashion setters continuously redefine both theirs and fashion followers’ collective beliefs about which management techniques lead rational management progress”. Abrahamson (1996), draws on neo-institutional theory (see (Meyer & Scott, 1992; Meyers & Rowan, 1977)) and argues that management fashions are about the appearance of rationality and progress that is believed by stakeholders, and that progress in terms of change is created by an expectation of ever improved ‘ideal’ techniques².

The contagion, spread, and diffusion of management fads and ideas has been likened to that of the spread of biological epidemics (Rich, 2008; Sterman, 2000). However, the interest has only been in trying to model how new management ideas might spread and ignores what the mechanisms of contagion might be, or why and how a management fad might start in the first place.

² Chapter 4 develops the theme of appearance and the function of impression management in project management

My research question is concerned with why humans find the concepts of project management so appealing and fascinating, even when independent data shows that project management falls short of expectations. Anthropologist Helen Fisher (2004) has shown that there are Darwinian reasons, in the form of evolved brain systems, that underpins why we become fascinated and in love with other people. In the next two sections (2.7 & 2.8) I attempt to present the literature which shows there are Darwinian reasons for all human behaviour, including why we find artefacts and tasks appealing.

2.7 Evolution: brains and thinking tools

There is a deeply ingrained idea that might be even older than our species. Its premise is that it takes a smart intelligent entity to make one that is less smart and less intelligent. For example the carpenter makes the table, and the watchmaker makes the watch. You never see it the other way around.

It was Darwin (1890) who completely overturned this idea. He argued that everything we see around us was created by a mindless and mechanical process that has no purpose. To begin to explain this we must look back some 1.4 billion years ago to the Eukaryotic period, when the world was only inhabited by simple prokaryotes (bacteria) (Gould, 1989). These were very simple cells which had already been evolving for some 2 billion years. However, at some point, some prokaryotes entered other prokaryotes and this created the first eukaryotic cells which were fitter and more versatile in their environment than the simple prokaryotes.

2.7.1 *No brain required*

One example of the eukaryotic cell is the amoeba (*diffugia coronata*). This single cell animal makes its own intricate case or nests from sand, demonstrating clearly that a brain or nervous system is not required to build a functional structure (Hansell, 2007). Every creature that is big enough to see with the naked eye is a multi-celled creature made of eukaryotes. Eukaryotic cells have enough complexity to permit the division of labour within the organism by diversifying to become blood cells, bone cells, hair cells, or brain cells etc.

The Caddis fly larva is one such multi-cellular eukaryote. It builds its own elaborate case, complete with food sieve (Hansell, 2007), which bears a striking resemblance to a manmade lobster pot. An important difference between the Caddis case and the lobster pot is that there are reasons (functions that benefit the Caddis) for the parts in the Caddis case, but the Caddis does not understand what those reasons are. The Caddis is designed by natural selection to build it. The Caddis and its case should be considered to be two parts of the same machine, or perhaps the case as an extension of the Caddis as the case is encoded in its genes (Dawkins, 1999). For completeness, Hansell (2007) has produced an excellent review of the subject of animal artefacts.

2.7.2 *No reason required*

There are also evolutionary reasons why the Cuckoo chick rejects the eggs from its hosts nest (Payne, Sorenson, & Klitz, 2005), but the Cuckoo chick is also unaware of these reason. As with the Amoeba and the Caddis, Cuckoo chicks are simply designed to do this, as those who do give themselves a survival advantage, over those who do not

(Payne et al., 2005). In a way, natural selection, creates things (artefacts and behaviours) that have a purpose, that is to say they fulfil a useful function. However, the creatures that build those things under the instruction of their genes, know nothing of that purpose. They are biological machines that do not understand the rationale they implement.

2.7.3 *The brain advantage*

Emotions and behaviours have a biological foundation. For example, receptors in the brain detect the levels of salt in the bloodstream. If they are too high, this means we (or another animal) are at risk of dehydration and the resulting behaviour or physical gesture is the reflexive response of moving to find water (Denton, 2006). The emotion we humans feel under these conditions might be described as that of being ‘thirsty’. Reflex responses such as thirst enable a primitive animal to rectify a chemical deficiency and therefore maintain a chemical balance (i.e. a healthy body). However, as primitive animals evolved, those with brain-like functions became selected because it is advantageous for an animal to use its capacity to assess different courses of action, like referring to past experience (memory function), as well as using available sensory information (Denton, 2006). In an environment where water is scarce, the animal that can remember where the nearest water hole is will do better than those who search randomly. As the environment becomes more and more complex, successful behavioural strategies become more and more elaborate. Today humans exist in a biological environment, a complex social/cultural environment, an ever increasing virtual environment, and our behaviour to satisfy various physical and physiological ‘thirsts’ is extraordinarily complex too.

2.7.4 *The network advantage*

The reality of our complex human social system is that our behaviour is driven by the interaction of the individual agents (humans and organisational entities), not by one person. One significant way we humans misunderstand the natural world is by attempting to draw analogies between it and our own social structures. When observing ant or bee colonies, we traditionally draw analogies between the behaviour of busy human workers and the activities of industrious ants. In this way members of an ant or bee colony are ascribed to a human social structure and categorised as workers, soldiers, and queens. Even the traditional theories of bird flocking were based on the idea of a “leader” bird at the front of the flock - but this is simply wrong.

Complexity science today views bird flocks, as well as ant and bee colonies etc, as decentralized and self-organizing networks. These communities as well as others exhibit complex behaviour. In a flock of birds, each bird follows a set of simple rules, reacting to the movements of the birds most proximate. From these simple local interactions orderly flying patterns (the flock) emerge giving the appearance of some overall controlling influence. Insect societies are also not run through command and control but through a flat, decentralized organizational structure in which individuals make their own simple decisions using information garnered from the local environment, or through signals and interactions among individuals (Anderson & Bartholdi, 2000; Anderson & McShea, 2001). Insect societies harness the power of self-organization and with the appropriate set of feedback, inter-individual interactions, and proximate mechanisms, group-level adaptive behaviour emerges (Anderson, 2002). No individual directs the foragers where to find food, the network of trails and interactions drives this. For example, a worker ant uses a simple rule based on the rate of encounter with others

ants. If the ant meets another ant every 2 seconds it continues foraging. But if the ant meets other foragers every 0.5 seconds it stops foraging.

Ants are also not 'allocated' by some hierarchical process to tasks. Tasks, by their predisposition, allocate the workers (Franks & Tofts, 1994), as some tasks physiologically stimulate some ants more than others. Furthermore, from a social or cultural point of view, each ant knows nothing about its colony, in the same way that a bird has no sense of the overall pattern or intention of the flock. The bird at the front is not a leader, controller, or manager of the behaviour in any meaningful sense.

2.7.5 *The cultural advantage*

Humans are different from other animals, and there are evolutionary reasons for this and they are not all about genes. The simplified version of the tree of life, shown in Figure 7, illustrates the last universal common ancestor (LUCA - the direct ancestor of everything that is alive today) at the base of the tree, with the prokaryotes (the bacteria) on one branch, the eukaryotes on another including the three closely related genera of *Coprinus* (mushrooms), *Homo* (humans), and *Zea* (corn). The tree of life has developed over some 3.5 billion years. Over the last 6 million years, relatively speaking a short time, we humans have evolved away from our common ancestor with the chimpanzees and bonobos. It is also important to note, and a commonly overlooked point, that the chimpanzee has also been evolving away from that common ancestor, just as we have. All the difference we see today must have occurred during this relatively short interval.

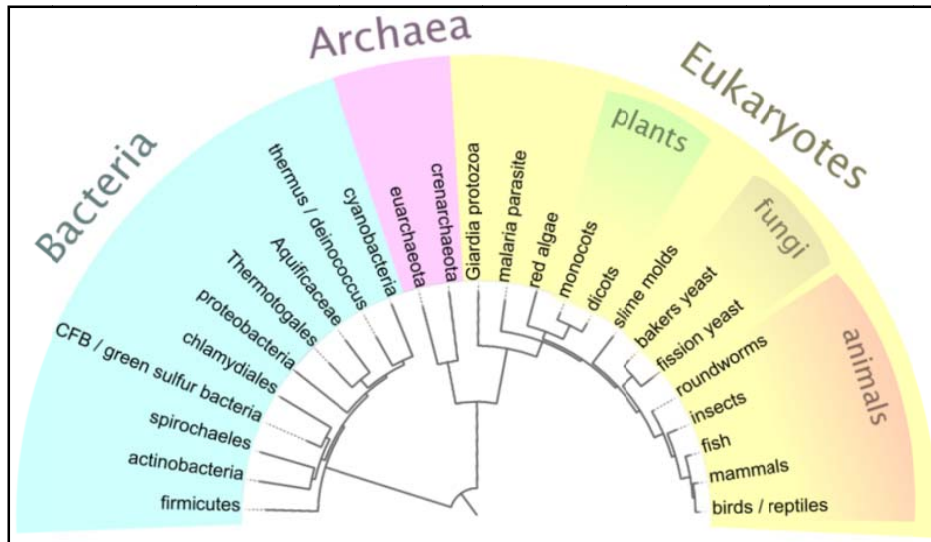


Figure 7: Tree of life (Ciccarelli, Doerks, von Mering, Creevey, Snel, & Bork, 2006)

In the early days of agriculture (some 10,000 years ago) human population plus livestock and pets was approximately 0.1% of the terrestrial vertebrate biomass (animals – not including insects or fish). Over 10,000 years, the human share (which also includes our cattle and other livestock) of the biomass has increased to 98%, leaving the wild animals to account for 2% (MacCready, 2002). What sets us apart and enables us to do this is our intelligence and technology, our genes and memes.

Gould (1989) points out that whilst the first real multi-cellular plant life (invertebrate) emerged in the shallow oceans some 530 million years ago, the human explosion only took 10,000 years or 500 generations, which is too short a time period for genes to be held solely responsible for change. There appears to be a second channel or highway of information from parents to offspring. In addition to passing on design to our offspring through our genes (like the Caddis), we can pass on designs through social learning, culture, imitation, instruction (Richerson & Boyd, 2005). Culture is transmitted. Initially, as with genes, it is from parent to offspring. However, once the cultural highways such as language, social networks, and technology are up and running, oblique

transmission can also occur (Richerson & Boyd, 2005). Information can be passed to offspring from other parents, siblings, and from other members of the community who may have good intentions or bad intentions. Richerson & Boyd (2005) called these “rogue cultural variant” which are cultural items which move on this highway, get transmitted, and they are not necessarily good for you. That is to say that, like a virus, they don't necessarily benefit the fitness of those they lodge in.

2.7.6 *Memetic advantage*

Dawkins (1989) and others (Blackmore, 2000; Dennett, 2003) calls these rogue or viral cultural variant “memes”. Memes can be considered to be recipes or instruction manuals for doing something cultural (Dennett, 2003); behaviours, words, or sounds that are copied from person to person. Furthermore, memes can be considered to be a data structure, made of information, which resides in the structure of the human brain, and behaves as a virtual machine as they cause us to do things we could not do without them.

There are many useful insights to consider when one draws parallels between memes and biological viruses, and other parasites. A virus evolves, and is also non-living. Simply put, a virus is a nucleic acid structure that has no replicating mechanism of its own, yet it has the property of inducing its host cell (with its own replicating mechanism) to make more copies of it (Dimmock, Easton, & Leppard, 2007). Both viruses and memes are designed by natural selection. Moreover, a memetic approach to cultural and economic evolution considers evolution occurring for the good of the memes, not of their human hosts.

The Lancet Fluke lives in the gall bladder and bile ducts of herbivores such as cows and sheep, and provides a good example of how a parasite can manipulate the behaviour of its host for its own ends. For a complete description of the complex life cycle of the Lancet Fluke see (Ducháček & Lamka, 2003). In short, the faeces of the host sheep and fluke larvae is eaten by snails who excrete hundreds of juvenile flukes as mucus balls which are in turn eaten by ants. Once inside the ant the fluke navigates to its brain and dramatically affects its behaviour. During the day the affect of the fluke is dormant. During the colder temperature of the night the ant is driven to climb a blade of grass and suspends itself by its mandibles until it is eaten by another herbivore enabling the breeding cycle to continue in the gut or the temperature rises and it resumes normal ant activity. Memes make a similar impact on the human brain, manipulating human behaviour for their own end, which might also prove to be of benefit to the human.

Robins (2002) has conducted an extensive bibliometric analysis of memetic related literature. In summary, the definition of a meme is currently ambiguous, but so is the term 'gene' (Haig, 2006). A meme can be found variously described as; a unit of imitation (Dawkins, 1989), a unit of information residing in a brain (Dawkins, 1982), culturally transmitted instructions (Dennett, 1991, 1995), any permanent pattern of matter or information produced by an act of human intentionality (Csikszentmihalyi, 1993a), roughly equivalent to ideas or representations (Plotkin, 1994), a unit of information in a mind whose existence influences events such that copies of itself get created in other minds (Brodie, 1996), actively contagious ideas (Lynch, 1999), a mental representation (Gabora, 1997), or a self-replicating element of culture passed on by imitation (Soanes & Stevenson, 2004). Memes are frequently selected and retained because they evoke an emotional reaction that is shared across people (Heath, Bell, & Sternberg, 2001).

2.7.6.1 *Selected and retained ideas*

Social or cultural evolution is not random. Cultural evolution favours memes (concepts and ideas) that survive and replicate. This creates an evolutionary pressure towards ideas that can sustain themselves and replicate. Cultural evolution does not *prefer* memes that replicate, but memes that do replicate will become more common, through their replication. Furthermore, there is no *conscious* human directive force that creates popular memes. There is simply a tendency of stable memes to remain longer (relatively speaking) than unstable ones.

Any meme that can replicate itself has an incredible advantage, in terms of the size of its population. While most ideas (not true memes as not all ideas spread) form randomly in the mind, if an idea can actively assemble a copy of itself it will be far more common. Of course it does not as an idea *want* to replicate itself anymore than evolution *wants* to produce life. These things merely happen as a consequence of the physical properties of the brain.

Thus, stable memes (e.g. chair or car) will eventually and randomly become prevalent with some random variations and alterations that may themselves replicate well. Given the principle that fairly stable reproducing memes become more common, culture as we understand it has developed. Memes such as ideologies replicate principally by producing a physiological and socio-physiological (broadly affective and emotional) stimulus in humans which in turn impels behaviour (Blackmore, 2000). One of these behaviours is the creation artefacts which I discuss shortly. But first it is important to note that this trait is even older than our species.

2.7.7 *Rethinking what we are*

Evolutionary speaking humans are not unique. Biologically our closest cousins are the common and pygmy chimpanzees with whom we share 98.4% of the same DNA. From an evolutionary point of view, humans are a third species of chimpanzee (Diamond, 1992). Furthermore, there is nothing particularly special about the human brain as a human body part (Denton, 2006). Just as evolution has shaped the human hand or liver to perform a specific function, so evolution has shaped the brain. The basic structure and function of the human hand and other organs has not changed for over 50,000 years, neither has the structure and function of the brain (Greenfield, 2001). Therefore, the human body still functions in the same way as it did when humans lived a hunter-gather lifestyle in groups of fifty or so related individuals, and this is a most important premise of evolutionary psychology.

Despite technical advances, humans are still physiologically designed (by natural selection) for a primitive environment. The history of humans, as separated to that of other animals, began some 7 (± 2) million years ago in Africa when a population of Apes broke up into several smaller populations. One proceeded to evolve into modern Gorillas, another into the two modern Chimpanzees, and another still into modern Humans (Diamond, 1992). Fossil evidence show that the evolutionary line leading to modern Humans had achieve an upright posture some 4 million years ago, and began to create crude tools and increase in relative body and brain size some 2 ½ million years ago. Some 5 million years out of the 7 million years of human evolution were confined to Africa, and *Homo erectus* (the evolutionary stage reached around 1.7 million years ago) appears to be the first to spread beyond (Diamond, 1992).

The evolutionary history of Humans is much more complex than we would like to think. There is no simple single line of descent that can be followed like the trunk of a tree from its apex back down to the roots. Evolution is far messier than that as our biological ancestry is more like a bush with multiple tangled stems (Wood, Oct 26, 2002). Up until recently, *Homo habilis* was thought to be the ancestor of *Homo ergaster*, which in turn gave rise to *Homo erectus*. However, it has been suggested that the two species coexisted and may be separate lineages from a common ancestor (Spoor et al., 2007).

For the purposes of this review the detail of the biological ancestry of Humans is not important. Suffice it to say, *Homo erectus*, along with *Homo ergaster* (regarded as an extinct subspecies of *Homo erectus*), was probably the first early human species that could be described as living in hunter-gatherer societies. Early populations further diversified, and one species, the Neanderthals, split from the modern human lineage some 376,000 years ago and followed separate evolutionary paths from that of modern humans (Diamond, 1992). The lineage of modern humans is indeed a tangled web as traces of ancient populations can be found today in different so called 'races' of peoples.

In short, modern humans are anatomically the same as the prehistoric Cro-Magnon people (Narayan, 1999). To use a computer metaphor, our hardware is some 50,000 years old and still responds to the environment the same way as it did back then. However, our software, our thinking tools, beliefs and ideas, has continued to evolve at an accelerating pace. It is our ability to carry memes and form abstract ideas that have shaped us into modern humans (Dennett, 2003).

2.7.8 *Rethinking where we live*

Modern humans live in a world of abstractions (Deacon, 1998). Perhaps a sporting example most would identify with is the gymnast's vault. The vault or vaulting horse is an abstraction of a real horse. The restlessly moving, whinnying mount of the past, has become today's immobile standardised horse (Guttmann, 2004). Hurdling is another sporting abstraction, where the hurdles of today look nothing like the leafy hedges they represent. Our wireless offices at home are abstractions of previously hardwired business offices in the city (De Botton, 2006). Our cars are abstractions of horseless carriages, which in turn are abstractions of the horse-drawn carriage, which in turn is an abstraction of the saddled horse.

We have even abstracted the notion of ourselves from that of Stone Age people, and that further still from our pre-human ancestors. Our ability to abstract, even in this last illustration, has given us the competitive advantage over those who do not (Dennett, 2003).

Our power as a species lies within our culture, which permits us to divide labour and share expertise (Diamond, 1992). Memes are thinking tools (Dennett, 2003), and primarily among them is language as words are a type of meme that can be pronounced (Dennett, 1995). Millikan (2005) spoke of the replication of words saying that words were "members of first order reproductively established families".

2.7.9 *Thinking tools*

Where do words come from? Do the thousands of languages have a common ancestor? As I highlight shortly, the latter question is somewhat flawed. We know that selection pressure can force evolution to act relatively quickly, as it took only 15,000 years of natural selection to go from the Wolf to all varieties of domesticated Dogs (Morey, 1994). Linguistic evolution has taken longer. We can draw the evolutionary trees or lineages of the various languages, proto-Indo-European languages, finno-ugric languages, the languages of china, proto-mayan languages (Bellwood & Renfrew, 2003). All of these languages have evolved by the differential replication of their parts. Some have become extinct, and some like English get copied and copied and copied. Word also spread from language to language, a process which biologists call anastomosis which describes the horizontal transmission of information (Crystal, 2005). In the early days of biological life on the earth there was a lot of anastomosis between life forms so it makes little sense to talk about the lineage of species at this level, one need only to talk about the genes. In the same way, words had been shared between languages, and it makes little sense to talk about the lineages of languages. One needs to talk about words as words and more traceable than languages (Dennett, 2003).

It is valid to adopt a perspective that words are tools as they are not always elements of grammatical constructions. Words also have a life of their own. Passwords, labels, and imprecations are examples where no context is necessary (Crystal, 2005). Words can be made of technique. That is to say that when we learn a new word a recipe for action is learnt. When we learn the word Gantt chart or cost benefit analysis, what do we learn? We might learn a new technique and in a sense remake and reattribute the structure of our brain.

Like the Caddis fly larva mentioned previously, we humans can create tools and physical artefacts (Kroes & Meijers, 2005). However, unlike the Caddis we can also mentally create the ideal of the tool - a conceptual goal. And this attribute produces self-perpetuating behaviour that drives us to make the tool in question better and better towards the ideal (Dennett, 2003).

No individual invented language, tonal music, the decimal number system, the map, money, farming, or dairying. None of these things which play a significant role in our lives was invented by anyone. As with the Caddis fly case, none of these things have intelligent designers, but they are intelligently designed. They were all created by the various process of differential replication, which is modification with dissent or natural selection.

2.7.10 *Forms of selection*

Darwin (1890) presents three forms of selection:

1. Methodical selection: This is the deliberate and intentional breeding of animals and plants. For example the modern dairy cow was first domesticated by humans some 10,000 yrs ago. Its ancestor the Auroch was designed over billions of years by natural selection. Breeders (artificial selectors) have been working, first unconsciously, then consciously, for thousands of years redesigning and optimising the cow to be a better producer of milk/meat/dairy produce for humans. Like the modern dairy cow, humans have deliberately domesticated and

redesigned through selective breeding various species of animals and plants such as sheep, chickens, corn, and carrots.

2. Unconscious selection: This is about inadvertent selection where some animals, because of our behaviour, are favoured over others. An example of this would be the still wild species such as rats, pigeons, and crows who thrive in the company of humans.
3. Natural selection: This is the natural selection process without the conscious or unconscious intervention of humans.
4. Genetic engineering: This a hyper-methodical selection where we humans don't wait for the mutations to happen, we generate them (Dennett, 1995).

Four forms of selection can also be seen in cultural selection (Dennett, 2003):

1. Methodical selection of domesticated memes: This is the deliberate replication of memes, which would otherwise become extinct (e.g. Calculus).
2. Unconscious selection: This is the inadvertent selection of memes, such as the differential replication of songs.
3. Natural selection of synanthropic memes: This is to do with memes that could be ecologically associated with humans. For example, a folk religion could be considered to be synanthropic meme. We tolerate folk religions (like we tolerate pigeons) however they provide no benefit to us as a species. However, words

(languages) are synanthropic memes that provide us with great benefit, but we have no control over how language evolves.

4. Memetic engineering: This could be considered to be the process of advertising, spin doctoring, and the design of slogans.

2.8 Evolution: Gesture and language

The complexity of communication in a world largely made up of human artefacts is increasingly coming into view. Researchers studying communication in the work-place (Drew & Heritage, 1992) (Hutchins & Klausen, 2000) as well as human-machine communication (Suchman, 1987) have suggested that talk and activity mutually structure each other in ways that require us to rethink some of the basic paradigms we have of human interaction and communication. More traditional paradigms consider physical gestures separately from spoken language, and both of these separately again to emotions. An all-inclusive evolutionary view is that language is a form of gesture, and that they are both drivers and expressions of primary (chemically driven) and secondary (environmentally driven) emotions. Therefore the human vocal language (breathing, movement of tongue and jaw) has been built on the scaffolding of a more primitive gestural communication system that was already in place.

It seems natural to assume that language evolved as vocal behaviours became increasingly refined. However, Corballis (2002) argues that language ability evolved as brain centres that controlled prehensile (e.g. seizing, grasping, holding) movement in the left hemisphere adapted to process increasingly sophisticated forms of gestural language. Although vocal language eventually eclipsed gestural language, we can still observe this gestural inheritance in the ways we speak, think, and the words we use (see the discussion on the etymology of the word “project” in Section 7.3.1.1).

There appears to be a sympathetic relationship between motor skill coordination and language ability. More than 85% of the human population is right-handed, a condition that results when areas of the left hemisphere dominate motor coordination. The

two key centres for language processing are also located in the left hemisphere. This area is also dominant in sign language processing and articulation. Damage to a signer's left hemisphere causes the same type of grammatical aphasia as it does in people who can speak, suggesting that sign language grammar is processed by the same region as spoken grammar. Calvin (2001) argues that the ability to process language evolved as a by-product of brain structures that first enabled early hunters to perform the mental calculus needed to throw accurately. Therefore language ability arose by the modification of left hemisphere structures that originally evolved for non-linguistic gestural purposes.

2.8.1 *Hardwired to read gesture and emotion*

Vocal language is an entity with a set of features that link with a concrete biological interface (Bichakjian, 2002). This premise has led to the discovery of 'mirror neurons'. When researchers were studying neural activity in rhesus monkeys they found that when a monkey grabs an object such as a peanut, a very specific set of neurons fire in its brain. More interestingly (memetically speaking), when the same monkey watched a researcher grab a peanut, the same set of neurons fired (Gallese, Fadiga, Fogassi, & Rizzolati, 1996; Rizzolati & Arbib, 1998). For mirror neurons there is no difference between doing and watching. In primates, mirror neurons are concentrated around areas that regulate facial and gestural movement. In human brains, these areas are homologous to language centres. If mirror neurons make no distinction between doing and watching, it would seem that we are hardwired to read the gestures and emotions of others, and that language may have evolved as this system became increasingly sophisticated. Chimpanzees' cannot vocalize unless they experience emotions such as surprise or fear. Their vocalisations are therefore bound by their emotional states (Reynolds, 2005). However, Chimp gestures

are “dyadic” which means they are directed towards others. Like infants, chimps communicate abstract ideas using gestures such as pointing, and these gestures seem to have the associative and symbolic qualities of language. If language processing was built by adapting gestural hardware that is innately sympathetic, it would suggest that close links remain between language processing and the coordination of prehensile movement. Perhaps this is why motor-skill activities such as pacing or doodling ‘help’ us think. They create an interlocutor or conversational partner that satisfies our ‘thirst’ to think at someone (Freedberg & Gallese, 2007).

Perhaps we should not draw a line (no pun intended) between representational art and art that is generated by processes more integral to cognition. There are a wide range of these behaviours that engage motor skills to enable higher levels of cognition. The act of writing itself is bound to the ways we think (Bichakjian, 2002). A doodle, a gesture, or what might be considered a fidget is an activity that is inextricably part of the mechanism of thinking and speaking.

2.8.2 *Gesture and emotion*

Art contains the mark, impressions, or some remnants of physical gestures. Art, in the moment of its creation, is connected to the emotions (physiology) of the artist. The observer, via mirror neuron activity, is in some way empathically connected to the creative emotions of the artist. Freedberg and Gallese (2007) have produced an extensive review of the literature that demonstrates that human empathic responses to works of art have a precise and definable material basis in the brain. Viewers of works of art report bodily empathy. For example, in the case of Michelangelo’s Prisoners, responses often

take the form of a felt activation of the muscles that appear to be activated within the sculpture itself.

Empathetic feeling can no longer be regarded as a matter of simple intuition and can be precisely located in the relevant areas of the brain that are activated both in the observed and in the observer. When one observes the body part of someone else being touched or caressed (Blakemore, Bristow, Bird, Frith, & Ward, 2005; Keysers, Wicker, Gazzola, Anton, Fogassi, & Gallese, 2004), or when one observes two objects touching each other (Keysers et al., 2004), one's somatosensory cortices are activated as if one's own body were subject to the same tactile stimulation. Furthermore, humans generate mirror neuron activity by internally animating still-life artworks. And, still-life art can embody gestures or emotions and evoke similar gestures or emotions in the observer's brain (Freedberg & Gallese, 2007).

2.8.3 *Emotion and artefact*

There are neurological underpinnings to emotions and physical reactions such as those in imitation of the actions of others, or those evoked by still-life or animated artefacts. Artefacts not only evoke emotional responses such as gestures or vocal language by their sheer presence and design, they are also an abstracted product of an emotional state which is also inferred by the observer.

Abstractions provoke strong emotional responses. Fireworks are a good example of this. Millions of dollars of fireworks go up all over the world, with millions of people turning out to watch them. However, they are not real things in nature, they do not represent anything else, and they do not remind us of anything at an intellectual level.

Many people watch and afterwards exclaim “that was wonderful” without being able to explain what “that” was.

The ability to create abstraction and metaphor is a product of brain anatomy. This anatomy is brought about by selection pressures in early humans that favoured prehensile movement such as activating a particular set of muscles to grasp a visual object. Abstractions and metaphors are a by-product or spin off of this which undergoes its own selection pressures at the cultural level, as those who think creatively and metaphorically gain some competitive advantage. This propensity to link seemingly unrelated concepts has neurological foundations.

Synaesthesia is a neurologically based phenomenon in which stimulation of one sensory or cognitive pathway leads to automatic involuntary experiences in a second sensory or cognitive pathway (Ramachandran & Hubbard, 2001). Those with synaesthesia have the rare capacity to hear colours, taste shapes, or consciously experience other sensory blending.

The fact that some people consciously experience synaesthesia further highlights the neurological basis of the phenomenological experience of language. Seemingly metaphorical phrase such as "a loud shirt", "a bitter wind" or “that cheese is sharp” have neurological foundations. The most common form of synaesthesia is where the image of a number evokes colour in the field of vision. This results from the situation that the area of the brain that deals with colour is right next to the area that deals with numbers, and some form of neurological cross activation occurs (Ramachandran & Hubbard, 2001). It is not the concept of the number that evokes a colour; rather it is its visual appearance or

shape. An example of this would be that an Arabic number would evoke a colour, a Roman numeral would not.

Ramachandran (2001) suggest that all humans experience synaesthesia at birth. Simplistically put, at birth, all our senses are connected to each other. Then over time and as a consequence of our interaction with the environment the excess connections are pruned to create the modularity characteristic of the adult brain. However, some form of neurological cross activation or sensory blending is always occurring. In some people it is more pronounced and consciously observable than others.

Ramachandran (2001) also suggests that mirror neurons may be involved in language, where physical gestures of the tongue which create sound inflections mimic the visual inflections. This is a form of synaesthesia, a form of inter-sensory abstraction. Ramachandran (2001) conducted an experiment in which people were asked to relate two words in an imaginary language—kiki and bouba—with two different shapes (see Figure 8), one a bulbous amoeboid form with lots of undulating curves and the other jagged, like a piece of shattered glass with jagged edges. His results show, 98% of people say the jagged, shattered glass shape is kiki, and the bulbous amoeboid shape is bouba. Ramachandran explains this from a neurological viewpoint in terms of the shape and sound having a shared property. The bouba kiki effect shows there is a non arbitrary correspondence between the visual appearance of something and the sounds a human creates, even the emotions they feel. He suggests that dance is also a form of sensory-to-motor synaesthesia.

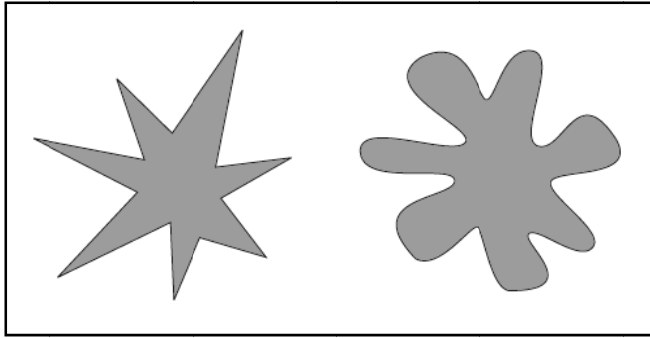


Figure 8: from *A Window into Perception, Thought and Language*, 2001 (Ramachandran et al., 2001) and *Visual thinking*, 1969 (Arnheim, 1969).

More interestingly, crude drawings such as bouba kiki can serve as representations or abstractions of the state of our emotional psyche. Thirty two years previously, Arnheim (1969) asked his students to describe a bad and good marriage using only a line drawing, they produced drawing like those of bouba and kiki. Therefore the shapes made by physical gestures capture in an abstracted form some of the qualities of the two different types of emotional relationship. In one example, the smooth curves mirror the peaceable and flowing course of a loving union, while the jagged spikes serve as visual shorthand for sarcastic putdowns and slammed doors.

De Botton (2006) argues that if single line drawings can speak so accurately and fluently of our emotions, when buildings are at stake, our expressive potential through such artefacts is exponentially increased. He suggests that architecture “speaks to us” and evokes emotional associations that influence our mood and how we conduct our lives.

The condition of synaesthesia has demonstrated how the human brain abstracts. A two dimensional shape is abstracted by the brain to produce a three dimensional gesture (the tongue) that produces sound. Emotions are also embedded in gestures; whether these gestures are building a Cathedral or drawing a line chart of how work tasks are to be

completed in the future. As well as abstracting, the human brain also creates perceptual illusions.

2.8.4 *Perceptual illusions*

Our thoughts, including our awareness of patterns, can be perceptual illusions. Although intimately related, sensation and perception play two complimentary but different roles in how we view and interpret our world. Sensation refers to the process of sensing our environment; touch, taste, sight, sound, and smell. Perception is the way our brain interprets these sensations and “makes sense” of everything around us. Rather than thinking of the human brain as a pattern-identifying device it is more precise to consider it a pattern generator. As a wanton storyteller and a profligate seeker of patterns, it tells us white lies about reality; seeing faces in clouds and tortillas, fortunes in tea leaves and planetary movements (Dawkins, 2003). This is why we have to be extremely careful when we discuss the matter of projects and PM. Our brains can perceive patterns that are not there, and the error is not always as obvious as seeing faces in clouds.

Our brains perceive patterns in how we organise work. There is a Gestalt law: the whole is greater than the sum of its parts. The term ‘Gestalt’ usually means the whole effect, the structure of the total arrangement of things. Gestalt psychologists theorize that in order to interpret what we receive through our senses we attempt to organize this information into certain groups. This allows us to interpret information completely without unneeded repetition. The Gestalt principles of grouping include four types: similarity, proximity, continuity, and closure (Kohler, 1992).

- Similarity, our tendency to group things together based upon how similar to each other they are.
- Proximity, our tendency to group thing together based upon how close they are to each other.
- Continuity, our tendency to see patterns and therefore perceive things as belonging together if they form some type of continuous pattern.
- Closure, our tendency to complete familiar objects that have gaps in them.

In summary of Chapter 2 thus far, I began with an overview of the evolution of modern management and highlighted how its focus has moved from that of domains to that of disciplines with modern project management as one of the latest disciplines with its own peculiar artefacts. I gave an overview of how we currently attempt to reconcile the difference between the popularity of modern project management with its poor track by having inconsistent and vague means of measuring project success, and highlighted how very few researchers have taken an evolutionary approach to the phenomena of fads and fashions in management disciplines.

I also gave an overview of the core evolutionary concepts that are central to my thesis. I focused on co-evolution highlighting the holistic qualities of biology and culture and how complex behaviour can be encoded across them in terms of genes and memes.

2.9 Evolution: Cultural *nee* Social Darwinism

In thinking about the ways in which the social sciences have responded to evolution, is worth considering that there is fear and bias because of the history with

eugenics which came from a movement which claims to be Darwinian and affiliated with Darwin. In this section I review why Darwinian evolution is not widely accepted in the social sciences, how the modern paradigm of cultural evolution has been founded against previous notions of evolution, and the current thinking on the evolutionary approach that underpins my thesis – co-evolution.

2.9.1 Misunderstood and misused

Charles Darwin can be viewed in two different ways. Those with a background in sociocultural anthropology will have most likely read the *Descent of Man* (Darwin, 1871). Those with a background in biology or physical anthropology will have most likely read the *Origin of species* (Darwin, 1890). Each of these books leave the reader with very different ideas on who Charles Darwin was, what his ideas were, how good a scientist he was, and how he thought about the data relating to human beings (Desmond & Moore, 1994). The *Origin of the Species* is often held up as a hallmark of the scientific experiment. In it Darwin presents detailed evidence through data he collected himself in all kinds of situations. He makes statements about how certain situations have placed environmental pressures on particular animals. That is to say that he presents qualitative data, which has been gathered through the empirical process.

By contrast, in the *Descent of Man* he presents a very different approach. Darwin does not appear to recognize or appreciate, when considering the well-being of human beings, the impact of their sociological or psychological environment, and this neglect is confronting social scientists. For example, consider how Darwin regards the qualities of different racial groups when he says:

“It has often been said, as Mr. Macnamara remarks, that a man can resist with impunity the greatest diversities of climate and other changes; but this is true only of the civilised races. Man in his wild condition seems to be in this respect almost as susceptible as his nearest allies, the anthropoid ape, which have never yet survived long, when removed from their native country.”

In the *Origin of Species*, Darwin appears to be a man of logic and uses reliable data. In the *Descent of Man* he regularly abandons logic as the example above shows. When he refers to “civilised races” he is referring to Europeans. He neglects the fact that previous societies such as the Inuit and their ancestors adapt to the Arctic, and that European colonies had become decimated by diseases.

So depending on which of Darwin’s books one reads, one is left with a very different impression of the man and his ideas (Desmond & Moore, 1994). By the one, he is a brilliant scientist. By the other, he is a typical Victorian gentleman who demonstrates the racism of his time. Charles Darwin was of course both, but social scientists are left with a very biased view that supports the latter.

Scientists that revisit Darwin, try to re-examine and understand what Darwin meant, bearing in mind that the meaning of the terms Darwin used were interpreted differently in his day. Roughgarden (2005), a prominent evolutionary biologist, notes how Darwin's idea on sexual selection is naïve and how empirical data gathered today shows that reality is far more complicated than he understood it to be.

2.9.2 *The primitive society meme*

Nevertheless, an interesting question is how are these two books from Darwin so very different? Darwin was certainly influenced by his rivals and peers. Most notably were Herbert Spencer, an early sociologist and crude Lamarckian, and John Lubbock, McLennan, Maine, Lewis Henry Morgan, and other evolutionary thinkers, thought about evolution somewhat differently to Darwin. It was Spencer (1884), an incredibly influential man in his time, who first coined the term “evolution” and came up with the concept of "survival of the fittest", a concept not in Darwin's first edition of *Origin of the Species*. However, Darwin included it in the second edition and this critically shifted the focus of the discussion on natural selection which influenced the rise of the concept of the primitive society. See Kuper(1988) for a detailed history of the ideas that lead to the notion of primitive societies.

2.9.2.1 *Evolution as potential*

Evolution was seen as ‘potential’. It was the unfolding of a predestined outcome³, a popular notion in the 19th century that presented the stages of development in an ascending scale from insects to the animals, to humans, to angels, and finally to God. Each level in the scale deemed to be better or fitter than the previous, and each level unfolding its potential. Other scholars such as Maine (1861), Morgan (1877), and founding father of sociology and positivism Comte (2002), before during and after Darwin, applied this scaling to society, which went from lower middle and upper savagery, to barbarism, and finally civilisation. Morgan (1877) linked these in terms of the technology that was being used. The bow and arrow represented upper savagery; pottery equalled barbarism; animal domestication equalled middle barbarism, and so on.

³ See Chapter 4 for a discussion on predestination and its influence on project management.

The presumption being that human societies moved through these stages and progressed up the natural predestined scale.

More liberal thinkers such as Tylor (1871) presented the concept of psychic unity, which considered that human beings, even though at different levels of the scale, had the same cognitive capacity but that they had not gone as far in the unfolding of their destiny. Others had a more sinister view of the scales, which considered that those at the lower end of the scales were actually lower in cognitive ability. It is this view that has caused many to associate Darwinism with eugenics.

2.9.2.2 *Road to the Death Camps*

Eugenics was founded by Darwin's cousin Frances Galton (1869), who expressing his frustration that no one was breeding a better human race (Galton, 1864 & 1865). His views were extremely popular with the influential people of his day. For example, Winston Churchill (then Home Secretary) proposed laws in Britain based on Galton's eugenics, which were ultimately opposed by the English writer G. K. Chesterton (Perry, 2003). In contrast, similar eugenics laws were passed in the United States. The purpose of these laws was to promote 'fitness' in the population. More specifically that the unfit were sterilised and that the births of those to be considered fit were promoted. According to Spencer (1884), whether one was fit or unfit was strongly linked to race or economic class.

The initial targets of the Eugenicists in the early 20th century were the Jews, Irish, and Italians who were not considered white at that time. Later in the century those who

spoke Spanish, the African-Americans and Native Americans were targeted (Hawkins, 1995). In the 1920s, the American Eugenics Society exhibited “better baby” and “fitter family” contests that rivalled livestock breeding and hybrid corn exhibits in popularity (Pernick, 2002). This suggested that some people were born to be a burden on the rest. These contests were the forerunners to today’s Miss World and Mr Universe contests.

The views of the eugenicists had a significant impact on the medical research of the day. Dr. Joseph Goldberger, a physician in the U.S. government's Hygienic Laboratory, discovered the cause of Pellagra and showed that diet (nutritional deficiency) and not germs (the currently held medical theory) caused the disease. Eugenicists argued that Pellagra was a result of the bad genes of the poor and that such people should be sterilised (Gratzer, 2005). Eugenicists also argued that conditions such as shellshock were a consequence of an underlying constitutional weakness, a common line of thought through both World Wars (Larsson, 2009).

The United States past a number of compulsory sterilisation laws (Meyers, 2006). By World War II, 30 of 48 States had compulsory sterilisation laws. By 1968, about 65,000 people were compulsorily sterilised, and in 1992 22 States still had compulsory sterilisation laws on their statute books. Between 2002 and 2007, 5 States apologised, including California, which is particularly important to note because the Nazi laws were based on the US sterilisation laws, and the Nazis paid special attention to how California enacted them on a large scale. California was responsible for about one third of those compulsorily sterilised. It is these kinds of outcomes that cause, not just creationists but humanists, to equate eugenics with the Nazis and Darwin.

2.9.3 A new beginning for social evolution

American anthropology, exemplified by Boas (1938), was founded against Tylor and Morgan's notion of evolution. It supported Darwinian theory, but did not accept that it applied to culture (Lewis, 2001). Given that history, it is worth considering what kinds of evolutionary perspectives have gone on in the social sciences, namely evolution as a legacy, evolution as a psychological adaptation, evolution as a process of cultural change, and co-evolution.

2.9.3.1 Evolution as legacy

As previously stated, evolution was seen as an unfolding potential towards a predestined purpose or state. A more current and alternative view is that evolution is seen as a legacy, and that humans bear the imprint of genetic evolution in most of their behaviour. A major start to this work came from Lorenz (2002) who is famous for his work on the imprinting of ducks. He argued that fighting and war are the natural expressions of human instinctive aggression. This highlighted the impact of genetic evolution on human behaviour. This way of thinking was further expanded on by Wilson (1975) and Trivers (1971) who moved away from the ethological perspective where they looked at the ontogenetic expression of instincts and began to think about the functional significance of behaviour. That is to say, they looked at current human behaviour and assumed that it was adaptive and that it gave current fitness benefits. Geneticist William Hamilton (Hamilton, 1964) applied this approach to kin selection and how being related to different individuals impact on behaviour. Another key concept was parental investment theory (i.e. females invest a lot into any one offspring, whereas males put very little effort into any one offspring) and parent-offspring conflict (Trivers, 1972). This

brought together the concept of inclusive fitness, of life history theory, and sexual selection.

2.9.3.2 *Evolution as human behavioural ecology*

Another area that takes the evolutionary past as a legacy is that of Human behavioural ecology which makes the basic assumption that individuals will seek to optimise their lifetime reproductive success. The focus of some research (see (Smith, 1991)) has been towards food acquisition, specifically foraging, and social status particularly signalling and its link to reproductive success, and how optimisation is restrained by social interactions and how human groups deal with suboptimal results. Most of the research on human behavioural ecology is done on foraging or pastoral people, and this makes the findings hard to generalise, particularly to the Western corporate environment.

2.9.3.3 *Evolution as psychological adaptation*

Another prominent area of research is evolutionary psychology, which attempts to explain mental and psychological traits such as memory, perception, and language, as adaptations (Barkow, Cosmides, & Tooby, 1992). A key concept is that a particular adaptation was selected for in the past in an ancestral environment. The assumption being that it had to be adaptive at the time when it was selected for, and not whether it confers any adaptive features today. Evolutionary psychology raises the concept of the environment of evolutionary adaptedness (EEA). That is to say that when forming a hypothesis, one must consider the environment in which a particular adaptation arose and think about the constraints and limitations that were taking place at the time. This field is often criticised from the point of view of ‘how do we know what the environment was like then’, and ‘how do we know when a particular feature or adaptation arose’. Tooby,

Cosmides & Barkow (1992) are leaders in evolutionary psychology and they show that there are evolved cognitive mechanisms. They make the case that our brains are better suited to solving problems in social situations in a more ancient environment than they are in the abstract.

When considering evolution from a legacy point of view the evidence for it consists mainly of anecdotal stories, and there is no mention of culture as it is treated as an extension of the phenotype with no independent properties attributed to it (Laland, Odling-Smee, & Feldman, 2000). Also it does not consider the impact of culture on humans.

2.9.3.4 Evolution as a process of cultural change

Finally, evolution can be considered to be a process of change in the cultural realm, which is analogous to genetic change in the biological realm. It challenges researcher to consider, what is the selection process, and what is it that is being selected? One answer to this has already been previously discussed – Memes (2.7.6).

2.9.3.5 Co-evolution

Gene-culture co-evolution or dual inheritance theory tries to bring the gene and cultural evolution together. The underlying premise of which is that human behaviour is influenced by both genes and by cultural units (memes). None of the scholars in the field can agree on what to call these cultural units. Hewlett (2002) calls them “semes”, Cavalli-sforza & Feldman (1981) call them “ideas or information”, Richerson and Boyd call them “rogue cultural variant”, Durham (1992) calls them “memes” or “cultural units”, and Dawkins (1989; 1993), Dennett (1995, 2006), and Blackmore (2000) call them “memes”. All of them have tried to consider either using mathematical models or

empirical cases; what are the circumstances where genes have a greater influence, or where memes have a great influence over behaviour; and when and how do they interact.

A co-evolutionary approach takes cultural inheritance seriously. History and tradition do matter. Cultural selection may take place in several ways. Guide variation, which is learning by trial and error. Biased transmission, where we have a genetic predisposition (primary emotions) towards behaviour such as a preference for salty food or the genetic changes in the Western world that have been associated with dairying (Durham, 1992). Another thing that can guide or bias behaviour is social conformity (secondary emotions). How many does it take to sway our opinion on an issue, or do we follow someone of high rank or status? These are also called our secondary values (Durham, 1992). That means, depending on our current meanings and beliefs, what other meanings, beliefs, or values are we prepared to accept or enact?

Durham (1992) has also proposed that there is an ecological influence on human behaviour as well as the environment, social and genetic influences. The ecological principle involves niche construction, where the environment is something that organisms contribute to and build. An example would be a termite mound, where some termites build the mound into which other termites are born.

In summary of Chapter 2, we know that we are biological machines that are inextricable from our cultural, social, and physical environment. In the past, in order to understand certain human biological and cultural phenomena, we have reduced things to their smallest parts and studied them in isolation. We now know this approach works fine if

you're trying to understand how a bridge or a grandfather clock works, but not so when you're trying to understand humans and their behaviour.

As the literature in this review illustrates, human behaviour is encoded across our genes and culture. Our physical gestures, including language, as well as the remnants of our gestures such as our writing, art, and other artefacts we make, are expressions of our emotions. And our emotions are our survival responses to internal and external stimuli.

Just as our species competes in a natural selection race for scarce resources in order to survive, so our cultural devices such as our artefacts, language, and thinking tools compete for our attention by their physiological stimulus.

Chapter 3: Applying Evolution to Project Management

3.1 Preamble

This chapter is principally an incorporation of my published paper ‘A memetic paradigm of project management’ (Whitty, 2005). The purpose of this chapter is to begin to map out the impact and implications of a memetic framework for project management.

Some important aspects of this chapter are that project management evolves for its own end and not for the greater good of the person, profession, or organisation; that project management evolves in a manner that enables the idea if it to spread; that project managers do not create project management, rather project management creates project managers; and that the project management professional bodies, bodies of knowledge, and project organisations are mechanism that project management uses to replicate.

The work in this chapter has to date been cited in the literature with respect to project management as a human construct (Kruchten, 2007; Pant & Baroudi, 2008), how ethical behaviour is constructed by the environment (Suen, Cheung, & Mondejar, 2007), in the context of the globalisation of project management (Eberlein, 2008), how controversies might be used to strengthen project management norms (Csösz & Markowski, 2008), as an addition to the epistemological perspectives to project management research methodologies (Hillson, 2008; Smyth & Morris, 2007), and as a quality project management publication that has relevance to non-traditional industries (Carden & Egan, 2008).

A memetic paradigm of project management

3.2 Abstract

This paper aims to fuel the discussion on examining project management research from different perspectives. A new *memetic* approach to project management is presented that promotes a new way to examine the discipline of project management. Project management is claimed to be a memplex with the language and stories of its scholars and practitioners at its core; shaping and restricting human behaviour, and creating impoverished mental models of project management. The paper suggests that a new memetic approach to project management will help lift restrictions imposed by the traditional research approach, and enrich our mental maps of project management to serve us better.

Keywords: Memetics, Project Management Research;

3.3 Introduction

Despite decades of research and experience, project management (PM) still fails to live up to the expectations of stakeholders as they continue to be disappointed by project results (Cooke-Davies, 2002; KPMG, 2003; The Standish Group, 2001). Söderland (2004) and others (Bredillet, 2002) (Themistocleous & Wearne, 2000) argue that a possible cause for poor project results is that scholars and practitioners still do not really understand the nature of projects, and that too much research effort has been directed towards clarifying the reasons for project success and failure, while downplaying research on why projects exist and behave as they do. Moreover, Söderland (2004) suggests that to highlight the weaknesses of current PM research we should be pursuing questions such as; Why do project organisations exist, why do they differ, and how do they behave? What is the function of, or value added by, the PM unit? However, these questions still presuppose that we understand what a project is, and what the management of one means.

I believe we will not find answers to these questions or further our understanding of projects and their management by using our current research approach to PM (Project Management Research Program Team, 2001; Slevin et al., 2002). I suggest a new “memetic” approach is required. One that requires us to consider that most of what we call a project and what it is to manage one is an illusion; a human construct about a collection of feelings, expectations (Atkinson, 1999), and sensations, cleverly conjured up, fashioned, and conveniently labelled by the human brain. Moreover, it requires us to consider that our reasons for using projects and PM are not consciously driven to maximise profit. Scholars and practitioners will be required to consider PM as naturally occurring, self-serving, evolving and designing organisations for its own purpose.

Abandoning our current PM knowledge will not be required; however a memetic approach will compel us to examine it, redirecting our attention to previously hidden aspects of PM enquiry. Rather than posing questions such as “why do project organisations exist,” we can ask, “what are we able to see, think, or talk about if we conceive PM in a memetic way?”

Throughout this paper I refer to a traditional approach to PM research. Traditional meaning the current approach, with underlying mental models which have been extended with many variations on a theme to inform management theory (Morgan, 1997). These traditional models regard organisations as human constructs. An underlying assumption of a traditional approach to PM research assumes that an organisation is an entity in its own right, with structures and systems that can be changed for the purpose of organisational improvement.

In this paper I will put forward an argument for a change from the traditional to a memetic approach to PM research. Such an approach will make an impact on many aspects of PM, such as; how it evolves, how it is studied and practiced, the role of the project manager, the project team and the profession. Moreover, it will make an impact on our view of the PM body of knowledge (BoK) and the role of project organisations. Table 1 summarises aspects of PM that are discussed in detail in this paper, highlighting the traditional vs. memetic approach to PM, and emphasising the impact of a new memetic paradigm

Table 1: Impact of memetic approach to aspects of Project Management

Aspects of PM	Traditional Approach	Memetic Approach	Impact of Memetic Approach on PM
Evolution	PM evolves for the good of the organisation & individual.	PM evolves for the good of the PM memes.	PM is self-serving. It does not serve the individual or organisation.
Study & Practice	PMBOK® is a human construct, consciously designed, created and implemented.	PMBOK® has evolved by memetic selection. PMBOK® alters its environment to increase the number of projects.	PMBOK® validity reduced.
Project Manager / Project Team	Strategy to implement organisational objectives.	Actors created by PM memes.	Traditional role of project manager is questioned. Team creative output is a product of memetic evolution.
Profession	PMI® is a human construct, consciously designed, created and implemented.	PMI® has evolved by memetic selection to spread PM memes.	The PMI® is the way the PM memeplex spreads PM.
Knowledge Creation	Knowledge is constructed by a social system (scholars and practitioners).	Knowledge processes (memes) construct social systems (scholars and practitioners).	A new way of questioning the bastions of PM knowledge
Project Organisations	Project organisations are human constructs, consciously designed and created.	Project organisations are created by the replicating behaviour of PM memes.	Project organisations will prevail at the expense of the individual.

3.4 Traditional vs. Memetic approach

There is a major difference between the traditional approach and a memetic approach to PM research which can be illustrated by describing the shift in scientific thinking about the theory of evolution during the mid twentieth century.

Traditionally, biological evolution considered evolution occurring for the good of the species. Random genetic changes produce mutations in offspring, enabling a species to innovate and adapt to a changing environment, and natural selection eliminates unfit organisms from the landscape as a result of competing for finite resources.

Theories of cultural evolution have drawn strong parallels between biological evolution and the evolution of civilization, economy, and culture (Braudel, 1985; Kauffman, 1995; Morgan, 1997). A traditional approach to cultural and economic evolution considers evolution occurring for the good of the organisation (species). Individuals (organisms) and organisations (species) are considered to compete against each other for finite resources and adapting to the economic landscape (Fulmer, 2000; Kauffman, 1995). Fullmer (2000) uses this traditional approach when arguing that one organisational structure for successful adaptation is the use of teams and PM.

In the mid twentieth century a new “selfish-gene” approach to biological evolution began that considers evolution occurring for the good of the genes (Dawkins, 1976). In this approach it is the genes which are successful, or not, at replicating and getting passed on into the next generation. All biological life therefore, with all its complexity and subtlety is driven by the replicating behaviour of genes.

Dawkins (1976) takes this point beyond biology to cultural life suggesting that “all life evolves by the differential survival of replicating entities”. Moreover, he and others (Blackmore, 2000; Dennett, 2003) argue that there are non-biological or cultural replicators - memes. Memes can be considered to be recipes or instruction manuals for doing something cultural (Dennett, 2003); behaviours, words, or sounds that are copied from person to person. A memetic approach to cultural and economic evolution considers evolution occurring for the good of the memes. All cultural life therefore, including PM, is driven by the replicating behaviour of memes.

To apply memetic theory to PM we must treat memes as replicators in their own right. Within the context of PM, the evolution of ideas, concepts, theoretical models, methodologies and practices are all behaviours driven by self-interested memes. This is the major difference that separates a memetic approach to PM research from more traditional theories and methodologies.

Traditionally, PM is considered to be a conscious initiative, a means for individuals or organisations to control and adapt to their environment, and to make sense of the world in a reductionist way. Memetic theory suggests that PM behaviour is driven by our interpretation of reality; a reality largely created by the language we use.

3.5 How we make sense of our world

The world is too complex for human beings to understand, so we do not operate directly or immediately upon it, but rather we create mental models or maps of the world, and use these maps to guide our behaviour (Bandler & Grinder, 1975; Senge, Roberts, Ross, Smith, & Kleiner, 1994). Moreover, humans use a number of representational systems to build their mental maps; one of the most significant is language (Bandler & Grinder, 1975).

3.5.1 Mental Models

Senge (1994) suggests that these “tacit mental models exist below the level of awareness as images, assumptions, and stories which we carry in our minds of ourselves, other people, institutions, and every aspect of the world.” Like an optical lens subtly

distorting our vision, our mental maps determine what we see; and all of these mental maps are flawed in some way. Individuals therefore, including practitioners and academics, have incomplete or erroneous mental maps of PM. Moreover, these mental maps are created by the culture they are immersed in, and the language they use.

3.5.2 *Language Use*

Words, as influential as they may be, are really only imperfect labels for our human experiences. Humans are able to use social linguistics to categorise, organise, and filter their experience. Kofman (1994) suggests “that language is a medium through which we create new understandings and new realities, as we begin to talk about them. While a speaker creates language, language is also creating the speaker. In fact, we don’t talk about what we see; we see only what we can talk about”. Our language therefore shapes the landscape of our mental maps; and our mental maps filter our experience and subsequently shape our language use.

Bandler (1975) illustrates an example of this by describing how the human mind converts a sensation into a thing. “In the ordinary sentence: *The book is blue*. Blue is the name that we, as native speakers of English, have learned to use to describe our experience of a certain portion of the continuum of visible light. Misled by the structure of our language, we come to assume that *blue* is a property of the object that we refer to as book rather than being the name which we have given our sensation.”

I suggest the human brain has similarly misled us with PM. The language of the Project Management Institute (PMI®) through its ‘Guide to the Project Management Body

of Knowledge' (PMBOK® Guide) (Project Management Institute, 2000a) defines a project in terms of its distinctive characteristics – “a project is a temporary endeavour undertaken to create a unique product or service”. In this context, temporary means a limited period of time, and unique means that the product or service is different in some distinguishing way from others. In this definition a project is described as a collection of characteristic or attributes. However, neither the notion of a limited time period, nor uniqueness is a noun. The attributes of a project are all highly subjective. Projects are simply a synthesis of human sensation and expectations about how multiple resources are to be used. Viewing a project this way enlightens us to the fact that neither manager, team members, nor stakeholders are driving the project; the project is driving them.

3.6 Impact on study and practice of Project Management

As scholars, it is crucial that we recognise and acknowledge how the language used by PM scholars and practitioners is constructing our mental model of projects and PM (Delisle & Olson, 2004), restricting what we observe by the language they employ. In an implicit manner, the knowledge of the PM community has already set a course for our line of enquiry, subtly directing our attention to concepts and practices deemed critical. New discoveries made in traditional PM research are therefore described in terms of, and with reference to, our generally accepted professional guide, such as the PMBOK® Guide. Memetically, the PMBOK® Guide is considered to be a vehicle for recording and propagating a recipe for creating projects. It and other popular PM books (Mantel et al., 2001; Schwalbe, 2003; Shtub, Bard, & Globerson, 2005; Wsocki, Beck, & Crane, 2000) structured around the PMBOK®, are repositories for memes in the form of ideas, methodologies, and stories that have survived memetic selection, and are copied from one

person to another in the long history of human attempts to understand and organise the world.

The stories we construct to make sense of our experience, to give meaning to our actions and thoughts, are stories we have learned to construct (Kofman & Senge, 1993). These learnt PM stories, I suggest, are determined by the memes of PM scholars and practitioners. One story is that of the project plan, which traditionally serves the project manager as a map of the route from project start to finish (Mantel et al., 2001). However, memetics provides us with an alternative view of the project plan, exposing it as a language filter, limiting the project manager's experience and restricting their description of the project and its progress to generally accepted PM terms in an existential manner.

Traditionally the PMBOK® is considered to be consciously designed, created and implemented. Memetically it has evolved by memetic selection. This presupposes no design, only the appearance of it. Moreover, the PMBOK® through its application by practitioners is altering its environment to secure its own survival. It does this by influencing how practitioners are taught, and how organisations are constructed so as to increase the number of projects created. Having exposed the PMBOK® as self-serving its validity as a useful tool to individual practitioners must be questioned. The language (memes) of the PMBOK® and the behaviour it drives must be examined by a memetic approach. Doing so, we will enrich our mental model of the discipline of PM, and make visible that which had previously been outside of our collective awareness.

3.7 Impact on views of Project Managers and Project Teams

Kloppenborg and Opfer (2002) highlight how PM is used in all aspects and areas of commerce and industry, and predict this trend is likely to continue. They suggest “this increase is a genuine focus by executive management to improve their chances for success in both return-on-investment and in the quick and economic development and release of new products and services to the marketplace”. Moreover, they suggest that the role of the project manager will be vital to the implementation of corporate strategies and objectives.

Traditionally, the role of project manager is someone who consciously negotiates with project stakeholders, keeps the peace among team members, and tries to keep calm while all around them is chaos; while budgets and Gantt charts are not the main parts of the role (Mantel et al., 2001). Whilst the purpose of the project manager is to normalise conflict to a level where it is socially approved, the upwardly mobile project manager needs crisis to be managed and unique and special events to display a presence (Deetz, 1992).

Memetically, the role of project manager is a product (actor) of all the memes that have successfully entered the adaptive organisation (Fulmer, 2000) memeplex (a term used by Speel (1995) for groups of memes that replicate better as a group). In this context the project manager’s role is that of a copying machine, copying memes such as; time is money (Garcia, Kunz, & Fischer, 2005), fail to plan is a plan to fail (Dvir, Raz, & Shenhar, 2003), the project life cycle (Labuschagne & Brent, 2005), and Tuchman’s team-development sequence (Tuchman, 1965), and all this and more in a select environment, in a vast evolutionary process driven by competing memes. A memetic

approach would enable the “project manager” meme to be examined and the role of project manager to be questioned. In the future the value of such a role might be greatly reduced if the memes that create the environment of conflict required for the role of project manager to exist were to be identified and removed by fitter memes.

Traditionally, effective teamwork is seen as a key success factor in deriving a competitive advantage on the organisational landscape (Fulmer, 2000; Thamhain & Nurick, 1993). A team can be described as a social construct, a group of individuals who have come together for a definite purpose (Berger & Luckman, 1967). When asked to talk about their project team project managers inevitably talk about the skills and attributes of the individual members. The PMBOK® Guide supports this expression by presenting information as if the parts of a team are the sum total of its existence. However, we cannot grasp the functionality of the whole by just looking at its parts (Skyttner, 2001). Similarly, we cannot describe the effectiveness, character, and culture of a project team by describing its individual members. There is no such thing as human nature independent of culture suggests Geertz (1973).

Memetically, project teams are an effective means of replicating, evolving, and spreading PM memes. The role of the project team is critical to the whole project process. However, the team’s creative role can no longer be considered to be the sum of independent thinkers creating new ideas and solutions. Rather the project team is a copying machine, part of a vast evolutionary process, driven by the competition between PM memes. Does this mean that the project team is somehow on automatic pilot, a servant to the memes? I suggest not. A creative role for the project team still exists. A deep misunderstanding of Darwinian thinking is the idea that whenever a human

phenomenon is given an evolutionary explanation, whether it be genes or memes, we must deny that people think (Dennett, 2003). Thinking is crucial! PM memes cannot be put through the test of memetic selection on their own; they require their human hosts to run the evolutionary algorithm – to think. Memes are tools for thinking, and they have to be used in order for them to generate behaviour (Dennett, 2003). Memetically, we can view any creative output of a project team to be the result of an evolutionary algorithm, where memes are communicated, mutated, and undergo the process of memetic selection.

3.8 Project Management Memes: A holistic view

Dawkins (1976) argues that knowledge actively pursues goals of its own. This view is called memetics, the flow of ideas (memes) from one mind to another. The Oxford English Dictionary defines a meme as an element of culture that may be considered to be passed on by non-genetic means, especially imitation. Memetics presupposes that knowledge can be transmitted from one subject to another, and thereby loses its dependence on any single individual (Csikszentmihalyi, 1993b). Instead of seeing knowledge as constructed by a social system, as social constructivism would (Spivey, 1997), memetics defines social systems as constructed by knowledge processes.

To understand the meme paradigm or “meme view” in a natural sense it is necessary to suspend our normal model of the world. For example, consider a song as something that competes with other memes for access to the human brain. Once whistled, the meme has successfully replicated and achieved its purpose. Memes of course aren’t conscious, so they do not construct strategies to replicate, in the same way that genes are not conscious. Biologists however, find it useful to construct a metaphor that considers

genes as active agents strategising to replicate themselves, but in reality, natural selection preserves those genes that happen to “act as if” they are pursuing a strategy. The human mind, like it or not, is a host and breeding ground for memes (Blackmore, 2000; Dawkins, 1976; Dennett, 2003).

3.9 A better approach: Project Management Memeplex

Conceptualising PM as a memeplex presents scholars and practitioners with new ways of seeing and thinking about projects and their management, consequently providing new contexts for action in which individuals and organisations can express themselves and act. Previously hidden dimensions of PM can be exposed, and memes that are true or useful can be isolated from those that are false and misleading.

One characteristic of a memeplex is that false memes get copied along with true memes, as memes do not need to be true to be successful (Blackmore, 2000). A memetic approach will highlight what in our current PM knowledge is based on fact, tradition, or authority. Moreover, it will enable us to discover the memes that are involved in creating PM behaviour.

The PM memeplex has a legacy of memes from its roots in construction and continues to absorb economic and financial memes which possess great authority in capitalist societies. An example of this is the “bottom line” meme which is particularly dominant in management conversations. Moreover, organisational experts use memes such as; “assets-to-liabilities”, “return-on-investment”, “return-on-equity”, “after-tax-profit”. All of these are regarded as established means of determining whether an organisation is fit and healthy. Frame (2002) suggests that for the field of PM to evolve

into the mainstream of corporate management, new project managers will have to be versed in both the financial implications, and the “return-on-investment”, of the project endeavour. I suggest that a memetic approach to PM will uncover that a large amount of memes in the PM memplex are today being generated and replicated by University Business Schools. Moreover, as we continue to define organisational success in monetary terms our education systems (tertiary and secondary) seem more naturally an extension of corporate training (Deetz, 1992). Hewlett-Packard’s ‘Mission: Project Management’ (MPM) is an example of this which uses a business-based model to teach school teachers and student task scheduling, group roles and responsibilities, time and project management (Hoyet, 2004). Left unchecked, the “managerialist” memes will drown out non-management perspectives and stories.

3.10 Impact on the Project Management Profession

A memplex characteristic of PM is evident in the formation and membership of PM institutes and their journal publications. PM is finding its own feet in the world through its institutions, carefully defining its boundaries and establishing its knowledge base (Project Management Institute Standards Committee, 1996). The Australian Institute of Project Management (AIPM) is a case in point. To be a Member one needs to demonstrate at least five years relevant experience in PM (but not necessarily as a Project Manager) and have a minimum standard of education, or have successfully completed a PM course recognised or accredited by the AIPM (Australian Institute of Project Management, 2004). Either way, an AIPM Member is almost swearing an oath to, or declaring a belief in, the acceptance of PM knowledge as defined by its membership. In reality, individual project managers and project organisation may come and go, but the memplex called PM continues to create our language and shape the landscape of our

individual and collective mental maps. This is an example of the PM memplex altering its environment in a way that increases the chances of it being replicated. It does this by imbedding within itself instructions to pass it on (Thomas, Delisle, Jugdev, & Buckle, 2002b), and by describing itself as indispensable to those who use it (Deutschman, 1944; Stewart, 1995). Moreover, the PM memplex incorporates useful laws for business conduct such as professional ethics (Loo, 2002; Mantel et al., 2001; Project Management Institute, 2000b) that bind its practitioners into its professional community and consequently enhance their commitment to the profession (Wang & Armstrong, 2004).

A memetic approach to PM uncovers the missions of institutions such as PMI® and AIPM, which are to spread PM, shaping the behaviour of their membership, reconstruct organisations to facilitate this, and all this without paying attention to the needs of its individual members.

3.11 Impact of Memes on Creating Knowledge

A traditional evolutionary approach to knowledge building in the context of a project environment is that the construction of knowledge is an ongoing process at many different levels - biological, physiological, and social. It happens through a variation of existing pieces of knowledge and the selective retention of those which are new, which somehow contribute to the survival of subjects in their given environment (West, Smith, & Tjosvold, 2003). Any absolutism or permanence disappears in this approach however; knowledge is still a passive tool developed by subjects (project managers or team members in the project context) to help them in their quest.

A memetic approach is very different. Memes are considered to use biological, physiological, and social systems to their own advantage as copying mechanisms, helping them replicate and spread. In this light, the PM community, its body of knowledge, and even the role of a project manager and project team is a product constructed by an ongoing evolution of independent fragments of knowledge competing for position and dominance.

As previously mentioned, memes entrench notions or beliefs in the human mind even though they may be false (Blackmore, 2000). False however is not the same as “bad” for the believer. Meredith’s (1995) popular teaching of PM still puts forward the notion of the project life cycle, however Gersick (1988, 1989) strongly suggests that projects do not really evolve in this manner. This is a good example of the project life cycle meme at work, spreading even though it may be false. Traditionally, the project life cycle considers projects to be born, grow, wane, and die, rather like a living organism (Mantel et al., 2001; Shtub et al., 2005). However, a memetic approach would show the project life cycle meme to be a metaphor that illustrates how natural, organic, and non-threatening the practice of PM is; leaving us feeling safe, secure, and somehow familiar with the process, and open-minded to receive more PM memes. Another meme which may be false is Tuckman’s (1965) five-stage team-development sequence, still struggling for our attention since it has been proved to be an outdated or limited representation of reality (Gersick, 1988). A memetic approach gives us a new way of questioning the bastions of our PM knowledge.

3.12 Impact on Organisations

Our Human ability to mull over endless possibilities, to deal with distractions and still keep multiple goals and plans in mind, appears mostly to have grown out of a simple expansion in brain size (Greenfield, 2001). Blackmore (2000) suggests that our enormous human brain size has been created by memes, a product of genetic and memetic evolution. Projects and PM are therefore natural occurrences, and appear more and more in organisations not because of conscious boardroom decisions but because PM is an ancient product of our evolved human predisposition. PM is literally in our human and cultural nature. Söderland (2004) asks “why do project organisations exist?” Memetically, organisations have no choice in the matter if they are to roam around on the economic landscape of the future.

Fulmer’s (2000) research illustrates that a growing number of organisations are recognising that they are venturing into new, unfamiliar territory, and need to enrich their mental maps of the business landscape. He suggests that these adaptive organisations successfully use teams and PM as one structure to gain competitive advantage. An alternative memetic approach is that PM is shaping organisations for its own purpose, as memes about how to increase profits by delivering projects successfully begin to flood the organisational meme-pool. Project organisations may eventually dominate the economic landscape at the cost of creating highly unstable temporary work environments for individuals. We need to be aware of the memes in the organisational meme-pool and promote those that are beneficial to individuals.

3.13 New Directions and Questions for Future Research

Memetics allows us to describe how all human cultural behaviour, including PM, is driven by the same replicating process that drives the biological world. I suggest a new “memetic” research direction in the discipline of PM with the purpose to study, describe, and explain the memetic phenomena of PM in society, how it develops, spreads, and drives human behaviour.

Traditional PM research directions need not be abandoned, rather examined in a new way from a memetic perspective. Pinto (2002) suggests in his review of the current state of PM thinking that benchmarking and PM BoK unification are two principle directions in which traditional research has been evolving.

3.13.1 *Benchmarking*

Benchmarking refers to the search for best practice to allow industry to gain the advantage of a shorter learning time. Memetic research could identify and isolate the “best practice” memes in the PM memplex and memetically engineer them to be easily absorbed into any organisational structure. All organisations would then be able to gain the advantage of a shorter learning time.

3.13.2 *PM BoK unification*

Morris (2001) illustrates the need for unification of all BoK’s if the acceptance of PM among global organisations is to grow. A memetic approach views this unification as a “survival of the fittest” competition between PM memes, each one altering their

environment to increase their chances of being replicated. Examples of this would be opening institutional membership to anyone willing to pay the subscription; accrediting PM courses, text books, and professional certification; conferences; online resources; publishing journals, and even sponsoring a research study to investigate the challenges of selling PM to senior executives (Thomas et al., 2002b).

3.13.3 Questions for Future Research

I envisage a memetic paradigm of PM opening up the field of enquiry of PM. Future memetic research in this discipline could, as a starting point, pursue the follow two questions further.

Why do people individually and collectively believe in project management?

Fulmer (2000) considers PM to be one of the ingredients of the glue that holds the social structure of an adaptive organisation together. Spectator sports are memes. Sport, like PM, provides individuals with a sense of identity; it provides a common bond and united sense of purpose. Why do so many believe in PM? My premise is that PM appears to answer all sorts of human questions in the organisational setting such as; why are we doing this? Winch (2000) suggests that a clear mission is essential for effective PM. However, he also points out that missions are rarely truly clear as they are inevitably politicized and a result of complex negotiations and trade-offs (Winch, 2002). In this instance the PM “mission” or “vision” meme creates a feeling of purpose, but it is really only another story we learn to tell about the project. Further memetic research may uncover why we need to tell such stories.

Why does project management spread?

Traditionally, PM knowledge may pass from person to person by explicit means such as books, the internet, narratives, or academics teaching in university programmes. All these products and services are created by people to make our business lives easier and our organisations more productive. In a somewhat counter-intuitive way Blackmore (2000) suggests that memetic selection created them. A memetic answer is that all PM books, websites, courses, software, and professional institutions have evolved as a result of competition between memes.

Too much research in the reasons for project success and failure has been blamed for poor project performance (Bredillet, 2002; Söderland, 2004; Themistocleous & Wearne, 2000). Evaluating project performance has many dimensions (Kendra & Taplin, 2004; Pinto & Slevin, 1988), however a list of why projects fail can be easily found (KPMG, 2003; Matta & Ashkenas, 2003; The Standish Group, 2001). Ask a group of PM practitioners “why do projects fail?” and a consensus quickly develops. Such lists appear in the first chapters of many mainstream PM books and course notes. The “why do projects fail” meme is strong. Some of the content of such a list may be supported by empirical evidence, some may be a story we’ve learnt to tell. A memetic approach to PM is as interested in the idea of such a list and why it gets copied, as it is the content of the list that generates behaviour. There is no doubt that the actual contents of the list will suffer from errors as it gets copied across different media, in different context, over time. However, the meme “why do projects fail” continues to spread. The meme “why do projects succeed” would be more powerful at creating positive and constructive behaviour for individuals and organisations, but the meme “why do projects fail” wins the memetic

selection race. I suggest it wins by praying on our fears. Fear of uncertainty and of making the wrong decisions, fear of criticism or rejection for not conforming; or fear of failure and of appearing unprofessional (Elliot & Reis, 2003). Based on evolutionary psychology (Barkow et al., 1992), Brodie (1996) suggests that memes spread faster when they appeal to fundamental human instincts such as danger, food, and sex. Moreover, he suggests we have “buttons” around these subjects. Perhaps a memetic approach to PM research will show that PM spread because it presses our danger buttons.

3.14 Concluding Remarks

This paper has called on scholars and practising professionals of the discipline of PM to be aware of the mental models they use when conducting research or practising PM. I have put forward the case that the current traditional approach to PM research is distorting the reality of projects, and shifting our focus away from the important aspects of projects, their management, and how PM influences us individually and collectively.

I suggest that a memetic paradigm of PM be considered when indulging in this field of enquiry, and that a new memetic approach is initiated with the purpose of studying, describing, and explaining the phenomena of the PM memplex and its impact on society.

My purpose for drawing attention to the PM memplex is not simply to justify it, but to alert us to it. Not that we will be able to overcome it, as I do not believe we are able to step out of the evolutionary process and take it over. Rather that we should be aware of the illusions the PM memes create, try to identify those that more closely

describe reality, and observe or create environments where memes other than those in the PM memplex can evolve.

3.15 Acknowledgments

I would like to thank the anonymous referees for their valuable and constructive comments on previous versions of this paper.

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Chapter 4: A Phylogeny of Project Management

4.1 Preamble

This chapter is principally an incorporation of my published paper ‘The impact of Puritan ideology on aspects of project management’ (Whitty & Schulz, 2007). The purpose of this chapter is to build upon the previous, and attempt to understand today’s project management by examining its phylogeny.

An important aspect of this chapter is that it demonstrates that the essence of today’s prevalent Western project management has developed against a background of Puritanical elements which are favourable to the development of capitalism.

The work in this chapter has to date been cited in the literature with respect to emotion, attitude, and cultural norms (spirit) in the context of projects (Aronson, Shenhar, & Reilly, 2008); that project management's popularity is a result of cultural elements entrenched in society, fuelled by the agency effect of PMI, rather than a result of instrumental capability to deliver results (Sewchurran, 2008); and the imposition of control upon employees by methods that are underpinned by the principles of scientific management (Hodgson & Cicmil, 2008)

The impact of Puritan ideology on aspects of project management

4.2 Abstract

This paper examines the impact of Puritan ideology on various aspects of project management. By using a memetic approach to project management research, this paper traces the development of the ethos or spirit of project management from its Puritan origins. It argues that contrary to traditional thinking, project management has developed against a background of Puritan elements (memes) that are favourable to the development of capitalism. Moreover, it is suggested that these religious origins continue to impact in a conservative way on how the project management discipline evolves; limiting its development, oversimplifying the process of managing people, and consequentially thwarting nonconformists.

Keywords: history of project management, puritan ideology, memetic, spirit of project management, religion, doctrinal supremacy, protestant work ethic, scientific management, managerialism

4.3 Introduction

The origins of project management (PM) are traditionally considered to be deeply rooted in antiquity (Packendorff, 1995), with its present day methodology and body of knowledge (BoK) born out of the construction and military weapons industry (Cleland & Ireland, 2002). I suggest this is an oversimplification that portrays PM in a pragmatic and secular manner with no reference to its anecdotal, mythmaking, and religious origins.

PM is used today in all aspects and areas of commerce and industry, and this trend is likely to continue (Kloppenborg & Opfer, 2002). So why do people individually and collectively believe in PM, and why is it spreading so profusely (Whitty, 2005)? The reasons are more complex than those suggested by our traditional view of PM as an efficient method of increasing productivity. It has been suggested that one possible reason for the rising faith in PM is that it provides a sense of meaning, purpose, and control to work in a fast changing society that leaves many feeling threatened and insecure about an unforeseeable future (Whitty, 2005). I suggest one possible explanation for its profuse dissemination is that as a concept it survives better than any other in our Western capitalist corporate environment.

In this paper I employ a memetic approach to PM research (see (Whitty, 2005)) which observes over time the evolution of memes and the behaviours they create. I put forward the case that Puritan memes have influenced the development of the ‘spirit’ of PM. Furthermore, that these memes have evolved through, and been shaped by, the ideological eras known as Newtonianism, Liberalism, and Taylorism.

I begin with a brief overview of memes, how they spread, and how we can begin to observe them by the behaviours they create. Next, I highlight significant memes that provide the social backdrop for Western religiosity. I then define the spirit of PM, and subsequently illustrate the evolution of its inherited traits. Finally I reflect on the impact such Puritan origins have on various aspects of PM such as; how it evolves, how it is studied and practiced, the role of the project manager, the project team and the profession, as well as the impact on the project organization and how the PM body creates knowledge.

Figure 9 summarizes the influence Puritanism has had on the formation of memes that underpin the ideological eras known as Newtonianism, Liberalism, and Taylorism, and the influence they have all had on PM. Table 2 summarizes the final discussion of this paper and highlights the impact of Puritanical memes on aspects of PM.

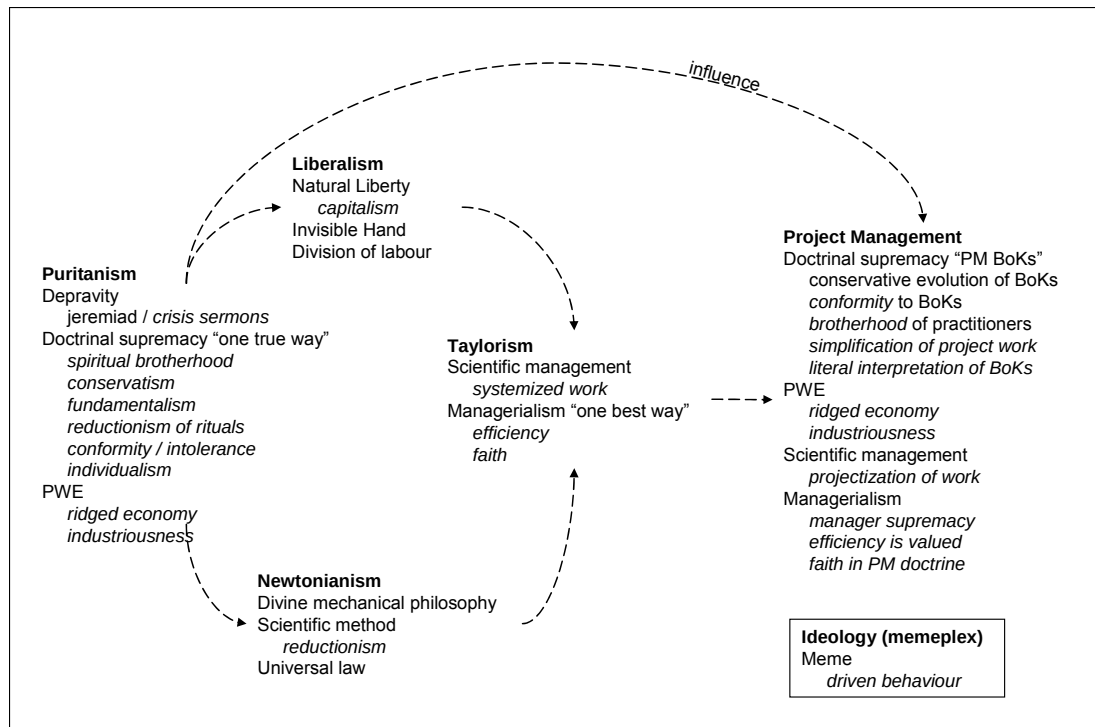


Figure 9: The evolution of Puritan memes and their influence on PM

4.4 Memes

Dawkins (1989) argues that memes behave in ways similar to biological viruses except that they spread from mind to mind. Gladwell (2000), without using the term meme, describes cultural trends as social epidemics that spread like viruses. He suggests that individuals contaminate one another with their preferences until a tipping point is reached and the effects of these preferences spread through a population. I suggest this is the case with PM, as various memes came together and mutated in the minds of some during the mid-20th century.

Table 2: The impact of Puritan memes on aspects of PM

Aspect of PM	Meme driven behaviour	Impact on PM
Evolution	Doctrinal supremacy <i>conservatism</i>	Traditional task orientated puritan work values reinforced. Values of mission, vision, and purpose reinstated. PM language reinforces dichotomist thinking. Traditional practices and BoK will be conserved. Formation of breakaway BoKs.
Study & Practice	PWE <i>industriousness</i> <i>ridged economy</i> Scientific management <i>projectization of work</i>	PWE continues to be designed into accredited PM training. PWE reinforced by competency certification and mandatory corporate accreditation. Complexity of problems is ignored by redefined problems simplistic and reductive project terms.
Project Manager	Managerialism <i>manager supremacy</i> <i>faith in PM doctrine</i> <i>efficiency is valued</i>	Project Manager is a moral agent, a guardian and advocate of correct PM doctrine and practices. Project Manager role is institutionalized securing promotional pathway.
Project Team	Doctrinal supremacy <i>conformity & intolerance</i> <i>brotherhood of practitioners</i> Depravity <i>jeremiad</i>	Team members conform and accept traditional PM teachings. Team member promote themselves as practitioners of the doctrine. Team members share a communal identity, struggle against the PM doctrine, and reinterpret events in light of that struggle.
Profession	Doctrinal supremacy <i>brotherhood of practitioners</i>	PMBOK® Guide provides guidelines for PM behaviour. Practitioners owe their allegiance to the profession. Conformity is premium, dissent is penalized.
Knowledge Creation	Doctrinal supremacy <i>conservative reductionism</i>	Restricted evolution of traditions and BoK. Complexity of reality is simplified and misinterpreted by use of metaphors and anecdotes.
Project Organisations	Doctrinal supremacy <i>fundamentalism</i>	Literal interpretation and application of PM doctrine. Senior management cannot conclude that PM is a waste of time and money.

4.4.1 Meme identification

PM has been described as a memplex (groups of memes that replicate better as a group) with the language, stories, beliefs and ideas of its scholars and practitioners at its core (Whitty, 2005). One way to identify the memes that are driving certain cultural activities is to observe the behaviours and language used by the individuals or group concerned with the activity. Those imbued with a spirit of PM could be detected by such behaviours as breaking down work into tasks, plan making, team forming, assessing risk,

and budget monitoring. They might also use words such as scope, deliverable, milestone, and Gantt. The memes that drive such behaviour and language are, I suggest, born out of the historical period known as the Reformation, and have evolved and mutated with others over time to form new memplexes or ideologies (collections of memes) such as Puritanism, Newtonianism, Liberalism, and Taylorism. Whilst this discussion focuses on particular memes that have led to the development of the spirit of PM, it must also be recognised that there are more general memes at work in Western society that provide the backdrop for religiosity, capitalism, scientific management and managerialism to evolve.

4.5 Memetic backdrop

There are memes that are largely common to all Western (Jewish, Christian, and Islamic) societies. The by-product of their replication creates behaviours which can be characterized as an obsession for control of one's environment and the pursuit of meaning. These memes drive our Western cultural and religious behaviour and make real our sense of humanity, consciousness, and meaning. Moreover, they fortify our illusionary experience of design, thinking, time and space.

4.5.1 *Humanity*

Rappaport (1999) suggests that the origins of humanity go hand in hand with the origins of religion, as no society is devoid of what observers would agree is religion. Further, he suggests that the human species can only live in terms of meanings it must itself invent.

When comparing human beings with other living things, most people consider the human species to be superior in inherent worth (Taylor, 2003; Tucker, 1994). It was Aristotle's great-chain-of-being meme which first ascribed hierarchical rank to every form of life (Numbers & Stenhouse, 1999; Tucker, 1994). Dawkins (2003) argues that our discontinuous mind, which describes the world in qualitative classes such as tall or short, black or white, organised or disorganised, falsely divides animals up into discontinuous species which are conveniently grouped and named. For example, the species category "apes" conveniently excludes humans. And whilst we might admit that we are like apes or descended from apes, we seldom realise that we actually are apes, particular African apes (Dawkins, 2003).

4.5.2 *Meaning*

Part of our humanness is to appropriate meaning where there is none. There is a common dissonance between physical and social laws. Physical laws and the affairs of our society contingent upon them will manifest whether or not these laws are known or not. In contrast, the social laws by which humanity lives are constructed, and not only increase our capacity to conceive the social world but to misunderstand the physical world too (Rappaport, 1999).

PM is successful at appropriating meaning to work. A memetic approach to PM regards a project as an elaborate construct where the description of progress is a story, restricted by PM language, where meaning is appropriated existentially (Whitty, 2005). Project managers frequently become so egotistically involved in the stories of their project that their identities are immersed in them, causing them to support their project

despite contradictory evidence, because failure suggests a threat to their own self-esteem (Brockner, Greenberg, Brockner, Bortz, Davy, & Carter, 1986).

4.5.3 Design

The design of all living things as well as ecosystems is an illusion (Dawkins, 2003). The illusion being that the former have parts that intricately harmonize and regulate to keep them alive, while the latter have species that do something similar (Dawkins, 2003). However, bacteria, fungi, plants, and animal that are with us today are the ones that have successfully *exploited* the others in their environment (Dawkins, 2003).

Blackmore (2000) argues that human foresight is, as is knowledge in humans, animals, or plants, brought about by adaptation. Human personal and interpersonal skills as well as intelligence and aptitude are well regarded in modern society. In the corporate and project environment the ability to plan, organise, and deal with unexpected events is further celebrated. As with plant and animal characteristics (Dawkins, 1996), human characteristics are the result of cultural, social, or memetic selection (Blackmore, 2000). The complex infrastructure of a modern Western society condemns certain behaviours and rewards others. Rewards take the form of cultural inclusion and acceptance through employment, promotion, and membership to a community that enables us to live and reproduce, passing our behavioural characteristics and tendencies onto further generations who will again undergo further selection. Human behaviour such as planning, organising, and deal with unexpected events, is therefore a hardwired product of interactions between genes, memes and the environment.

4.5.4 *Consciousness*

Dennett (2003) suggests that our minds, even our sense of self, the construct of ‘me’ and ‘I’, are an illusion created by the interplay of memes. The human mind being an artefact created as memes physically restructures the human brain to make it a better environment for memes.

4.5.5 *Thinking*

Bernstein (1996) suggests that our current ‘rational’ way of thinking began when humans abandoned the meme that events are due to the whim of the gods and embraced the meme that we are active, independent agents who can manage risks. Our language furnishes the world with qualities like good and evil, abstractions like democracy and communism, values like honour, valour, generosity, and imaginary beings like spirits and gods. All of these are reified, made into real “things”, by social actions contingent upon language (Rappaport, 1999).

The language of PM dichotomizes our thinking of the project environment and filters our experience of it. If project progress is poor, the project team may be frowned upon. If progress is good, they might be hailed as heroes. Thinking in this way we tend to make generalisations and simple assumptions about the way the world really is.

4.5.6 *Time & Space*

The evolution of human thought and cognition has no doubt been influenced by our obsession with monitoring time (Suddendorf & Corballis, 1997). Western religions

reflect on historical divine actions to give significance and meaning to their beliefs (Moran, 2001). However, most Eastern societies create an impression about time experimentally rather than purely cognitively, seeing continuity and connectivity between life cycles and generations; history being more of a reflection on human action (Moran, 2001). Generally speaking an Eastern (Buddhist, Hindu, Taoist) perception of time is global and circular, whereas the Western (Jewish, Christian, and Islamic) Newtonian perception is temporary and linear (Abi-Hashem, 2000).

Western societies are conditioned by time. Before the standardization of US time zones in 1883 time consciousness was something of a novelty as numerous local time zones had existed. From 1883 on, time was no longer to be announced by the rising sun or the church clock; it was to be measured and announced by managers (Crainer, 2003), and the conservation and efficient management of time and physical space would be deemed a virtue.

A memetic approach to PM highlights that it is only the methodologies and technologies that focus on the acceleration of time, as opposed to the slowing of time, which survive in a Western capitalist culture. A PM that comprises all aspects of time such as speed, slowness, waiting, pausing, and hesitating, could reveal and promote completely new possibilities (Geißler, 2002).

4.6 The spirit of project management

The spirit of PM can spread across a company (Dinsmore, 1998). The spirit is different to PM per se, in that it illustrates the ethos, disposition, or fundamental values of

a community or brotherhood of practitioners. It has been characterised as a component of project leadership that creates and energizes a team's morale, directs their activities, and saves managerial time (Shenhar, 2003). The spirit can be further observed by how the PM literature places more emphasis on tools, techniques, and processes than it does on cultural aspects (Henrie & Sousa-Poza, 2005). The spirit is a philosophy of control and use of existing resources (Kerzner, 1998b). In essence the spirit of PM can be characterized as a systematic, methodological, and frugal approach to the management of time, cost, and resources, including people, for its own end.

The spirit of PM is well established in both social and corporate settings. Some regard it as commonsense thinking and the natural outcome of logical reasoning about how work should be done. I have observed the spirit of PM as evangelical praise, admiration, and recognition for project managers who completed projects on time and within budget. These are also qualities cited in recruitment advertisements for project managers. Organisations have even been called upon to build a skilled cadre of project managers as a strategy for gaining competitive advantage (Peters, 1991).

A memetic approach to PM questions the inevitability of the existence of the spirit of PM. I suggest it has been brought about by a particular world view that can be traced back through the ideological eras of Taylorism, Newtonianism, and Liberalism, to Puritanism which has itself significantly influenced the nature of Western society.

4.7 Puritan ideology and Capitalism

Commentators on capitalism argue that its existence is inevitable, that it is fundamental to human nature. Weber (2002) argues against this, suggesting that the ‘spirit’ necessary for capitalistic activities is not inevitable. Moreover, that modern capitalism prospers because Western society has embraced particular habits and internalised certain values. In an attempt to understand the evolution of Western capitalist cultural we must appreciate the complex relationship between the economic environment and social values. Moreover, we cannot talk about social values without discussing political and religious views, and there are significant characteristics of our modern Western capitalist culture, including PM behaviour, that have been powerfully influenced by the Reformation.

4.7.1 *Reformation*

The Protestant Reformation was brought to the fore in the early-15th Century when Martin Luther (1967) protested against the Roman Catholic (Catholic) practice of selling indulgences. He argued that salvation was a free gift to each individual and that it was not necessary for a priest to perform the sacrament as a means of salvation. England’s religious reform movement was based on that of Luther’s, and in 1529 Henry VIII summoned the "Reformation Parliament" and severed ties with the Catholic Church. The Church of England replaced the Catholic Church, and though there was a brief restoration to Catholicism under Queen Mary I, her successor Queen Elizabeth I grew England into an industrious and strong God fearing nation devoted to a Protestant work ethic.

4.7.2 Protestant or Puritan work ethic (PWE)

Before the Reformation, Western people did not see their occupations or businesses as being ‘in service’ to God. Rather, work was perceived as a necessary evil, a means to an end not an end in itself. Weber (2002) points out how the word ‘calling’, a product of the Reformation peculiar to Protestant peoples, has the religious connotation of a task set by God. This meme developed by Luther (1967) gives religious significance to worldly activities, specifically work. For Protestants, serving God meant participating in, and working hard at worldly activities, as this was part of God's design and purpose for each individual. Working hard is seen as the means of showing ones love and appreciation for God.

Luther himself was a traditionalist. He did not have the spirit of capitalism (the pursuit of wealth for its own sake). However, his meme evolved in the environment of the different Protestant churches that practiced self-denial, rigid economy, and advocated strict religious discipline and virtuous conduct.

4.7.3 Puritanism

The Puritans were informed, committed, and radical Protestant fundamentalists who were united in a spiritual brotherhood. The depravity meme underpins the Puritan world view. This meme suggested that all things are naturally depraved, in a state of chaos, and in need of purification. For the Puritans the Reformation had brought the Church under the control of the monarchy while leaving its religious practices mainly intact, and made religious doctrine subservient to politics (Gill, 1970). They argued for a restructuring and purification of church practice through biblical supremacy and a belief

in the priesthood of all believers. That is to say that religious and moral authority is grounded solely in Scripture, and that God is equally accessible to all individuals. Individualism is therefore implicit as they had established the individual as the rightful interpreter of the Bible independent of an inherited social and cultural order. Reductionism is a by-product of their beliefs as they reduced and pared away the ceremonies and creeds of the Church to its barest essentials, with emphasis on clear and simple ideas and forms of ritual life (Albanese, 1998). Often called dissenters, they were barred from professions that required religious conformity and this forced them to become active in new industries. They dominated the import/export business and were enthusiastic to colonize America.

The depravity meme drives behaviour such as the crisis sermon or jeremiad, which are bitter laments of the state of society and its morals with prophecy of its impending downfall (McKnight, 2004). Baxter (1833, 1950, 1997), one of history's memorable and influential Puritan preachers, objected to relaxation, idleness, and distractions (possessions) to the pursuit of a righteous and meaningful life. Work is regarded as so important that people should consider that life has no purpose or meaning without work. The result of an industrious lifestyle was a community that was wealthy and industrious. These proto-capitalists saw their wealth as a gift from God and they stamped out anything that might interfere with their way. Non believers were considered to be in error and were not to be tolerated.

Puritans did not talk of the accumulation of personal wealth, per se, until Adam Smith (1892) justified it as part of the natural and divine plan for mankind. This justification took the form of a meme called natural liberty.

4.7.4 *Natural liberty*

Smith (1892) is often thought of as the forefather of capitalist thinking though he never used the term capitalism, preferring to describe it as an economic system of natural liberty. He suggests that even though human nature is self serving, as long as every individual seeks the fulfilment of their own self interests the material needs of the whole society are usually met. Further, for society to benefit there must be no monopolies so competition can operate freely, creating a tendency to keep prices of products in line with consumers' needs.

It is important to note that the term 'natural' has significant meaning for Smith. This meaning is best illustrated by considering his 'invisible hand' meme on which he constructed his political economy, sanctioning self-interested behaviour in an attempt to reconcile the dissonance of how a society of selfish individuals could be created by a beneficent God.

4.7.5 *Invisible hand*

Smith's (1892) invisible hand meme is a metaphor for the apparent guided behaviour of self-interested individuals to promote an end that benefits the whole of society that was not a part of his/her original selfish intention. Smith's philosophical argument was inherently theological, providential, and deterministic, and endeavoured to reconcile the two conflicting human propensities that selfish individuals build virtuous societies. He justified the complexity of self-serving human characteristics as a mechanism used by the Deity to unfold a divine plan that is not now, nor can ever be, apparent to humans. Today the invisible hand meme continues to provide a resolve to the

dissonance between selfish and virtuous behaviour, and continues to spread through mainstream university economics textbooks with no mention that the hand is that of the Deity (Hill, 2001; Viner, 1972). However, carriers of the meme are implicitly justified to feel that their selfish behaviour can in the long term be virtuous. During his time Smith established a new liberalism, in which the social organization is seen as the product of human action but not necessarily of human design.

As well as being figuratively responsible for the natural liberty and invisible hand memes, Smith (1892) also described the division of labour, a meme with significant influence on the spirit of PM.

4.7.6 *Division of labour*

The division of labour meme can be characterised as a scientific approach to management. A possible mutation of it is the efficiency meme which was heavily drawn on by the scientific management movement of the early part of the 20th century, and still has relevance for many managers today (Fairholm, 2004). A version of the efficiency meme could be Gulick's (1937) POSDCORB (planning, organizing, staffing, directing, coordinating, reporting, and budgeting) meme that adhered to Fayol's (1949) tenets or principles of organisation and management (forecast and plan – prevoyance, organise, command, co-ordinate, control), and Taylor's (1915) framework for organisation (clear delineation of authority, responsibility, separation of planning from operations, incentive schemes for workers, management by exception and task based specialisation). All these examples are strong precursors for the PM we recognize today.

Smith (1892) however, did fear that the division of labour would de-skill society, proposing the solution of government investment in public education. Taylor (1915) further believed that society would be greatly enhanced by improving the efficiency of production through a scientific approach to management.

4.8 Scientific management

The scientific revolution (a prelude to the wider Enlightenment movement) refers to the historical changes in thought and belief that unfolded in Europe somewhere between 1550 and 1700 A.D. Its beginning is marked by Nicholas Copernicus (1473-1543), who asserted a heliocentric (sun-centred) cosmos; and it ends with Isaac Newton (1642-1727), who proposed universal laws and a mechanical universe (Ferngren, 2002).

It was Descartes, a significant influence on Newton, who argued that God had created the universe (including animal life but not humans) as a perfect clockwork mechanism that functioned deterministically thereafter without intervention (Bell, 1986). However, it was Newton who marked the shift from a closed, finite, hierarchical, qualitative cosmos to an infinite, homogeneous, quantitative universe. In short, Newton's meme was the universal law that all things are one; one matter, one space, one time, and one set of laws.

The meme of a clockwork universe in which big problems can be broken down into smaller ones, analysed, and solved by rational deduction, has strongly influenced science, engineering, medicine, and organisational leadership. Conventional management thinking assumes that work and organisations can be thoroughly planned, broken down

into units, and optimised (Morgan, 1997). As with Adam Smith and Descartes, Newton's new science of post-Restoration England was consciously religious in inspiration and implication. Newton believed that the discovery through experiment of certain immutable laws governing the physical world was proof positive of a divine omniscience and will (Holmes, 1978).

The industrial revolution hailed new challenges in management and organisation, and new methods for dealing with these issues were needed. Taylor (1915), a man whose passion for constant improvement was heavily influenced by his Quaker roots (Kanigel, 1997), employed the scientific method to systematically analyse human behaviour at work, and began to create a science of management. His scientific management model for complex organisations was based on the idea of a machine where individual people are the equivalent of machine parts, both being interchangeable and cheap. The task-oriented optimization of work or Taylorism meme influenced the breaking down of work to its smallest task or unit to figure out the universal law or 'one best way' to do each job. Taylorism spread successfully because productivity using its methods went up dramatically.

Taylor's (1915) meme of scientific management and Gulick's (1937) meme of administrative management are the foundations of classical organizational theory that underpin innumerable companies and bureaucracies today. The Gilbreths (1953) built on the scientific management meme by using human motion studies to simplify work. They improved efficiency by categorizing and eliminating unnecessary or repetitive motions. Henry Gantt (1960) (known for the Gantt chart), an associate and protégé of Taylor, contributed the "pay-for-performance" meme. This was where workers are rewarded for

achieving higher levels of productivity, and not punished if they didn't; and where all workers are trained and their managers rewarded for training them.

A significant memetic influence of the Puritan depravity meme and the Newtonian mechanical philosophy on Taylorism brings about the meme of managerialism. This states that people need to be managed and there is one universal true way of doing so. Its central doctrine is that all things, particularly organisations, can be optimised by the application of generic management skills and theory. In short, it is the pursuit of efficiency. It consists of four components: efficiency as the primary value guiding managers' actions and decisions; faith in the tools and techniques of management; a class consciousness among managers; and a view of managers as moral agents.

To summarize, memes provide the backdrop to our religiosity and construct the illusion that we are a special species, more awake to the world than others, with the ability to discover our predestined purpose. Memes drive us to solve social puzzles and appropriate meaning where there is none. They also influenced the Protestant and subsequent Puritan ideology, the central memes of which were depravity, doctrinal supremacy, and the PWE (Figure 9). Consequentially this led to a conservatism and fundamentalism, where knowledge is considered to come from one traditional source, and where the interpretation of that source is literal. The Puritans reduced their ceremonies and creeds to bare essentials, and established the individual as the interpreter of the Bible, which led to a strong sense of individualism. Combining this with effects of the PWE meme produced an industrious and wealthy community that practiced a ridged economy.

Newtonianism marks the era of scientific enquiry. Newton's science was formed around the themes or memes of natural philosophy, where nature results from the mechanical interactions of particles; and the Hermetic tradition, where nature results from alchemical and magical concepts. Newton pioneered the scientific method which was a revolutionary meme for investigation, and by its application he formulated universal laws of nature.

Liberalism marks the era from where the reformed teachings of Protestantism would ignite a work ethic that would drive the economic traits of capitalism. Adam Smith was but one who provided the meme, the intellectual rationale, for a natural liberty that was invisible and divine by design, and further endorsed liberalism with the division of labour.

Taylorism marked the era of efficiency. Taylor embraced liberalism and applied Newtonian science to the corporation. From then on work was to be systemized, efficiency glorified, and the managerialism meme would complete the foundation for the spirit of PM.

I suggest the spirit of PM emerged from the unification of four significant memes that were influenced by Puritanism, namely; doctrinal supremacy, PWE, scientific management, and managerialism. Doctrinal supremacy places various PM BoKs around the world as sources of authority for project activity. This drives behaviour that conserves and restricts the evolution of the BoK, enforces conformity, binds practitioners in a form of brotherhood, simplifies the complexity of project work, and fosters literal interpretations of the BoK. The PWE presents work as a virtue. This drives industrious

behaviour that is powered by a rigid sense of economy of time, cost, and resources. Scientific management introduces a task orientated and mechanistic approach to management and leads to the projectization of work. Finally, managerialism endorses project managers (persons imbued with the spirit of PM, who show allegiance to the PM profession, and regard efficiency as the primary guide for their actions) as the interpreters of PM doctrine.

4.9 Aspects of PM

I suggest that the spirit of PM influences various aspects of the PM discipline, such as; Evolution, Study & Practice, Project Manager, Project Team, Profession, Knowledge Creation, Project Organisations, and consequentially impacts upon them in significant ways.

4.9.1 Evolution

A doctrinal supremacy amongst PM practitioners leads to a conservatism that supports the traditional work values of a Western capitalist society. The PM doctrine seeks not only to conserve these values, but reinstate others such as mission, vision, and purpose. Through its language it simplifies the world, dichotomizing thinking and branding behaviour; success or failure, efficient or inefficient, on time or late, manager or team. PM will portray itself as progressive, but any advances will be only small incremental ‘safe’ changes, whilst most of its practises are conserved. PM is well adapted to the business landscape. Any major changes would jeopardize its survival. However, there is always the possibility of breakaway denominations forming with their own

peculiar fundamentalist interpretation of the PM doctrine. The emergence of P2M in Japan is an example of this.

4.9.2 Study & Practice

The Project Management Institute's (PMI) member code of ethics states "it is vital that PMI members conduct their work in an ethical manner in order to earn and maintain the confidence of team members, colleagues, employees, employers, customers/clients, the public, and the global community" (Project Management Institute, 2000b). This conceptualises the spirit of PM in terms of a work ethic where the trust of others has to be earned. Further, the pledge is founded on the principles of the pursuit of excellence in ones work. Moreover, it highlights a member's obligations to their behaviour, one of which states that a member should conduct their activities in a manner that "will maintain appropriate, accurate, and complete records with respect to such research and professional activities". Puritans often preached sermons on themes such as care about detail in work, the need for absolute trustworthiness and reliability, and honesty in fulfilling contracts or agreements.

These PWE behaviours will continue to be designed into the teachings of PM training courses that are sanctioned by PM professional bodies. Further, the practice of such behaviours will be measured and rewarded by the certification of competency standard which are already being extensively used (Crawford, 2005).

An example of this is the Australian Government's Defence Material Organization (DMO) where large numbers of project directors and project managers are obliged to

become members of the Australian Institute of Project Managers (AIPM). Also, there is a mandatory requirement for the competence of all DMO project directors and managers to be measured against the DMO's Program Managers Certification Framework which includes and goes beyond that of the AIPM's Registered PM (RegPM) Certification Program. The US Department of Defence (DoD) has likewise developed its own extension to the PMBOK® Guide (Bahnmaier, 2003). In the case of the DMO it is likely that there will be a future mandatory requirement for all subcontractor organisations to impose similar requirements on their project staff.

The practise of PM and the implementation of projects is today regarded as significantly important to every level of society (Lundin & Hartman, 2000). In short, a projectization of civil society has taken place (Sampson, 1996), and this causes complex social problems to be redefined into simplistic understandings and reductive terms (Tendler, 2002). Consequentially this fractionalizes problems and ignores complex interdependent behaviours. Projectism is a form of Newtonian universalism, a clockwork approach to getting things done. And in some settings it is proving to be a problem rather than a universal solution (O'Donovan, 1995; Tendler, 2002).

4.9.3 *Project Manager*

Much of a project manager's behaviour is driven by the managerialism meme. It presents him/her as an advocate for the spirit of PM in the sense that they will propose to their corporate culture, and society in general, a set of work ethics that are purported to be the very foundation of good organizational practices and a foundation for building a productive and compassionate organization. In this way project managers will become

more or less the guardians of managerial normality, keepers of the PM faith, which further validates the assumptions of managerialism.

Managerialism will ultimately transport PM to the executive level. Schuler (1990) characterizes the effect of managerialism by the shift in function of Human Resource (HR). Traditionally HR functioned as an employee advocate, under managerialism it has become a core member of the management team requiring HR professionals to be concerned with the bottom line, profits, and organizational effectiveness (Huemann, Turner, & Keegan, 2004). HR issues are therefore addressed as business issues, and this is how HR managers have secured a place for themselves on the management team. Project managers are likewise making themselves indispensable (Gedansky, 2002). They will strive to become core members of the management team and finally achieve a promotional pathway for their profession. With the underpinning structure of the profession institutions and their influence on professional certification and corporate accreditation, the role of the project manager will be institutionalized.

4.9.4 *Project Team*

The project team can be likened to that of the PM laity in that they conform and accept its doctrinal supremacy by participating in and accepting the teachings of, the rites, rituals, and life of the PM belief system, but are not able to administer the faith and proclaim PM as a certified project manager would.

The team meme implies more than just cooperative effort. It suggests a common identity, comradery, a brotherhood of mutual respect and ethical behaviour where

members continue to unite in the struggle of conflicting management opinions. Project events too will be reinterpreted in light of this struggle, in a jeremiad manner, suggesting that team members still have a long way to go to master the PM doctrines.

Ethical behaviour is considered by employers to contribute to the bottom line (Bowie, 2004). Consequentially, employers try to hire ethical people because those with strong moral and religious values are less likely to behave opportunistically and will be more productive (Bowie, 2004). Project workers therefore promote themselves as having such attributes.

4.9.5 Profession

Those of the Victorian era embraced agnosticism and atheism and were anxious to maintain Christian morality without Christian belief. They were however unsuccessful at maintaining that social capital. There was a public ideology that posed the question ‘what are we all here for?’ and believed that the answer was to achieve our best selves. This ideology continues to underpin how we organise society today with structures such as professional bodies, sporting associations, political groups, bowling leagues and gardening clubs, all rich in ritual, thereby affirming the place and relationship each individual has in the brotherhood with one another (Putnam, 2000). With the demise of religion and the disappearance of large manufacturing environments that once enforced a work ethic, project workers will be implicitly united by their BoK in a brotherhood of practitioners, and provided with guidelines for their behaviour.

The PWE assumes that people will work hard putting the needs of their organization before their own. I suggest that a PM professional body will create a state of affairs that will cause conflicting allegiances. If a project is to be considered a temporary organization within an organization, and PM is to be acknowledged as a virtuous profession, does a practitioner owe their allegiance to the project, the organisation, or their profession? I propose the profession will win as projects and the business of corporations becomes transitory. Peters (Peters, 1991) used the word “cadre” when referring to project managers. It is worth noting this is a term used to describe the inspired founders of political cults (Tourish & Wohlforth, 2000). A PM professional body may foster cult like traits, as there is an ideological conviction of PM that strives toward perfection; the one best way to manage resources, to schedule, to build teams, etc. Such professional bodies have membership ranks which are awarded for allegiance to, and competency of, the PM doctrines. Authority figures tell those who are vulnerable what to do, and those who follow through the proposed action find that each small step makes it easier to take the next step (Tourish & Wohlforth, 2000). Conformity is a premium, dissent is penalized.

4.9.6 Knowledge Creation

Current and future members of the PM profession may feel that they are in receipt of special knowledge from a traditional source (e.g. PMBOK® Guide) in the same way that the Puritans consider their writings to be factually accurate, and thus inerrant. I suggest this will lead the PM profession to a type of religious conservatism, where the evolution of traditions and knowledge is restricted. Those organizations who have

invested time and money in gaining PM accreditation will surely not welcome a radical overhaul of the criteria.

Doctrinal supremacy leads to knowledge creation that is constrained by conservative reductionism. Our traditional approach to knowledge building in PM is constructivist which considers the individual as an active agent or constructor of knowledge, creating a reality from the sensory input of their experiences. This sense or meaning-making perspective highlights the complex socio-psychological processes through which individuals in an organization interpret and misinterpret phenomena and thus socially construct or enact their ‘realities’ (O’Connell, 1998; Weick, 1995). Unavoidably over time, the individuals’ stories become distorted and simplified (using reductive mechanical or ecological metaphors and anecdotes centred around the language of the PMBOK® Guide) due to cognitive or political reasons (Barley, 1990).

4.9.7 *Project Organisations*

The project organisation is one in which the project is the primary unit or business mechanism for coordinating and integrating all the main business functions of the organisation (Hobday, 2000). Such embodiment of PM ideology is a form of fundamentalism.

AAPT is an example of this. As one of Australia’s three largest telecommunications and internet carriers it has invested heavily in PM (Microsoft, 2005). AAPT with the assistance of the AIPM have restructured their organisation in the form of a PM business unit (PMBU) (Newton, 2005). The spirit of PM is noticeable in their

organisational philosophy; “we not only achieved our goal of PMO Level 5 but exceeded our timeframe in doing so in just 6 months”, “we have achieved our goals faster and more thoroughly, thereby benefiting our customers earlier than planned, an achievement which has not gone unrecognised” (Newton, 2005). It is clear that speed and apparent efficiency is rewarded, but not so clear what benefits were realized for the customer.

AAPT have committed time to learning PM techniques and using the process, while senior management have spent organisational money on the implementation of Microsoft’s PM software, in turn putting their professional credibility on the line. AAPT project managers and senior management would suffer a dissonance if they concluded that PM was a waste of time and money. People work to reduce the dissonance between incompatibles (Cialdini, 1994; Festinger, 1957), and one way to reduce the dissonance is for all concerned to have faith in the PM doctrine.

4.10 Concluding remarks

In this paper I have argued that by observing the behaviour of PM practitioners, their organizations and professional associations, a strong case can be made that PM behaviours are being driven by significant memes that are either directly Puritan or have evolved from Puritanism. Further, that consequentially the impact of such memes on the discipline of PM, particularly its practitioners, is considerable.

Of most concern is the canonization of the PM BoKs. As a PM practitioner I harbour the hope that scholars and practitioners are evolving the discipline in a free and unconstrained manner, the result of which I further hope will help me personally in my

work. My argument suggests this is not the case, and that the framework and content of the various BoKs has been locked down. I suggest that a significant amount of PM journal papers and text books reinforce the spirit of PM, reinterpret past BoKs in a new light (e.g. PMBOK® Guide Third Edition), or highlight “ways to cope” with the project environment. Through no fault of their own, scholars and practitioners alike are being driven by powerful memes that not only drive their behaviour but create the very fabric of their society. We owe it to ourselves to break free of the tyranny of these Puritan memes. But first, we must acknowledge that our past and present actions have been determined by them.

4.11 Acknowledgments

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Chapter 5: Where Projects and Project Management Thrive

5.1 Preamble

This chapter is principally an incorporation of my published paper “Projectistan: where projects and project management thrive, and appearance trumps productivity”, which is a revised version of a previously published conference paper called “_THE_ PM_ BOK_ CODE”. The purpose of this chapter is to illustrate how social / cultural selection occurs in the context of the project management environment by using the metaphor of the theatrical stage. Furthermore, it reveals the role impression management plays in creating a competitive advantage for practitioners and reducing anxiety in project stakeholders.

Some important aspects of this chapter are that those who embrace or create the pretence that they embrace the cultural norms of the project management environment can gain a benefit or competitive advantage from doing so; and that project management has the potential to rationalise the fractionalisation of the workforce, which will ultimately benefit the corporations rather than individual people.

To date, the original conference paper “_THE_ PM_ BOK_ CODE” has not been cited in the established journals. However, it has been discussed extensively on various project management blogs (see (De Baar, 2008)). Furthermore, it ranks number one, with a download count > 40,000, in the top fifty most downloaded papers in the University of Queensland’s institutional digital repository UQeSpace (UQ Library, 2009).

Projectistan: where projects and project management thrive, and appearance trumps productivity

5.2 Abstract

An evolutionary framework for project management research is advanced by presenting the argument that the PMBOK® Guide version of project management is prevalent in the West because it is a well adapted collection of memes. The paper draws on empirical evidence from a variety of disciplines and considers how note worthy Western memes drive a particular self-sustaining cultural environment called Projectistan where the concept of projects and project management thrive. The paper establishes how cultural selection takes place in Projectistan by using the metaphor of the theatrical stage, and shows the role impression management plays in creating a competitive advantage for practitioners and reducing anxiety in project stakeholders. The paper concludes by suggesting that project management is currently evolving in a toxic manner, and that left unchecked, corporations will ultimately reap more benefit from it than individual people.

Key Words: PMBOK, memetic, impression management, Projectistan

5.3 Introduction

Why is project management (PM) so prevalent? Even though the discipline of PM is ubiquitous in Western society it exhibits many inexplicable and contradictory aspects. The prevalence of PM continues to increase across all business sectors and all geographical regions, with companies suggesting that projects are a vital contributor to future business success, and that projects are the key enabler of business change (PIPC, 2005). PM accreditation and certification (e.g. PMP and PRINCE2) is also consuming more of corporate training budgets than ever before (Kerzner, 1998a). An increasing amount of Universities are creating and delivering Bachelor of Science and Master of Science in PM courses. And at least one corporation is supporting the teaching of PM at high-schools (Hoyet, 2004). The bulk of such training and teaching is modelled on the Project Management Institute (PMI®) Guide to the Project Management Body of Knowledge (PMBOK® Guide).

However, despite the prevalence of PM, organizations report that project failure is commonplace (Holmes, 2001; KPMG, 2003; PIPC, 2005; The Standish Group, 2001). It is therefore valid to ask why PM is so widely and commonly occurring, accepted, and practiced, when it still fails to live up to expectations (Economist, 2005)?

Methods for reasoning an answer to this question extend across the traditional and non-traditional. Traditionally, PM is considered to enable individuals and organizations to be more successful in project delivery and thereby improve business performance (Kerzner, 1998a). However, PM literature rarely attempts to make any real causal connection between business performance and the application of PM. Non-traditionally,

a social evolutionary framework for PM research puts forward that PM behaviour is a consequence of the natural selection process of ideas and behaviours (memes), and whilst not an adaptive trait itself that is essential for the survival of the human species, PM does indirectly support and enhance the existence of its human and corporate practitioners (Whitty, 2005; Whitty & Schulz, 2007).

This paper sets out to advance the theory of this evolutionary framework for PM research by considering the following theoretical position:

The PMBOK® Guide version of PM is pervasive in Western Corporate culture because it is a well adapted collection of memes (replicating ideas and/or behaviours) that have constructed a particular self-sustaining cultural environment which reinforces the values of capitalism and instils the feeling of control in others.

To support for this position I draw on theoretical and empirical research from a range of fields including behavioural biology, psychology, sociology, neuroscience, anthropology, and more recently memetics.

I begin with a definition for memes and present the argument that humans are hardwired for memes and that memes are the engines or drivers of cultures. I explain how some Western memes account for the behaviour we commonly recognize as PM, and reflect on how a particular cultural environment which I call ‘Projectistan’ has evolved where PM and those individuals and organisations who profess PM thrive.

Next in an attempt to create a representation of how social/behavioural traits and therefore individuals are selected within Projectistan I employ the metaphor of the theatrical stage and illustrate the role impression management plays in creating a competitive advantage for practitioners and reducing anxiety in project stakeholders.

Finally, I close the discussion by contemplating the subjugating effects this situation has towards humans.

5.4 Memes

5.4.1 *A definition*

Memes are cultural or non-biological replicators (Blackmore, 2000; Dennett, 2003). They can be considered to be recipes or instructions for doing something cultural (Dennett, 2003) such as behaviours, artefacts, words or sounds, and they are copied from person to person. Managerialism is considered to be one of the memes that drives PM behaviour. This meme suggests that people need to be managed and there is one universal true way of doing so (Whitty & Schulz, 2007). See (Whitty, 2005) and (Whitty & Schulz, 2007) for further explanation of memes in the context of PM.

5.4.2 *Hardwired for memes*

The term ‘human nature’ is a generally agreed upon to describe a bundle of tendencies shaped by the evolutionary processes of natural selection. With regard to the physical body, all humans share a common or universal genome which is the genetic

information in DNA that directs the physical construction of each individual. A set of genes in DNA is called a genotype, and the physical expression of the genotype, characterized by the body and its behaviour, is called a phenotype. Our phenotype (our nature) is therefore a result of the bidirectional interaction between genotype and the physical, social, and cultural environment.

Human thoughts or memories are stored across the brain as a vast network of interconnecting cells. Memes manifest as physical brain structures, patterns of neuronal wiring. The actual physical composition of such structures probably varies from person to person and changes throughout ontogeny. In early human history, those brains that were better capable of storing and spreading memes were favoured by natural selection (Blackmore, 2000). Consequential of evolution, the modern human brain is literally hardwired for memes.

5.4.3 *Engines of culture*

Humans all share a common psychological architecture because of the common neurological architecture of our brains. However, we do not all share the same culture, as all over the world human societies have experienced and adapted to different environmental circumstances, cumulative experiences, and historical events. Throughout time, place and circumstance, humans have formed different collections of memes (i.e. ideas, beliefs, rituals, and practices) that make up their culture. Even culture is individualized because of the unique interaction of each person's genes, memes, and physical and social environment. In short, everyone experiences the world in substantially

the same way; but everyone's subjective knowledge about the world is socially derived (Pfeffer, 1998).

Memes are the replicators that create culture, and behaviour is its expression or phenotype (Aunger, 2002). Cultural selection is a Darwinian process by which particular traits increase or decrease in frequency due to their differential probability of being adopted by individuals (Aunger, 2002). Cultural selection therefore works on variations in cultural traits in the same way as natural selection works on biological ones.

It is important to note that culture *per se* is not an evolutionary adaptation. The ability to imitate was the human adaptation which had the consequence of creating culture. Culture brings about diverse behaviours, skills, and artefacts that get copied. Those that get reliably and frequently copied individually undergo cultural selection and further create new behaviours, skills, and artefacts, each of which has the potential to be a successful meme in its own right. This is the case with PM, as various memes came together and mutated in the minds of some in the West during the mid-20th century (Whitty & Schulz, 2007).

Having considered a definition for memes and an argument that humans are neurologically wired to store and spread them, I then illustrated how memes drive the phenomena we call culture. Next I focus on two particular types of memes encountered in the West, the project management meme (PMBOK® Code) and the Corporation meme, and consider how they drive a particular self-sustaining cultural environment I call Projectistan.

5.5 Western memes

Not all human thought, emotion and behaviour patterns are brought about directly by the biological natural selection process. Religions, philosophy, art, science, even the faculty of language in its broadest sense are consequential of other cognitive capacities and information processing abilities of the human brain. However, these as well as others such as corporation and government do indirectly support and enhance our existence. Religion for example exhibits mental health and social solidarity control functions such as promoting reproduction and survival through the family unit, while science helps us exploit our natural environment.

There are memes that are largely common to all Western (Judeo-Christian) societies. The by-product of their replication creates cultural behaviours which can be characterized as an obsession for control of one's environment and the pursuit of meaning. Those of us in the Western corporate environment appear to be predisposed or particularly susceptible to the memes of PM (Whitty & Schulz, 2007) which suggest a generic, secular, and rationalised approach to work, and where work performs a mechanical function. In so called post-modernist times, the West still views work in a modernist way with a focus on rationalism, pragmatism, efficiency and productivity (Kanigel, 1997).

There appears to be a certain greatness that lies in the concept of order and control. Humans as a species today depend on order to survive. Spending time in an ordered and controlled space as opposed to the usual clutter of home effects us in someway by endowing us with certain qualities, such as feelings of reassurance and reduced anxiety (De Botton, 2006). Stress, particularly in the workplace, is reduced when control over a

situation is increased, and if real control is not possible an illusion of control will suffice (Langer, 1975). As I will demonstrate, project managers and organisations can reduce anxiety in project stakeholders by presenting the impression of control.

The significant memes that drive PM (i.e. doctrinal supremacy, the protestant work ethic, scientific management, and managerialism) have survived well in the West where the dominant institution is that of the corporation, and they bring about behavioural traits in their hosts which can be characterized as the systematic, methodological, and frugal approach to the management of time, cost, and resources, including people, for its own end (Whitty & Schulz, 2007). It is these traits that are commonly associated with the popular PMBOK® Guide version of PM. For the purpose of this discussion I represent this pervasive and one-best-way approach to PM with the term ‘The PMBOK Code’, which from an evolutionary point of view, is a replicating group of ideas, concepts, rituals, and highly Tayloristic assumptions about what it means to manage a body of work.

5.5.1 *The PMBOK® Code*

In its simplest form the PMBOK® Code manifests as a relatively modern convention of conduct, behaviours, or practices which encompass many forms from methodologies to ethical and professional behaviour. A traditional view of the professions is that they are purely productive organizations, comprising experts possessing skills and knowledge vital to society. More critically, professions are viewed as the mobilization of monopoly power to secure power and influence for a privileged minority (Freidson, 1970; Johnson, 1972). An evolutionary or memetic approach suggests that organizations such as the PMI® are replicating / self-sustaining mechanism for PM memes (Whitty, 2005),

which supports the view that professions are societal structures of power and oppression (Saks, 1983), ultimately for the benefit of corporations.

It is the PMBOK® Code, the PMBOK® Guide version of PM, which defines the professional identity of a project manager today. In the West, people largely find their identity from their workplace (Deetz, 1992), as today the dominant institution is the Corporation. Previously our public or social lives had been shaped by the State and before that the Church. In these earlier times most of the organization of our thoughts, feelings, and concepts of who we were as people and the decisions we made were directed out of a moral authority derived from the Church. Our concept and production of expertise was largely connected to the Church and our education was focused on moral teachings. Gradually the Church retreated into our private lives and State institutions began to direct our public lives. Democracy became the model for decision making, and our education was focused on how to be a good citizen. In the West today most of the decisions that significantly impact our public and social lives are made in the context of the Corporation (Deetz, 1992). The demands of work significantly impact how we direct our lives, even to the extent that our day-care centres, schools, and universities are very corporate in character and match the start and finishing timings of our work. Moreover, governments spend most of their energies regulating the boundaries of corporate decision making and advancing the corporate entity rather than actively participating in the decision making process. As a consequence of globalization some Corporations are bigger than many State institutions whose influence is further limited. As I discuss later, we should be aware of the influence of our dominant institutions and be conscious that in the West it is the notion or meme of the Corporation which is influencing our cultural

environment, telling us what is important, and providing us with our sense of meaning and identity.

5.5.2 *The corporation meme*

Weber (2002) argued that the ethos, ‘spirit’, or fundamental values necessary for capitalistic activities is not inevitable, and that capitalism is a product of the Western mind that is significantly driven by the Protestant work ethic. This meme drives what Weber called the ‘spirit of capitalism’ which essentially underpins the dominant economic system of the world today. Capitalism is more than the accumulation of wealth. It is the application of a disciplined workforce and the regularized investment of capital (Weber, 2002), and requires a level of organization, pooling of capital, and economies of scale that can be achieved today principally by the application of social devices such as governments, but principally corporations.

The corporation meme is omnipresent and a most powerful concepts in Western society. Its creation is recent being a legal entity born out of the industrial revolution. Corporations were initially associations of people who requested a charter from the state legislature that provided them with a set of legal rights and responsibilities, particularly were those to serve the public good. The corporation was therefore a quasi public device used by governments to create and administer public services like toll roads and canals and then it evolved within a system of stock markets, brokerage houses, and investment banks into a mechanism for the organization of railroads (Roy, 1997).

The American civil war and the industrial revolution created enormous growth in corporations and representative lawyers sought after more power to operate and for constraints to be removed. A significant change happened to the corporation meme in 1886 when the United States Supreme Court first treated corporations as ‘persons’ entitled to constitutional liberties. This change concerned the Fourteenth Amendment, the intention of which was to prevent the States from taking away life, liberty or property from black people. However, lawyers representing corporations reinterpreted this amendment arguing that corporations are also legal persons, and as such are also entitled to constitutional liberties. The Supreme Court supported this view, and in the periods between 1890 and 1910 the courts employed the Fourteenth Amendment in 19 race cases, in stark contrast with 288 corporate cases (Collins & Abrams, 1997).

Corporate citizens are unlike human citizens. The corporation is a unique kind of ‘person’, designed by law only to be concerned with their owners and shareholders (not stakeholders) who are not liable for its actions. Unlike humans, a corporation has an indefinite lifespan, virtual freedom of movement anywhere in the world, and can control mass media. Though there are many corporations that do good deeds in the community by producing goods and services that add value and make life easier, every chief executive officer (CEO) is legally bound to put their bottom-line before anything else, even the public good.

Corporations eventually moved into the space of manufacturing, and many of these are the same giants that still dominate the economic landscape today. In this way the corporation altered manufacturing entities so that they were each owned by many people instead of by single individuals as had previously been the case.

The Corporation continues to be redesigned by the memes of capitalism. The positive is flexibility, the negative confusion. In a 'one size fits all' approach the West is applying the corporate model almost everywhere including voluntary organizations, universities, and schools where students are viewed as customers and stakeholders. Technology has enabled investors to move capital across the globe from corporation to corporation without any intention of them becoming long-term owners of these businesses. Investors such as these are neither concerned with the profitability of the business. All they require is a sudden increase in share price. These price increases often occur because a corporation re-shapes its business plan. This so-called "impatient capital" has radically changed the way corporations are managed (Sennett, 2006). Even the employment of a consultant to redesign a business sends a signal to the market that a corporation is in the game, flexible, and prepared to newly perform (Sennett, 2006). Interestingly, only the appearance or impression of redesign is required. Shortly I consider how creating the 'right' impression functions in the cultural selection process.

The temporary construct of a project, as defined by the PMBOK® Code, allows a corporation to adjust its business to the markets. One downside of such perpetual changing work roles is that craftsmen are no longer produced, and we diminish the organisations ability to store and transfer tacit knowledge. Few spend long enough time on a task to master the art. Computer programmers exemplify this by spending much of their time being pulled from one task in one project to another in a different project. It appears that today people need to be masters of quick study, and study just long enough to do a reasonable job before moving on to another (Sennett, 2006). One of the features of a contemporary economic system replete with projects is a flexible labour market. Efficiency increases if the workforce feels insecure, and one of the costs of job insecurity

to individuals is decrease job satisfaction and increase physical symptomatology (Ferrie, 1997; Ferrie, Shipley, Marmot, Stansfeld, & Smith, 1998). One's social rank alone can affect longevity (Marmot, 2004).

I suggest that the complex interactions between the PMBOK® Code and the Corporation meme have leads to the cultural conditions of Projectistan, a particular self-sustaining cultural environment where the idea and concept of projects and PM thrives.

5.5.3 *Projectistan*

Projectistan (*-istan* meaning land or place of) is a Projectocracy (*-ocracy* indicates a type of rule). That is to say that it is a cultural society governed by its awareness of projects and PM, and in which advantages are bestowed on an aspiring class of people or business entities – the project managers and organisations that profess PM.

One can recognize the territory of Projectistan by its artefacts, cultural events, rituals, and practices (e.g. Gantt charts, PRINCE2, stakeholder meetings, and the use of language which includes terms such as WBS, scope, and critical path). Its borders extend across all business sectors and geographical regions, and its values and social mores penetrate into offices, board and conference rooms, even coffee shops. It is in, and on the borders of, this land of projects, that the social selection of PM practitioners (individuals and organisations) takes place.

As mentioned previously, the PM literature rarely attempts to make a causal connection between the application of PM and organizational productivity. No doubt PM

has many positive influencing factors on productivity. However, it must be considered that the project environment allows project managers to be “lucky”. That is to say that the PMBOK® Code rules that govern Projectistan enable project managers to tinker as much as possible while trying to collect as many opportunities. If one considers how many people there in the world today that deem themselves to be managing projects, and the number of decisions they need to make on each project, stokes of luck and opportunities to be captured are bound to happen. Fortunate project scenarios are inevitable.

Successful project managers have survived the social selection process in Projectistan. Since there is no real causal evidence to the contrary, skill in the sense that a project manager was skilful at delivering a successful project could be considered to be an after-the-fact attribution. For example, in the business of Hollywood movies, it has been shown that if a movie has a star actor, star director, and big budget it only has a slightly higher chance of becoming a hit than that of the non-star low budget movie (De Vany, 2004). It turns out that a lot of nonlinear luck makes a movie successful, and it is the success of the movie that makes the actor or director a star (De Vany, 2004). I suggest that a similar condition could exist for the successful project manager. Given this situation, a project manager’s best attribute could be that of being able to enhance the amount of luck they encounter by creating and noticing chance opportunities. This is a thought that cannot easily be dismissed.

Projectistan does not acknowledge luck. Surviving project managers must ignore the notion of luck in their narratives of project successes which further construct and reinforce the casual links between PM and productivity that further spread the PMBOK®

Code. There is a self-serving bias to the success stories of any project manager. Success stories (read almost any case study) are liberally laced with elements of the PMBOK® Code. The project manager might claim project success because they maintained a visible 'risk register' or they kept a tight control over the 'scope change processes'. But as previously suggested, these are all after-the-fact attributions using the restrictive language of the PMBOK® Guide.

Having considered the peculiar cultural environment project managers find themselves in, I now establish how cultural selection takes place in Projectistan by using the metaphor of the theatrical stage, and illustrate the function of impression management in this process.

5.6 Projects as theatre

"All the world is not, of course, a stage, but the crucial ways in which it isn't are not easy to specify". Here Goffman (Goffman, 1959) argues that behaviour can be observed as a process of people relating to each other as actors who enact roles, and that meaning is not a characteristic of the world, rather it is the result of an evolving social process of interaction. Even the notion of self or that of project manager is derived and sustained through interaction. Further, he argues that everyday interaction can be seen as processes that involve actors and spectators giving, receiving, and managing the impressions about who they are and what they claim to be.

The organizational environment already contains much of what could be recognizable as theatre (Rosen, 1988); role plays in professional development workshops, cabarets at Christmas parties, award banquets, sales and marketing presentations, and

AGM's. In Projectistan, each project could be considered to take place on a stage with actors, costumes (uniforms), scripts, and props. Traditionally we make the assumption that it is the actor that is the fulcrum of the role, stage, costume, script, and props. An evolutionary or memetic approach considers the memes to be the creative force, constructing the actor, stage, and the professional personas that project managers are compelled to maintain.

5.6.1 *Impression management*

In the context of PM, Hodgson (2005) argues that the intent and effect of the professionalization of PM is the subjection of employees, providing security and dependence, whilst maintaining subordination and creating existence (meaning or identity). He has observed how project managers are compelled to create the right impression and “put on” a professional performance and behave in a manner that is consistent with an assumed professional identity. Butler (1990) suggests, similarly to Goffman (1959), that we “construct” our identity and our social environment through our regularly repeated “acts,” and that we present ourselves to the world as in a performance. The identity or role of project manager is therefore not original, because versions of the identity or impression that is constructed, that is to say the act that is performed or the script that is run has been created by those who came before. To survive, new project managers copy the behavioural traits of older successful ones.

Impression management (IM) is concerned with the conscious and unconscious attempt to influence the perceptions of other people about a person (e.g. self, friends, enemies, stakeholders), an object (e.g. organization, deliverable, product) or event (e.g. transgression, task, status report) by strategically regulating and controlling information

in the social interaction (Rosenfeld, Giacalone, & Riordan, 1995b; Schlenker, 1980). In general, IM is composed of at least two sub processes namely impression motivation and impression construction (Leary & Kowalski, 1990). The former, is the desire to create particular impressions in the minds of others, but this may not manifest as an overt action. The latter, of most concern to this paper, is where individuals consciously alter or ‘put on’ (e.g. via self-description, nonverbal behaviour and props) behaviours to affect the impressions others have of them in order to secure a competitive advantage.

IM is a pervasive feature of social behaviour. Although IM is used to gain approval and achieve valuable interpersonal goals, it also is a fundamental component of all social transactions. In order to interact, people must define the situation by selecting the relevant social scripts and the roles each will play. IM communicates people’s definitions of their identities, motives, and orientation toward the relationship. Once an identity such as that of ‘project manager’ is established, each participant has an obligation to behave consistently with the identity he or she projected and to respect the other’s identity by treating them appropriately.

The social psychology literature deals with strategic IM which is designed to advance the self-interests of the individual (Arkin & Baumgardner, 1986; Baumeister & Tice, 1986; Goffman, 1973; Jones, 1964; Leary & Kowalski, 1990). Some of this literature characterizes this behaviour as “gamesmanship” and focuses on how people strategically package (use and conceal) information to accomplish their objectives (Kiechel, 1982). Much of the stock in the psychology and business sections of bookstores, which can be exemplified by Carnegie (Carnegie, 1999), similarly deal with how to exert social influence by making the right impression on others. Research shows

that people are good at using IM (DePaulo, 1992), and that it is effective in altering the way people are perceived (Riordan, Marlin, & Kellogg, 1983). A prime example of IM popularity is the aforementioned Carnegie book which has sold over 16 million copies to date, been translated into every imaginable language, and generated a whole network of training courses and centres which are patronized by some 80 percent of Fortune 500 companies. Corporations such as KPMG, Coopers & Lybrand, Ernst & Young, and Price Waterhouse employ image consultants to instruct their employees in the art of looking, acting and sounding professional (Wellington & Bryson, 2001).

Having argued that the selection pressures of Projectistan drive individuals and organisations to “put on” PM performances, I now consider how practitioners of PM make best use of the cultural artefacts of Projectistan to optimize their survival by emotionally manipulating their environment to instilling feelings of control and thus reduce anxiety in others.

5.6.2 *The project stage*

Typically project briefings or meetings are performed before an audience of workers and/or stakeholders. Traditionally the stage is set in either the office of the project manager (liberally decorated with Gantt charts), or the conference room employing a prop such as a data projector to display a Gantt chart amidst the obligatory pre-shaped PowerPoint (PPT) slides.

An interview for a project management position can also be considered to take place on a stage. Here a candidate will claim the identity of a project manager as a way

of influencing how others will treat him or her in the future. The impression of such an identity may be created in a variety of ways, by claiming responsibility for the success of projects that appear on their résumé (Broussard & Brannen, 1986), wearing a business suit, citing credentials, and liberally using PM terms in conversation.

5.6.3 *Project manager clothes & insignia*

Men have evolved a standard uniform for the business environment that consists of the business suit. Part of the strategy used by men to climb executive ranks is to reflect the values by mimicking the dress, as well as the hobby and luncheon habits, of those executives already in the upper ranks (Saunders & Stead, 1986).

Uniforms of all types, including the business suit, ask to be taken seriously, with suggestions of probity and virtue (clergy, robed judge), expertise (paramedics, airline pilots, consultants), trustworthiness (scouts, postal carriers), courage (police officers, fire-fighters), obedience (military, high schools, corporations), extraordinary cleanliness and sanitation (ice cream vendors, hospital workers) (Fussell, 2002). In the workplace image, appearance and dress are extremely important (Anderson, Johnson, & Reckers, 1994).

Project managers need to identify themselves from other workers in Projectistan, and they seek to do this by the clothes and insignia they wear. A brief internet search of the websites of major PM professional institutes shows a plethora of business suits, some women but mostly men, and some wearing business suits *and* hardhats. Insignia, in the form of post-nominals, are more subtly displayed. Almost all PM professional body membership categories entitle members to use post-nominals. Additional post-nominals

are also available to practitioners who successfully complete a professional certification program. Survey data of PM practitioners shows that those with PM post-nominals have a higher income than those without (AIPM, 2005). Such a string of credentials on a business card, offered by an individual wearing a business suit who appears well versed in PM terminology, presents a compelling façade of independent expertise that appears to survive well in Western corporate culture.

5.6.4 *Project Manager Scripts*

As I have stated, to survive in a projectocracy requires acting behaviour on the part of project manager. Throughout their working day they are required to present short plays or scenes with a script that depicts them as organized, in control, professional, and responsible for project successes. Hodgson (Hodgson, 2005) observed that this is particularly true when project managers present to senior management, or when their professionalism is being questioned, or they want to differentiate themselves from competing groups within the organization. However, among themselves project managers behave with clear antagonism towards their own displays or acts (Hodgson, 2005). Hodgson (Hodgson, 2005) observed that the humour amongst practitioners reflects the difficulty they have in matching their expected professional identity with their actual everyday performance when immersed in the complexity and unpredictability of project work.

The nature of the role of project manager requires the individual to construct or protect their professional identity. Such self-presentation behaviour is a common (though reluctantly acknowledged) phenomena in the organizational environment (Rosenfeld,

Giacalone, & Riordan, 1995a). It is reluctantly acknowledged because it has connotations of being pretentious, deceitful, immoral, manipulative, and such behaviour is often described by the common English expletive – bullshit (Frankfurt, 2005). Project information therefore becomes ‘packaged’ by the project manager to acquire or support a desired identity. When a project manager considers the packaging, it is interesting to note that in social situations individuals regard a greater level of accountability associated with being untruthful rather than being evasive (Adler, 1997). Rather than being caught in a lie when protecting identity, individuals create a different frame of reference that diverts attention to other topics and contexts (Goffman, 1959). Their narratives tie project success to skill rather than consider that they were helped by measures of luck.

5.6.5 *Project Manager Props*

The Gantt chart has memetically much in common with PowerPoint (PPT). PPT has been described as a social instrument, like a suit of clothes that the user imposes on other people and insists on being judged by it (Parker, May 28 2001). PPT is undoubtedly a successful meme being found on some 250 million computers around the world with over 30 million PPT presentation made every day. It pre-shapes (via templates) how users plan, present, and think about information, shepherding the user towards a staccato summarizing frame of mind (Parker, May 28 2001), closing down debate instead of opening it up (Keller, 2003), and dumbing down content with potentially dangerous consequences (Norvig, 2003). The PPT slide sets the remarks of the presenter in stone ahead of time, leaving no possibility for creative ideas to arise collaboratively.

The Gantt chart appears to be a successful meme. Project managers are compelled to create them to maintain their professionalism. Akin to PPT the Gantt chart leads its audience to believe that all the information required has been accounted for, giving the impression that the matter is solved. In this way strong Gantt charts close down creativity and spontaneity. It is simply not realistic to think that one can cram the complexity and unpredictability of project work into the linear template format of a Gantt chart. These charts could be considered to be a physical manifestation of the information packaging process previously mention.

5.7 Concluding remarks

In this paper I have argued that the PMBOK® Guide version of PM, the PMBOK® Code, is spreading profusely unchecked throughout Western culture. This particular type of PM appears to be an extremely well adapted to its cultural environment. However, it must be remembered that memes are completely indifferent to their human host and care not for their welfare. Memes simply replicate and exploit their environment. As for the PMBOK® Code it prospers in a Western capitalist culture (Whitty & Schulz, 2007) and in this environment the competitive advantage is not given to human citizens, but to corporate ones. An example of this would be that the evolving manner of this popular brand of PM has the potential to fractionalize the workforce to the benefit of the corporations and to the detriment of society. Furthermore, the behaviour the PMBOK® Code drives appears to be more about appearance than productivity, and corporations will ultimately reap more benefit from it than individuals.

Work is a very real and demanding activity to humans. The way we manage and organize our work should benefit us and our dependants. The PMBOK® Code appears to be evolving unchecked in a rather toxic manner. This popular brand of PM needs to be modified in ways that will release practitioners from the burden of performativity, and open the culture of project work up so that systems and processes are held accountable rather than individuals.

Chapter 6: A Mechanism for Replication

6.1 Preamble

This chapter is principally an incorporation of my paper (forthcoming 2010) called “Project management artefacts and the emotions they evoke”. This chapter looks at the physiological aspects of project management and presents a phenomenological study into the various emotional affects that are associated with project management artefacts.

Appendix A contains a copy of the questionnaire referred to in Section 6.5.2
Appendix B contains a copy of the interview information sheet that was issued to participant.

Project management artefacts and the emotions they evoke

6.2 Abstract

Purpose – This study investigates the variety of affective emotions that are evoked in extant project management practitioners by various project management artefacts.

Design/methodology/approach – A phenomenological methodology is used for eliciting, through self-reporting and observation of gesture, the affective responses and consequential emotions experienced by project management practitioners as they interact or recount previous interactions with various artefacts of project management.

Findings – This study suggest that project management is prevalent in the Western corporate environment because project managers obtain an emotional affect from aspects of the project management experience, and project managers utilise various project management artefacts to emotionally manipulate their environment to their own advantage.

Practical/implications – The paper argues for a project management environment which is founded on evidence based practices. It suggests that future research should explore the links between project management, social architecture, and flow theory.

Originality/value – This study advances the evolutionary framework for project management research.

Keywords – Project Management, Evolution, Memetics, Emotion, Gesture, Flow Theory,

Paper type – Research paper

6.3 Introduction

This paper attempts to advance an evolutionary framework that addresses the reasoning for the prevalence or fitness of project management (PM) in the Western corporate environment. When evolutionary thinking is applied to PM one is drawn to conclude that there are survival advantages in practicing PM or even presenting and maintaining the image of practicing PM. There must be some. PM would have been phased out by cultural selection if there were none.

In the context of cultural selection, selection pressure is the intensity with which the cultural environment tends to eliminate cultural or behavioural practices, or challenge them to create adaptations that will give them a survival advantage. In the West, the corporate environment is rapidly changing (Dodgson, 2004; Jones, 2004; Sugden, 2001), fuelled in part by the rapid change in technology (Rothwell & Zegveld, 1985), a condition which adds to the selection pressure placed on organisations. One response to this pressure has been to reduce business response times (Perrino & Tipping, 1991), and utilising the construct of a projects along with the application of PM techniques has been a key enabler of this (PIPC, 2005). Within the evolutionary framework it has been argued that some survival advantages are given to those organisations, and therefore those individuals, that adapt to embrace PM ideals (Whitty & Schulz, 2006). What has not been addressed is how PM creates self-sustaining behaviours that enable project managers to establish and maintain their position in their professional community.

To attend to this situation this study attempts to examine the plausibility of two hypotheses which focus on emotional affect and the PM experience. The first hypothesis (H1) is an attempt to examine the claim that a project manager's behaviour is driven by the

various aspects or memes of the PM experience (Whitty, 2005). The second hypothesis (H2) is an attempt to examine the claim that project managers emotionally manipulate their environment to increase their competitive advantage (Whitty & Schulz, 2006).

H1: Project managers obtain an emotional affect from aspects of the PM experience.

H2: Project managers use the emotional affects of PM artefacts to increase their competitive advantage.

Through self-reporting and the observation of physical gesture (via phenomenological methodology), this study elicits the various affective emotions that are evoked in extant project managers by a variety of PM artefacts.

The paper takes the form of a literature review, an outline of the study and research design, a rich narrative of the results, and a discussion that places the results in the context of the evolutionary framework. Conclusions and implications are drawn, and suggestions for further research are made.

6.4 Literature review

The literature review begins with a summary of the evolutionary literature relating to PM and highlights a gap concerning the physiological (emotional) mechanisms PM memes (ideas and artefacts) use to replicate.

A large body of literature that pertains to emotion and affect in the context of organisations is summarised and attention drawn to that which relates to PM. Finally, the literature relating to artefacts is summarised with special consideration to that which pertains to artefacts in the organisational setting, and that which considers how both artefact and gesture are expressions of emotion.

6.4.1 *Evolutionary approach to PM*

An evolutionary framework for PM research considers that the behaviour we would commonly call PM is brought about by the replicating behaviour of particular memes in the form of ideologies, concepts, and artefacts, and these memes will necessarily surface and thrive in Western (Judeo-Christian) societies courtesy of selection pressures (Whitty, 2005; Whitty & Schulz, 2006, 2007).

From an evolutionary point of view, PM behaviour is a consequence of the natural selection process, and whilst not an adaptive trait itself that is essential for the survival of the human species, PM does indirectly support and enhance the existence of its practitioners (Whitty & Schulz, 2006). It has been argued that in order to socially survive in the organizational environment, individuals are driven to ‘put on’ the performance of project manager as an actor would perform a scene (Hodgson, 2005; Whitty & Schulz, 2006). These ‘actors’ are emotionally driven, and they are predisposed by their surroundings (Davis, 1984) to play PM scenes on particular sets; are obligated to wear a costume and recite a script, and use specific props (artefacts); and all this before an audience of senior management, stakeholders, and project workers (Whitty & Schulz, 2006). In this way those who profess PM increase their fitness to survive by gaining a competitive advantage, and reap benefits

that take the form of cultural inclusion and acceptance through employment, promotion, and membership to a community. This enables project managers to survive and reproduce, increasing the likelihood that their behavioural characteristics, tendencies, values, and ideals will be passed on to further generations who will again undergo further selection.

Within the evolutionary approach to PM it is not clear what function PM artefacts have in creating survival advantages for project managers or what affect or emotions they evoke that cause them to be passed on.

6.4.2 *Emotions and Affect*

Our emotions and behaviours have a biological foundation. We are hardwired to instinctively satisfying our emotions (Denton, 2006). Instinctive behaviours are driven by the physiological changes that are triggered by a change of body chemistry sensed by the brain (e.g. air, minerals, warmth etc) or those triggered by second level sensory inputs from the environment such as vision or simulation (imagination). Behaviour is a response to these needs, and particular behaviours boost chances of survival. It is these behaviours or traits that undergo selection pressures in the social environment. Those better predisposed to responding to these needs in a particular environment win the cultural selection race.

There is a distinction between full-blown conscious emotion and automatic affect (Baumeister et al., 2007). A full-blown conscious emotional experience operates to stimulate cognitive processing *after* some outcome or behaviour. Full-blown emotions act as a *primer* to the cognitive control of behaviour. Neurologically speaking, events that create a full-blown emotional experience leave a trace or neurological residue, and later this residue can

become activated if similar situations to those previous are detected, leading to a change in subsequent behaviour such as that of avoidance.

Affect may be no more than a quick twinge of feeling that something is good or bad, of liking or disliking for something (Baumeister et al., 2007). It does not entail the intense conscious experience that emotion does, though some conscious awareness of liking, disliking, suspense or tension may be felt. It is this conscious awareness or recounting of this previous awareness of affect that this study is particularly interested in capturing.

Popular business writer Tom Peters (1999) declares that PM is emotion management. It has also been argued that it is emotion that shapes, and is shaped by, organisational culture (De Dreu, West, Fischer, & MacCurtain, 2001). Furthermore, our ability to be able to manage and interpret emotions is placed at the root of productive relationships in the business environment in general (Ashkanasy, Zerbe, & Härtel, 2002), and PM in particular (Kadefors, 2004; Turner & Müller, 2004). A large volume of literature, summarised by (Liu & Walker, 1998), also considers emotion to be a significant part of the evaluating process of project outcomes.

Thought leaders across all aspects of PM are mindful of the need to investigate the nature of human interaction, particularly the role emotions play in the wider phenomenon of projects and PM (Winter, Smith, Morris, & Cicmil, 2006). However thus far, emotions have only been considered from the perspective of how a project manager manages their own positive or negative emotions as well as those of others to achieve project success. See (Cerny, 2007) for a summary of emotions in projects. None of this literature considers the emotions that are evoked by artefacts that pertain to PM in the context of PM.

6.4.3 *Emotional expression: artefact and gesture*

There is also a strong correlation between emotions, artefacts, and physical gestures (Denton, 2006). Simply put, both artefacts and gestures are expressions or by-products of emotions. It has been shown that spontaneous gestural expressions such as shame (e.g. chest narrowed and shoulders slumped) and pride (e.g. a winning athlete's arms raised and hands in a fist) are biologically innate expressions of emotion (Tracy & Matsumoto, 2008). Also art, in the moment of its creation, is connected to the emotions (physiology) of the artist. Moreover the observer is, in a neurological way, empathically connected to the creative emotions of the artist. Freedberg and Gallese (2007) have produced an extensive review of the literature that demonstrates that human empathic responses to works of art have a precise and definable material basis in the brain. Viewers of works of art report bodily empathy. Therefore art contains the mark, impressions, or some remnants of physical gestures that are expression of emotions.

Providing a clear ontology of artefacts is a non-trivial assignment. Suffice it to say that a project manager's technical artefacts such as their computer are different from their social artefact such as a PM methodology they may follow in that the realization of their function crucially depends on their physical structure. Both however are used for *doing* things. It is under this criterion that this study considers the constructs commonly associated with PM such as deadlines, teams, PM methodologies, and Gantt charts, and so on, to be artefacts of the PM discipline. See (Kroes & Meijers, 2005) for an extensive perspective on this dual nature of artefacts.

The organisational environment is replete with artefacts. Whether they are passive or active, they can create and/or predispose us to particular feelings, emotions, and ideas. Both

the interior design of offices (Davis, 1984), and exterior architecture of buildings, cities, and parks (De Botton, 2006) evokes emotional associations that influence our mood and further predispose us to particular values and ideals. Moreover, music (Blood & Zatorre, 2001; Scherer, 2004), works of art (Freedberg & Gallese, 2007), and more active structures on the body such as a forced smile (Strack, Martin, & Stepper, 1988), can further predispose us to emotions.

The study of the connections between emotions and physical artefacts in the context of the organisation is not new (see (Rafaeli & Vilnai-Yavetz, 2004)). However, a gap in the literature does exist which relates to what affective emotions are evoked by various PM artefacts.

6.5 Study

A phenomenological approach to this research is a potentially powerful methodology for eliciting, through self-reporting and observation of gesture, the affective responses and the consequential emotions experienced by PM practitioners as they interact or recount previous interactions with various artefacts of PM. A distinguishing feature of empirical phenomenology is the fact that it focuses on the meaning human beings make of their experience (Hillman, 1960; Schweitzer, 2002).

6.5.1 Research design

In an attempt to gain access to, and make sense of, the emotional experiences of project managers during their interaction with PM artefacts, a phenomenological method

developed by the Duquesne School was used, which has been further articulated and demonstrated by Giorgi (1970, 1985, 1992b).

The chief characteristics of this approach are:

- To use loosely structured interviews;
- Participants are selected on the basis of experience of the phenomenon under investigation, and linguistic proficiency.
- The researcher adopts a position of “conceptual silence”, or naivety;
- The interview transcripts and observations are reduced to natural meaning units expressed in the words of the participant in an attempt to capture the lived-world experience of the participant; and
- Themes are extracted and compared with findings with other sources.

Validity of the data was addressed through careful selection of interviewees by use of a selection process, and reliability was addressed by using replication logic, i.e. eighteen interviewees were asked the same questions.

6.5.2 *Sampling and data collection*

The selection of participants occurred in two stages. A small cohort of 55 project managers from Queensland (Australia) Chapters of Project Management Institute (PMI) and Australian Institute of Project Managers (AIPM) were asked to participate, and a questionnaire was administered via email, containing the following questions:

1. What are some of the project management tools and processes you enjoy using?
2. How do they make you feel when you're using them?

3. How do you think you'd feel if you weren't allowed to use them to manage a project?
4. Try to imagine the ultimate project management tool or process – what do you think it would be like?

These questions are designed to encourage respondents to think deeply about the aspects of PM they enjoy the most and what initial responses and emotions they attach to them. The questionnaire serves two purposes: one, to act as a rough sieve for selecting a smaller group of respondents to act as participants for in-depth interviewing; two, to provide a framework for the interviews. 18 respondents were selected for face to face interviews on the strength of the richness of questionnaire responses, whilst not deliberately looking for racial, cultural and gender representation.

Face to face interviews were conducted in the participant's usual working environment which was, out of interest, on all occasions uncluttered and orderly. The questions were loosely formulated from their responses to the questionnaire, and typically asked for clarification and more detail on how they respond and emotionally relate to various artefacts and aspects of PM; what values and principles they attach to them; what narratives or metaphors they associate to them; and how would they feel if they were no longer allowed to use their preferred artefact or engage in their favourite PM activity.

Interviews were recorded (audio and video) and transcribed in full with comments on non-verbal communication. Ethical approval for this study was granted, anonymity assured, and video and audio recordings were destroyed following transcription.

Data from transcription was arranged into natural meaning units and explicated in an attempt to capturing the essence of what the phenomenon means to the participant, what responses and emotions they attach or associate with an artefact or aspect of PM. The emphasis at this stage is still on description, rather than interpretation (Giorgi, 1992a).

6.5.3 Data analysis

The first level of the data analysis codes each transcript, using a descriptive, open coding process to capture meaningful data units. This provides the foundation for a second level of analysis, meaning condensation (Kvale, 2005), in which the data (including the codes) are condensed into themes, explanations, stories, metaphors, relationship patterns, and their consequences. Meaning condensation is used to retain as much of the ‘whole’ of the data as possible and to capture the participants’ interpretations of their responses, emotions, and experiences stimulated by PM artefacts.

6.5.4 Limitations

There are no claims in this paper of an absolute truth about the emotional influences of various aspects or artefacts of PM. Rather, it provides an insight into how certain individuals (those reasonably well adapted to the PM environment) rationalise and make sense of their emotional engagement with various PM tools, methodologies, graphs, and processes. Self-reporting as a form of data collection is prevalent in the organisational behaviour and management literature (Dipboye & Flanagan, 1979; Gupta & Beehr, 1982; Mitchell, 1985; Sims, 1979), and there are issues when using this data to draw statistical conclusions (Podsakoff & Organ, 1986). However, this phenomenological study only

extracts and interprets the psychological information that they contain. The findings are particular to the cohort, and any generalisations should be considered with caution.

6.6 Results

Eleven common artefacts associated with PM arose from the interviews. Those more intellectually discernable were the concepts of project, of team, of deadlines and that of the professional persona of a project manager. Those more tangible were the Gantt chart, work breakdown structure (WBS), iron triangle, S-Curve, PM post-nominals, PMBOK® Guide and PM methodologies, and professional PM institutions.

Table 3 summarises the findings and maps the artefacts to an emergent or overarching theme, affective emotion, and physical gesture. To follow is a richer description of the findings. Participant comments are in quotes. Any words that they emphasized are in italics. Any comments on physical gestures etc. are placed in parenthesis.

Table 3: Project management artefacts and associated affect, emotion, and gesture

Artefact	Theme	Affect and/or Emotion	Gesture
Project	Yin - Yang	Fear/Nervousness mixed with Thrill/Excitement – <i>towards the Challenge</i> Personal satisfaction - <i>intrinsically rewarding</i>	Various – with an opposing or completing quality. (Figures 10-13)
Team	Mutual commitment	Appreciation / Gratitude Naches - <i>pride in the accomplishment of one's team</i>	Circle (Figures 14, 15)
Deadline	Self-administered positive reframing	Anxiety / Exhilaration Fiero - <i>Triumph over adversity</i>	Single hand chopping action
Project manager persona	Graceful Swan	Fear / Exhilaration Tension / Anxiety – <i>to appear businesslike</i>	Composed seating position
Gantt chart	Swiss Army Knife	Frustration – <i>expectant use</i> Tension / Concentration - <i>heighten awareness and focuses attention to issues</i> Sense of Control – <i>to vary style / strategy</i> Hope – <i>that the plan will be realised</i>	The x axis sweep (Figures 16, 17)
WBS	Crisp Chunks	Satisfaction / Contentment – <i>intrinsically rewarding</i> Sense of control	Building one on a white board with Post-it notes
Iron triangle	Warning Sign	Anxiety / Tension	Triangle (Figure 18)
S-Curve	Natural biological cycle	Hope / Confidence – <i>in a good well paced outcome</i>	None
Post-nominals	Fake Badge	Disappointment	None
PMBOK® Guide and PM methodologies	Twofer	Comfort, Protection	None
Professional institutions	Critical Mass	Pride, Intellectually stimulating. Confidence.	None

6.6.1 Project

Crude drawings can serve as a means of representing or abstracting the state of one's emotional psyche (Arnheim, 1969; Ramachandran & Hubbard, 2001). When asked to characterize the concept of a project in the form of a line drawing, participants drew a variety of shapes. Two participants drew an Octopus (Figure 10 is one example).

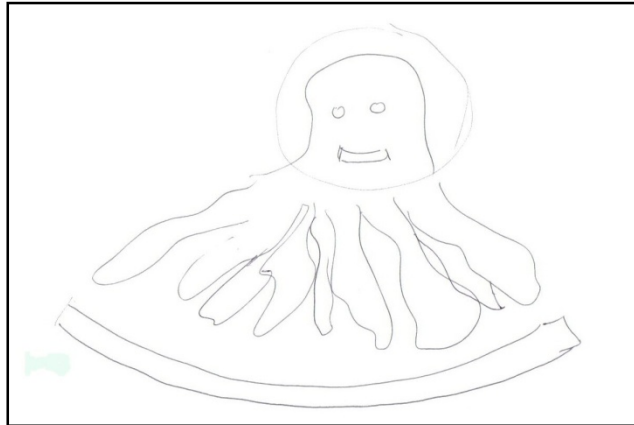


Figure 10: Octopus

One said “I see myself as the Octopus. The arms represent the different aspects of the project I need to be involved with”. “It’s organic; it gets born and dies; and it’s slippery to get hold of”. When commenting on the smile that one drew on their octopus the participant said “all projects test you, but it’s what you take from it. I think it’s *always* beneficial and satisfying in the end”. Both Octopi were anatomically incorrect having nine arms not eight. Both participants stated that each of the arms represented one of the nine core areas of PM. The second described their Octopus differently say “the *project* is like an Octopus; difficult to properly grasp hold of and you might get stung by one of the tentacles”. Another participant drew a snake and a ladder (Figure 11).

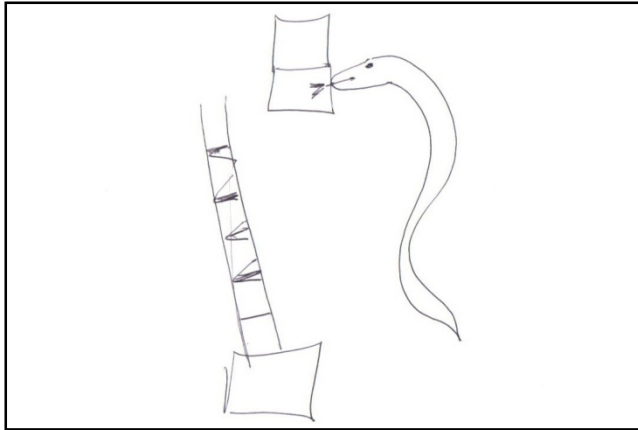


Figure 11: Snakes 'n' Ladders

“It’s like playing the board game snakes ‘n’ ladders. On good days you land on a square and shoot up a ladder. On bad days you might get bitten and slide down a snake”. Others drew various forms of wavy lines (Figure 12 shows one example).

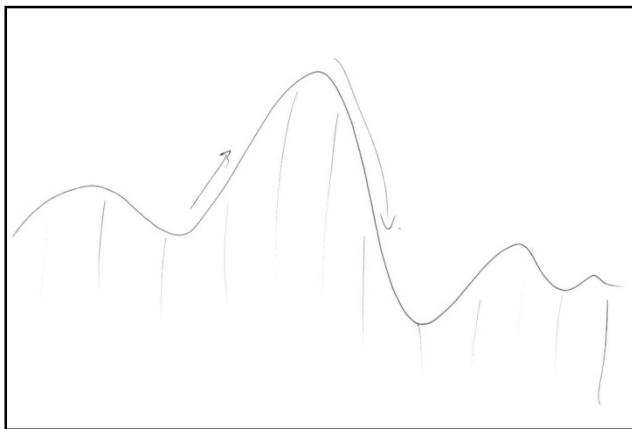


Figure 12: Rollercoaster

When pointing to a downward slope a participant said “there’s an adrenaline rush when things are going right”. When pointing to an upward slope “and then there’s that sick feeling knowing there’s a big fall coming”.

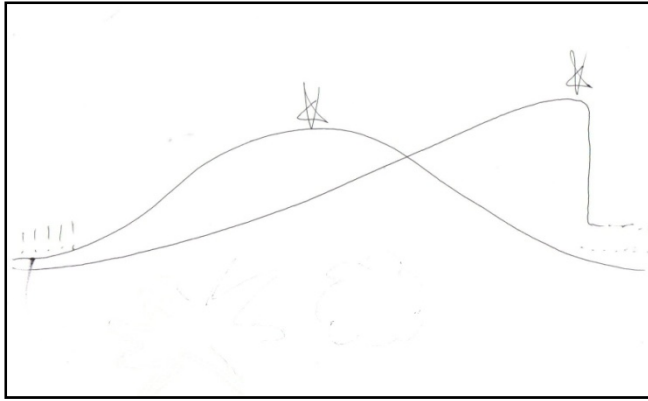


Figure 13: Climax

Figure 13 was described as “the project heads towards a climax, and then there’s a huge weight (participant sat back and upright in chair) lifted off my shoulders”. Another drew a rudimentary handgun saying “managing a project is like playing Russian roulette with work. Odds are it’ll be fine but sometimes it just goes off in your face”.

Projects appear to be emotionally perceived as though they are composed of two opposing forces or elements which were not as dichotomistic as good and bad. Rather, these forces are more complementary or completing aspects of the one phenomenon such as in the concept of Yin - Yang, though this term was only mentioned by one participants. All of the participants described the most difficult parts of their roles as “challenges”, and felt they gained a sense of achievement and learning from their projects - “even the really bad ones. I get a buzz out of it, and I keep going back for more.”

Participants described the experience of managing a project in terms of a duality between thrill and excitement, even fear and personal satisfaction. “When I think about a new project we’re working on – I get butterflies in my stomach.” Furthermore, many believed in some sort of karmic effect where the benefits of a good work ethic today would be paid back

in future project success. “I really feel that what I put in today – I’ll get back in spades tomorrow.”

All participants see project work as intrinsically rewarding. “People think I spend most of my time fiddling around with the Gantt chart. But most of what I do isn't even on the Gantt chart.” Another said, “I heard one young fella say that what he did was put out fires. And I suppose people see him as a hero. He *did* get promoted over me. But I've been in this job 15 years and I can safely say that I spend most of my time in fire prevention - so to speak. I put systems in place to *stop* fires breaking out, and I pride myself on that.” Another said, “Preventing problems isn’t sexy. A few, if any, realise the work I do. But I know what needs to be done, and I know what I've done and what I’ve prevented from happening. And I suppose I get a lot of satisfaction, personal satisfaction out of that.”

6.6.2 Team

The concept of team appears to be a powerful PM artefact. “Even though the buck stops with me, we share everything. They rely on me, and I rely on them.” Another remarked “Projects and teams are two halves of the same things aren’t they? We’re all in it together”. Another “I’m the manager of the project so it’s my head on the chopping block, but it’s the team that gets the job done.”

Though a hint of Yin – Yang appears to emerge once again, there exists a more dominant theme of mutual commitment or common ownership, but not one of common responsibility. One said, “If they shine I shine, but if it all goes wrong I take the heat.”

Participants appeared to be appreciative toward their teams and felt pride in their accomplishment. Ekman (2003) called this pride “Naches”. One said, “let’s be honest – a lot of the good work *they* do sticks to me. I think it’s only fair to acknowledge and appreciate that.” Another, “I really benefit from having good people on my team. They take time to find and can be hard to keep. But the effort is worth it. I’m proud of them. But don’t tell them that”. Another said, “We all give it 110 percent. And I like to think that I play some part in them achieving their personal goals too.”

There appears to be a gesture associated with the concept of team. Many participants, whilst saying the word ‘team’ made the gesture of a circle. They did this by either drawing a circle if they had a pen in hand (Figure 14), by tracing a circle using their index finger on the desk or in free space in front of them, or by making a circle by touching their hands together using their thumb and middle fingers (Figure 15). As an expression of emotion the circle gesture has a limitless or boundless aspect with no beginning, no end, and no division. It symbolises wholeness and completeness, and it is possibly used by project managers to express their feelings of mutual commitment and fidelity to the team and the project.



Figure 14: Team Circle



Figure 15: Team Hand Gesture

6.6.3 *Deadline*

The concept of a deadline appears to be a PM artefact, and a mixture of anxiety and exhilaration can be associated with it. “My credibility in this business could be won or lost on whether I make deadlines or not.” Another said, “It’s a love / hate relationship with me and deadlines. I moan and grumble, but I think we’re better for having them.”

Participants appear to be optimists and positively reframe any anxiety or apprehension they have about the future in such a way that deadlines represent personal performance goals. This reframing ability presents itself as a self-administered pursuit that takes effort to maintain. Six participants on various occasions used variants of the phrase “to lose sleep” or “losing sleep at night”. Others implied this phrase as one said, “I get paid so the client can sleep at night.” “I hate deadlines. They keep me up at night. But (long pause) at the same time, as they get closer, they give me a buzz.”

Deadline also appears to have its own physical gesture, which is that of a single hand chopping action. When questioned about the gesture, a participant said “its final”, “I suppose it means that’s *it* (chopping gesture), the end!” The term “chopping block” was mentioned by five participants. “(laughing) It probably is a bit like being under the guillotine (chopping gesture). My head would certainly be on the chopping block if I didn’t get projects delivered on time on budget.”

The term “deadline” takes its rise from the name of a light fence at an American Civil War Prison. Anyone crossing this line was shot (Style, 1996). However, the deadline gesture observed in this study appears to have more medieval roots relating to the guillotine or the headsman’s chopping block. Why the term is used and how it has been associated with

the gesture in the context of PM is unclear. Perhaps today, as participants imply, it represents an easy to copy macabre mixed metaphor for an impending and possibly public disgrace.

It appears that the term deadline is reframed by many of the participants to implicitly refer to the death of their own track record rather than the completion of any aspect of the project. “My life is full of deadlines. I see it as a challenge to rise up and meet every one of them.” Poggi, as cited in (Ekman, 2003), called this emotion of triumph over adversity “Fiero”. Another said, “I need deadlines. I thrive on them. I set deadlines when there aren’t deadlines (laughing). I use them to push me on and on and on.” Figuratively speaking, it appears that it is the project managers themselves (self-administered) who put their own heads on chopping blocks.

6.6.4 *Project manager persona*

“Well you’ve got to at least *look* the part haven’t you? You’ve got to at least *look* as if you can deliver.” When asked (not all were asked) to describe what they imagined a successful project manager would look like, participants (including all females) used descriptors such as “male (females raised their eyebrows whilst say this)”, “mid 20s to mid 40s”, “businesslike”, “must wear a business suit”, “confident and assertive”. Some commented on how they personally and actively used the persona. One said, “I think project managers should be like a Doctors in some ways. You have to ooze confidence in what you’re saying, even if deep down you don’t really believe it yourself.”

The project manager persona could be conceptualised by the metaphor that beneath the external impression of the graceful swan are furiously paddling legs. “I have a knot in my stomach before I go into that meeting room. But soon I get right into it I’m in the zone

(clicking their fingers).” Another “At stakeholder briefings I’m conscious that I need to look composed and in control. And then that’s how they think the project is going. Of course that’s not how it’s *really* going.”

There appears to be a tension or anxiety when creating and maintaining the façade of control. “I suppose I’m always wondering whether or not I’m pulling it off.” Another, “I reckon if I can just distract them from the bad stuff with the good stuff, then I can sort out the problems later.”

When participants spoke about their professional persona their seating position became more composed. This could be an example of a primitive gesture that implies bigness as a sign of threat or intimidation (Armstrong, Stokoe, & Wilcox, 1995).

6.6.5 Gantt chart

It seems that project managers cannot talk about PM without mentioning the Gantt chart. Project managers appear to be compelled to make them to create and maintain their professional persona. “I couldn’t imagine talking to a client without having a Gantt chart to show them. I think I’d look *really* unprofessional.”

One participant expressed a liking for the process of building a Gantt chart along with the mixed emotions about the end result. “I really feel a sense of achievement when it’s done. I’m not stupid enough to think that the actual project will turn out like it, but it’s something to talk about, point at, and hope for.”

Though the Gantt chart is closely associated with PM, many participants regarded this association as a burden. Nevertheless, they appear manipulate this situation to their advantage. “Project managers have a lot in common with magicians I feel. Not that we do magic tricks, but when you see a magician you expect him to have a wand and a top hat. That way you know he’s a magician. Well, I feel a lot like that with Gantt charts. Everybody expects me to carry one. I’ve got to the stage where I draw one just to keep the peace. It keeps reporting mechanisms happy.” One said, “Most of the time I could draw the schedule we need on the back of an envelope. Even for some of our big internal projects. But if I did that I’d be out of a job tomorrow wouldn’t I? So I draw them a bloody Gantt chart.” Another said, “If I want to make everyone happy I just get out the Gantt chart and point at bits I know lots about. They all smile and nod, then I can get back to managing the project.” Another, “Company reporting mechanisms require me to produce a detailed Gantt chart. But a lot of the time I don’t actually use them to manage the project. I’m forced to use a hammer when all I need is a scalpel.” And another said when referring to the Gantt chart, “can you honestly imagine me turning up to a progress meeting without one?”

Even though project managers feel frustration that they are expected, even forced to use Gantt charts, they also manipulate this situation to their advantage and use Gantt charts to placate senior management and clients. As one participant clearly expressed, “It’s the Gantt charts that keeps *my* manager out of *my* office so I can get on with *my* work.”

When participants were asked to associate words or emotions with the Gantt chart they said; “Order, organised, control, methodical, systematic, frustration, structured, hope, efficient, instructive.”

As well as verbal and time related information, Gantt charts appear to contain emotion and affect. One participant said "the Gantt charts you're showing me don't mean anything to me I feel pretty neutral about *them*. But *my* Gantt charts can really stress me out." The Gantt chart also appears to be used as a tool to signal danger. "It really focuses my attention on the work. It heightens my awareness to issues. A bit like one of those Meerkats on the lookout for danger (laughing)."

Hopefulness also appears to be an emotion linked to Gantt charts. "When I look at it (the Gantt chart) all finished, (heavy sigh) I suppose I'm hoping that's how it will all turn out. I'm a shameless romantic aren't I (smiling)?"

The overall theme for the Gantt chart is attributed to the participant who said, "Mate, don't you know it's the project manager's Swiss Army Knife. It's useful in so many ways. Gets me out of all sorts of trouble."

All of the participants, but not all of the time, used a similar hand gesture when talking about Gantt charts or schedules. Figure 16 shows the starting position of this 'x-axis sweep' where the hands are extended forwards slightly left to the centre of the body with palms touching. The gesture is completed by drawing the right hand smartly away from the left hand in a sweeping action, stopping only when the right hand is somewhere right of the centre of the body (Figure 17). This gesture is clearly a function of brain architecture. See (Wood & Fischer, 2008) for expansive information on how the brain manages the relationship between numbers, space, and action. This gesture confirms that our 'mental time line' is tightly mapped onto a horizontal axis (Ishihara, Keller, Rossetti, & Prinz, 2008), and that the

modern Gantt chart is an advanced abstracted form of the primitive ‘x axis sweep’ that is itself a consequence of a cognitive process.



Figure 16: Gantt chart starting position



Figure 17: Gantt chart 'Sweep'

6.6.6 WBS

Two thirds of the participants said they use a form of Work Breakdown Structure (WBS) in the conceptual phase of the project. Building them using post-it notes on a whiteboard appears to be a popular method.

There appears to be a ‘commonsense’ aspect to the WBS. "To me the work breakdown structure is a pretty obvious concept. Self explanatory. I can't imagine how people built things without it." Another said, "If you took my post-it notes and whiteboard away from me I'd find it very hard to do my job. *How* would you even start?"

All participants view work in packets or as bounded objects. As one put it, "I like to break the work down into nice crisp chunks, and then connect them all up together again." This behaviour support Gestalt theories that in order to interpret what we receive through our senses we attempt to organize information into certain groups which include: similarity,

proximity, continuity, and closure (Kohler, 1992). No wonder the WBS appears to be self-explanatory.

When asked to associate words or emotions with the WBS participants said, “Tasks, order, symmetry, methodical, components, boxes, authority, satisfaction, control, agreement.” When referring to the post-it note version they said, “flexible, temporary, participate, all take part”.

Many experience satisfaction, contentment, even a sense of control from the WBS process. One said, “I’ve got all my ducks in a line. All the parts eventually fall into place after a bit of hard work.” Another said, “It’s a tool that really helps me shake out most of the unknowns. I mean not the WBS itself but the process in getting to it.” “It’s really satisfying when I finally get it finished - up there on the board.” “I’m relieved when it’s done. It’s a satisfying place to be. I know we can move on when we get to that stage.”

6.6.7 *Iron triangle*

The traditional way of evaluating project performance using schedule, cost, and quality performances measures, also known as the ‘iron triangle’ (Atkinson, 1999), appears to continue to be a pervasive concept of PM. All of the participants mentioned the triangle. Many referred to it as the time, cost, quality triangle. All thought it was a valid method of evaluating project performance, but as one put it, “what do we mean by quality anyways? You can put anything into that category couldn’t you?”

The iron triangle appears to be an easy to remember ‘rule of thumb’. One said, “I’ve got a drawing of the triangle above my desk. It helps me to focus on what’s important.”

Another participant said that they imagined each of the performance measures as analogue dials on a dashboard. “My quest is to keep all these needles in the green zone.”

The iron triangle does create tension for the participants. “(heavy sigh) well project management, to me, is all about trying to keep these three things (dotting their finger three times on the desk in the shape of a triangle) under control. And it can be a constant battle to do that.”

Some participants doodled a triangle shape on paper, and others traced an imaginary triangle either in the air or on the desk before them as they talked about it (Figure 18). None of the participants offered a reason for the triangle shape other than it was an easy way to remember the concept. Despite strong criticism (Atkinson, 1999), the iron triangle appears to survive because it increases anxiety by pushing fear buttons and because it is a easy to draw.

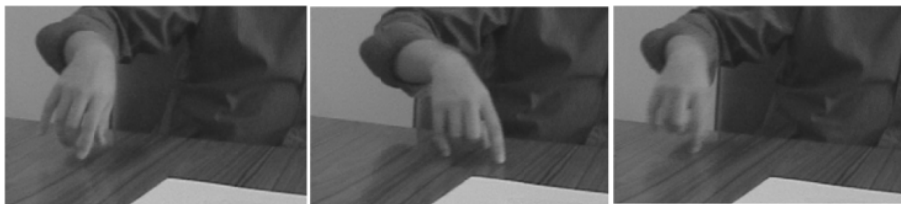


Figure 18: Iron Triangle

6.6.8 S-Curve

All participants recognised and understood the concept of the S-Curve though none applied it in practice in any real sense. “I sort of know that’s how projects are supposed to unfold. I learnt it on a Uni course.” Whilst pointing to the slowed growth part at the end of

the S-curve one participant said, “I wish all my projects ended like that– all calm and well paced.”

When asked to explain the S-Curve participants applied various metaphors that related the project experience to that of some natural biological cycle. The most common metaphor could be typified by “all trees start off as seeds, and then saplings, then a big growth spurt ‘till they finally produce fruit. Trees need watering and feeding, and looking after. Projects are just the same.” Pointing to the end of the S-curve one participant said “and the project never really dies. It just lives on in another form.”

When asked to associate words with the S-curve, participants said, “natural, growth, growing, organic, paced, and rhythmic.” When asked to associate emotions, participants said, “Hopefulness, promising, confidence, expectation.” “I hope it will turn out that way. (light laughter) And I hope that every time.”

6.6.9 *Post-nominals*

With the exception of two, participants displayed post-nominals on their business cards. One said "They don't mean much really. I got them fairly easily. But they do impress the management (pointing upwards) – the uninitiated." Another said "Personally I feel they have little or no currency within the profession. But HR and senior management like them. Without these letters (pointing to business card) I wouldn't have got this job."

Participants generally expressed disappointment with the accreditation process of their post-nominals, but felt that the post-nominals were useful in the job application process.

“(light laughter) it’s like a fake police badge. If I flash it (pulls business card from wallet) most people would be impressed wouldn’t they.”

6.6.10 PMBOK® Guide and PM methodologies

It is apparent that some PM methodologies are PM artefacts in themselves and are used as currency to gain a competitive advantage. "We use a maturity model. When I say we use it, I mean we use it on contract tenders."

Referring to the PMBOK® Guide "That was one of the books I use on my Uni course. Never really looked at it since though." All the participants were aware of the PMBOK® Guide, and all of them utilised a PM methodology of some sort, whether it were an off-the-shelf brand or a company-grown product. Participants appeared to be either for or against PM methodologies, some even crossed over the dividing line midsentence. "Frankly, I think these methodologies are a money spinning game for the institutions and governments that own and enforce them. But (long pause) on the other hand, I suppose we all need rules and guidelines - it would be chaos without them. " "We use PRINCE2 and I like it. It really suits the way I like to work." Another said, "Everyone here has been on a PRINCE2 course. But it would be death by paperwork if we fully implemented it." A little later the same participant said "I’ve just been for a job interview and all they wanted to know was how familiar was I with PRINCE2. So for 10 minutes I spoke like a PRINCE2 *guru*."

“(laughing) I was going to say that it’s (referring to a PM methodology) something for the whole company to get behind. But thinking about it, it’s something to *hide* behind more than *get* behind.” Participants appeared to take comfort from, and feel protected by, the methodologies they were using. When asked what they felt protected from one said, “Oh

protected from *blame*. Not *all* of it obviously, but *some* of it at least.” Another said, “Look – in one way if I’ve done all the right things, ticked all the boxes and followed the process, I’ve covered my arse.”

The term “twofer” is used as the overarching theme of this artefact. It comes from one participant who said, “My PRINCE2 certificate is like a twofer voucher and I can redeem it in two ways. I can flaunt it at interview or on my resume, or I can use it to shift some of the blame off me and on to the way this organisation does business.”

6.6.11 Professional institutions

Only half of the participants were actively involved in a PM professional body, and those that were showed allegiance to their chosen one. “I’ve been a member of the PMI for years. As a professional I feel I should actively support my profession.” Another said “The AIPM gives my career some credibility. I don’t feel I’m part of a passing fad. (smiling) Well most of the time I don’t.”

With the exception of three, participants did not believe that PM was a proper profession. Nevertheless they appeared to go along with the idea as it appeared beneficial to them. “I class myself as a professional because of my engineering background not because I’m a Project Director. But I go along with the position the institute’s trying to take. I can only benefit - I think.”

Participants view their membership to their PM professional institutions positively, as they appear to offer a sense of collegiality and job networking. “I go to the talks, and I’m off

to the conference this year. I find it intellectually stimulating meeting other professionals in likewise situations. (long pause) I got *this* job through the network of people I know through the institute, and I know that works for others too. ”

Participants feel that the institutes are playing a part in building a career path for project managers. “It’s trying to set the standard for professional practice. It’s certainly not, by far, rigorous enough yet. But it’s making a good start. I think it’s a good thing.” Another, “In my experience, senior management will only take the role of project manager seriously if it’s represented by a professional body. Look at HR these days.”

The PM professional institutes appear give the individual project manager a sense that he/she is part of an influential group – as critical mass of project managers where there is safety in numbers. “United we stand, divided we fall – isn’t that how it goes.” Another said, “It (the institute) gives me confidence. I need the conferences and chapter meetings to reaffirm that what I’m going is right, and that I’m not alone in all this.” From an evolutionary point of view the PM professional institutes appear to offer a ‘safety in numbers’ effect which is usually appropriated to flocking of birds and shoaling of fish. In these instances, by being part of a large group, each individual faces less risk of falling victim than they would if they travelled alone. The project managers in this study appeared to use their professional institutions and their respective PM methodologies to exploit the safety in numbers effect. The participants felt that being associated with a mass of project managers or a methodology sanctioned by such a group, that they were as an individual, proportionally less likely to be the victim of a project mishap or accident.

6.7 Discussion

The results of this study suggest that both hypotheses (H1 and H2) are highly plausible and that they explain the results of this study in a unifying way.

This section will discuss each hypothesis and draw comparisons with the findings of this study with those in the literature, and rationalise the findings within the evolutionary or memetic approach to PM.

Some (Cleland & Ireland, 2002; Evaristo & van Fenema, 1999; Maylor, Brady, Cooke-Davies, & Hodgson, 2006) have already mentioned that we should expect the concepts of projects and PM to evolve. However, underpinning these expectations is the idea that the process of evolution takes place for the benefit of the organisation. This view is conceptually different to that of the memetic approach which states that PM evolves for its own end (Whitty, 2005). The results of this study are considered with this latter view in mind.

H1: Project managers obtain an emotional affect from aspects of the PM experience.

This study has shown that project managers are drawn to project work. The participants in this study forage for projects because they can obtain or experience an emotional affect or more informally stated a favourable emotional fix from the challenge they present. A non metaphysical view of consciousness is that it is a melding of both primordial and secondary hardwired emotions (Denton, 2006). Emotions elicited from these behaviours and desires or thirsts for gratification culminated in the first conscious states. Memes that embody a 'thirst' for gratification will survive. We continue to perform Beethoven's scores and Shakespeare's texts while many scores and texts, more popular at the time than

Beethoven and Shakespeare, are no longer performed (Benzon, 1996). We humans have a thirst for salt and we have a thirst for tasks (Denton, 2006). We spend time foraging for tasks that furnish us with an emotional fix (Denton, 2006). Foraging can take many forms of behaviour such as sex, competing in sport, foraging for information in a book or a movie or on the internet (Card & Pirolli, 1999), systematised ritual (Dennett, 2006), and as the results of this study shows - planning and managing a project.

Overall, the cohort had a natural disposition towards optimism and their ability to positively reframe anxiety or apprehension concurs with previous findings on how project managers cope with stress (Aitkin & Crawford, 2007). However, this study has shown that despite the amount of anxiety and tension caused by their work, people are emotionally drawn to project work. The cohort of this study appears to find aspects of PM intrinsically rewarding, even absorbing or addictive, and they are stimulated by the challenges the construct of a project has to offer. Furthermore, they appear to be fairly sure they can handle these challenges with their existing skill and abilities, and view the project environment in a goal directed utilitarian manner, which is not necessarily the case for the novice project manager.

Even though determinism is a major plank of PM ideology (Whitty & Schulz, 2007) and project managers like to think of work in “crisp chunks”, they also appear to operate under the cognitive logic of yin-yang. They conceptualise the emotional experience of managing a project in terms of two possible states or statuses of events that ebb and flow; one state gradually transforming into the other state along a time dimension. What is also interesting is that these project managers find it necessary to conceal this behaviour for survival reasons.

The results of this study offer an interesting insight into PM when comparing them to the literature on psychological flow (Csikszentmihalyi, 2000) and more particularly flow in gaming (Sweetser & Wyeth, 2005). The term flow is a metaphor for an engaging or absorbing activity that is exhilarating, challenging, and creates an overall feeling of enjoyment. Projects can be immersive and engaging pursuits and an intrinsically rewarding activity, with artefacts such as the Gantt chart that act as an interface or proxy to the real world that are rewarding themselves to use. Further research might show that moments of flow (see (Csikszentmihalyi, 2000) pgs 38-47 for characteristics of these) can be found in aspects of the PM experience.

H2: Project managers use the emotional affects of PM artefacts to increase their competitive advantage.

This study supports previous findings that show that senior management do perceive project managers in a particular way (Crawford, 2005), that they view the Gantt chart as representing PM (Maylor, 2001), and that project managers do put on a performance of professionalism (Hodgson, 2005). This study has highlighted how project managers manipulate the first two of these situations to their own advantage.

The Gantt chart appears to be a multi use symbol. It is used to signal to the organisation that a body of work is a project and it, and all associated with it, should be given the proper consideration. It condenses into one symbolic event the anxieties, memories of past glories and humiliations, and promises of future success. It also functions as a piece of

modernist artwork, the creation of which is directed towards social purposes such as placating senior management rather than just a graphical plan of work.

At an emotional/neurological level the overall idea of PM and some artefacts of PM such as the Gantt chart, WBS, and iron triangle appear to quench the physiological thirst to control ones environment, for order and reassurance. Consequentially this leads to reduced levels of anxiety in the individuals who use them and those who perceive them to be used such as senior management. Real control is not required to reduce anxiety, the illusion of it will suffice (Langer, 1975).

6.8 Conclusion and Implications

This study set out to advance an evolutionary framework for project management research by demonstrating that PM is pervasive in Western corporate culture because humans, in this study the project managers, obtain an emotional affect from the PM experience. Furthermore, that project managers utilise various artefacts associated with PM in an emotional way to increase their competitive advantage in the organisational environment. In short, the findings of this study show that people who manage projects enjoy the experience; they forage for project work. Moreover, with the assistance of various PM artefacts they emotionally manipulate their environment to their own advantage.

6.8.1 Implications

With regard to H1 and H2, by the one we are victims, by the other we are victimisers. As project managers, we are largely ignorant to our lack of freedom, and ignorant of what it is that makes us behave the way we do. This research has been an attempt to examine some

of our project management behaviours and obtain a glimpse of what underpins them. Both H1 and H2 have significant implications for the scholarly community, the educational sector and the PM professional institutions, as well as project orientated organisations and the PM practitioner.

In almost all instances, introductory courses to PM comprise a topic on how to draw a Gantt chart. This state of affairs, both implicitly and explicitly, makes a positive correlation between the creation of the Gantt chart and the performance of the project. However, the findings of this research highlight the difficulties that exist in attributing value to various PM tools, practices, and behaviours. From the cohort in this study we know that some practitioners create Gantt charts because they enjoy the Gantt charting process, and some create them to placate others and/or to be viewed favourably by others. It is simply not clear how Gantt charts or the scheduling process in general contributes to the overall performance of a project. To address this situation a more scientific or rational justification for PM practices needs to be developed. The scholarly community will need to discern the various evidence based practices of PM, the educational sector will need to infuse PM programs with evidence based practice, and the PM professional institutions will need to promote and endorse them. This way we can bring a level of intellectual honesty to the discipline of PM.

This research has illustrated that the many work related behaviours of the project manager are in a sense determined by their physical environment (e.g. the tools and process they are required to use and adhere to), as well as the cultural environment (e.g. the norms of their organisation and professional PM body). No doubt many senior managers would agree that what a project manager does with his or her time should be, in some way, measurably connected to the successful management of the project. From the cohort in this study we

know this is generally not the case as some were drawn into activities that gave them comfort and a sense of control, whilst others felt it necessary to present a particular professional image that enabled them to secure a favourable competitive advantage in their organisation.

Senior management could get more value out of their project managers if they understood how they are affected by the physical and cultural environment of their organisation. Project managers should be encouraged to pursue activities that demonstrably lead to increased project performance, and if new evidence based tools, practices, and cultural norms need to be adopted whilst others are abandoned then so be it.

As scholars and practitioners of PM we are bound together in a fellowship of project experiences. We can use the findings of this research to wisely develop our capacity for self reflection and critical reasoning so that we might pursue a course of activity towards project management which is establish in evidence based practises.

Finally, I suggest future research on this topic should explore the links between project management, social architecture, and flow theory.

Chapter 7: Discussion

7.1 Introduction

My thesis opens with a quote from D'Arcy Wentworth Thompson, “Everything is what it is because it got that way”. I’ve paraphrased and adapted this quote to apply the same sentiments to project management in particular to set the scene for the discussion ahead.

Modern project management has got the way it is by bootstrapping itself to our Western cultural preferences, and not all of its benefits go to our species.

My thesis aimed to explore the reasons why project management is so prevalent in the Western corporate environment, when it falls short of business expectations. In particular, it sought to answer this question from an evolutionary perspective that also embraces existential philosophy. This first half of this discussion centres on the two themes of evolution and existentialism and draws on the literature from preceding chapters, particularly the literature review in Chapter 2. In the first of these themes I discuss the matter that natural selection has hardwired us for project management, and therefore we are necessarily drawn to, or forage for, project management activities. In the second theme I extend the discussion of Chapter 6 and suggest we consider project management artefacts such as the Gantt, WBS, and S-Curve to be thinking tools or abstraction that inculcate emotion and meaning. I discuss how we as humans can use the insights from an evolutionary perspective of project management to enable us to understand and develop a new knowledge and rationality of inquiry into the principles and nature that underpin project management. In short I propose a new philosophy of project management.

The second half of the discussion centres on the two themes of disorientation & confusion and liberation, which are possibly the next phases of development one proceeds to after one's previous views of project management, or any other concept for that matter, have been torn apart. In the first of these two themes I attempt to crystallise any feelings of disorientation or confusion we might experience by highlighting how we currently misunderstand and misinterpret project management and how powerfully we are influenced by Projectistan. Based on the preceding themes of the discussion, the last theme 'liberation' is essentially a commitment and call to action.

7.2 Evolution

First to note is that it is important to distinguish the practice of project management from that a management fad or fashion. The behaviour we observe to be project management is more than a cultural whim as the fundamentals of its organising techniques have been part of our cultural practices for many thousands of years. In a sense, we humans are literally built (by natural selection) to manage projects.

In a very literal sense Chapter 3 was about a view of our human social world from the point of view of the concept, idea, or meme of project management. A key message was that project management is a relatively stable meme (2.7.6.1) that has bootstrapped itself to our hardwired traits to organise and our Western cultural values, and utilised various western cultural mechanisms to replicate. In a sense it evolves for its own end.

7.2.1 *Hardwired for project management*

I previously made the point that animals are inextricable from the artefacts they produce (2.7.1). This point, I suggest, should be clearly extended to humans and their work, particularly projects and project management. Consider Figure 19 and Figure 20. On the left, a dam built by Beavers, on the right a dam built by Humans. Just as the log dam is an extension of the Beaver as the dam is encoded in the Beaver's genes, so too is the modern dam an extension of Humans as the dam is encoded genetically and memetically across our genes and culture. We humans are hardwired by natural selection to build things. Our culture, values, ideals, and technology, powerfully influence the nature of what we create and build and the manner in which we perform those tasks. As I have attempted to demonstrate throughout my thesis, modern project management is a product of Western cultural values and ideal, built on top of a predisposition to create and build.



Figure 19: Beaver Dam



Figure 20: Human Dam

7.2.2 *Drawn to project management*

The study in Chapter 6 demonstrated that extant project managers are drawn to aspects of project management work. Not only do they find enjoyment in some parts of their

role as project manager, but they actually seek out or forage for project work in general because they get a physiological ‘fix’ from it (2.7.4,6.6.1). What is particularly interesting about the findings of this study is that there were many parallels between the emotional affects of project work and the emotional ‘flow’ affects from computer gaming (6.7). I suggest the nature of these moments of flow will necessarily impact on how project management evolves in the future.

7.2.3 *Because it got that way*

The practices of modern project management are not founded on evidence based practices. The arguments and findings of my research have brought to the fore the notion that the various behaviours and artefacts of modern project management survive for reasons more complex than simply because they enable project managers to be productive and deliver projects successfully. I have argued from an evolutionary standpoint that modern project management has got the way it is for various reasons. Principally among them is that some are easier to replicate than others, some create a cultural advantage for both individuals and corporations, and some create an emotional affect which project managers and their supervisors find appealing.

7.3 Existentialism

Projects and project management appear to be a new way of being at work in a particular social environment. Over the past two centuries, beginning with the industrial revolution, we have moved through the ages of steam and railways; steel, electricity and heavy engineering; oil, the automobile and mass production; and the age of information and telecommunications. Today we could be considered to be in the era of the knowledge and

intangible economy where many of our production factors could be viewed as collaboration or engagement assets. The workforce is changing too as women have begun to enter the paid workforce in record numbers in almost every country. This situation, along with advancements in technology, will introduce remarkably innovative ideas and practices to the workplace. However, we humans are still physiologically designed for a primitive environment, and we still respond to the modern environment in the same way as we did some 50,000 years ago (2.7.7).

My research presents the case that the modern Gantt chart is not so modern after all. Rather it is a highly abstracted artefact which is inextricable from the primitive anatomy of the brain of its creator and user because it comprises abstractions of physical gestures and forms that have their origin in an emotional state that is evoked by the primitive human ‘thirst’ to control ones environment. As humans we have pursued this thirst over the millennia and it has created evolutionary advantages for our species as there are survival benefits for living in an organised society.

One distinctly organised society is that of the Corporate West, the morals and values of which are founded on the Judaeo-Christian faith. This social environment has been of particular concern to my research which suggests that the concept of project management bootstraps itself to the values of the Christian Protestant faith as it contains the ideologies of liberalism, reductionism, and a strong work ethic that further underpin the ethos of capitalism. Being at work during the industrial era one would have principally used physical tools made of iron and steel. Today in the Corporate West, and more particularly the environment dominated by projects I have characterised as Projectistan, one would use a variety of thinking tools.

7.3.1 *Thinking tools*

As ant brains are invaded by the Lancet fluke (2.7.6) so human brains get invaded by memes. We might like to rephrase this and say that we ‘pick up’ thinking tools in a proactive manner. However, it is more accurate to describe what happens by drawing on the virus analogy and say that we catch thinking tools from others, or that they are left around in books, computers, or plain sight for us to pick up or catch.

I previously illustrated how words and metaphors can be regarded as thinking tools (2.7.9 and 1.3 respectively). The nature of a thinking tool is that it can be an abstracted recipe for action and it can be loaded with local meanings. That is to say that if one put a thinking tool under some form of analysis one might find that its origin had a physical sensorimotor or gestural aspect to it. Also, the meanings one derives from a thinking tool might drive one’s behaviour, but not necessarily to one’s benefit, as the benefit could go to others, even the survival of the think tool itself. Next, with both of these points in mind, I consider the abstracted forms of the Gantt chart, iron triangle, S-curve and WBS and speculate on how their abstracted forms might be interpreted. But first I consider the concepts or thinking tools called project and project management and speculate on their gestural inheritance and how they too might drive behaviour.

7.3.1.1 *Project*

Through the liberal application of the word ‘project’, there is a significant danger that project management is regarded as a polymorphous activity, as projects can be regarded in many different forms and take place in innumerable situations. In this sense almost every

human endeavour can be considered a project that requires managing. One's garden or wedding could be considered to be a project. However, I suggest such a liberal application of the terms 'project' and 'project management' is unhelpful unless one understands that they are thinking tools. As I have argued in Chapters 3 and 4, considering work to be a project limits one's vocabulary to describe the subtle nuances of work. Somehow the sense of fulfilment and pleasure one gets from the unstructured behaviour of gardening seems to be diluted when one reduces it to a project. Similarly the sense of hopefulness and sharing of a wedding can be diminished by invoking the language of project management.

7.3.1.2 *Project management*

Today the word 'project' is used in the corporate environment as a unit of work and 'project management' gives a strong consensus for the form of that work, the way it takes place, and a certain fidelity to a canon of work where all activities appear to require scoping, planning, and negotiating (4.10). When one acknowledges both 'project' and 'project management' as linguistic abstractions for particular thinking tools, one can appreciate their strengths and limitations. Like the invisible cord of the ballet dancer (1.3), it can drive behaviour which might be beneficial, but one must be careful not to argue over their form as they do not in any real sense exist. For example, the argument between whether a project is complex or not could be akin to the argument that some invisible cords are made of inflexible steel, whilst others are of a more flexible nature. Considering or viewing a project as complex is one matter, believing that it is complex is another. To regard the terms and phrases of project management as thinking tools enlightens us to their nature. To regard them as unquestionable absolutes leaves us vulnerable to the behaviour they drive.

Synonymous with project management is the Gantt chart, and as the study in Chapter 6 shows, its two dimensional shape and form is an abstraction of the three dimensional hand gestures. The Gantt chart, via project management software, is the most widely used tool used by project managers (White & Fortune, 2002). In the practitioner's world it has become more than a tool, it is a symbol with real properties that have a local elaborated sense. My research demonstrates that whenever the Gantt chart is used or referred to its abstracted forms, lines, and annotations are loaded with local meanings. It is no longer just a few lines drawn in parallel with a time axis. As I discuss next, its shape is important. As well as being a symbol that drives behaviour (indirectly via emotion); it is an abstracted product of behaviour that has an emotional base. Like the modern Gantt chart the Iron Triangle, S-curve and WBS appear to be important symbols too as they variously connect to how we humans have come to understand and find meaning and purpose in our work today.

7.3.1.3 *Gantt chart*

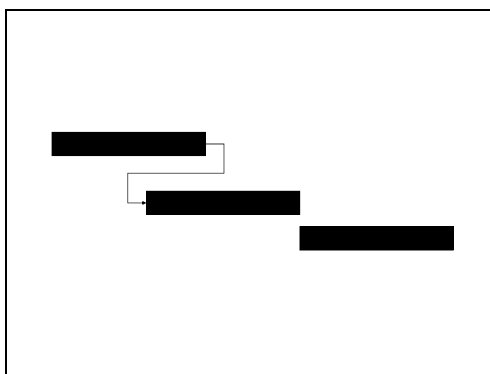


Figure 21: Abstraction of a Gantt chart

Figure 21 represents the traditional trickledown view of the modern Gantt chart that is considered to be a consciously invented and honed graphical tool that has the deliberate intention of maximising work task efficiency, the proper use of which, along with the

appropriate use of other project management tools and techniques, will lead to successful project delivery. An inference of this view is that Gantt charts are prevalent because they somehow lead to successful project delivery. However, as previously mentioned (2.5), project management is not on the whole delivering projects successful. The suggestion that Gantt charts are prevalent because they ‘work’ is simply unsubstantiated.

When one applies the bubble-up or evolutionary view to the modern Gantt chart, one sees that it is a remnant of a gesture, a graphical abstraction of how our ancient human brain processes the accumulation of work over time. What if our drawings about how a project unfolds in space and time were not restricted to the constraints imposed by the anatomy of our brains? What if we could draw a schedule from the point of view of the project rather than the point of view of the humans?

7.3.1.4 *Iron triangle*

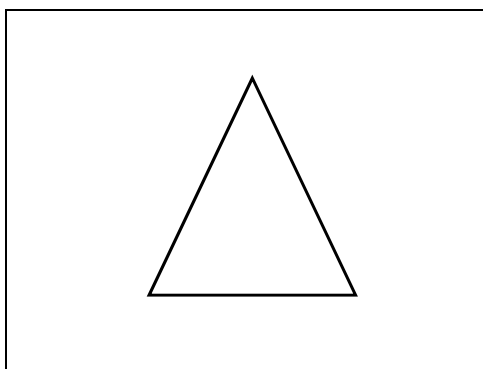


Figure 22: Abstraction of the 'iron triangle'

Figure 22 is an abstracted form of the iron triangle in Figure 4. But why *draw* a triangle in the first place? The triangle as a symbol is old, but is not of the prehistoric age, as it is not seen on the oldest rock carvings or cave paintings. Foremost it is associated with the

holy and divine number of 3. In Christian symbolism it stands for the Holy Trinity. It is said that it is through the tension of opposites that the new (a third) is created. Speaking philosophically, the thesis gives rise to its antithesis, and these together create a synthesis. Karl Marx, influenced by Georg W.F. Hegel, worked upon this idea and it became known as dialectical materialism, and this idea further influenced the Chinese revolutionist Chairman Mao.

The triangle, a shape more like kiki than bouba (see Figure 8), has been a symbol for power and danger, as well as safety, success and prosperity. More commonly we observe roadside warning signs using the triangle to communicate their message. The triangle is also a standard sign on the dashboard of cars for the warning lights. Another familiar example is the foldout warning triangle placed on the road when a vehicle is stopped. Does the iron triangle survive, despite criticism (Atkinson, 1999), because as a symbol it pushes our fear buttons about how our work performance will be measured, or simply because it is a easy to draw? I have argued that both reason have merit, and that practitioners use the triangle shape to remind themselves, via a simple gesture, of the performance measures they will be required to meet to secure their jobs and culturally survive.

A final observation on the iron triangle is that it is always drawn with its point upwards as opposed to downwards. Is this merely a symbol of stability with the triangle's base firmly planted on the ground, or is there something more to this? The upward pointing triangle is sometimes called the blade. One could speculate that, being purely phallic in origin it represents aspiration, rising force and the male principal. The downward pointing triangle is sometimes referred to as the chalice, and represents water (flowing downward), the grace of heaven, and the womb. It is one of the most ancient symbols of female divinity.

Perhaps the iron triangle speaks to us as it were with stern male tones, warning us principally to pay attention to time and money.

7.3.1.5 *S-Curve*

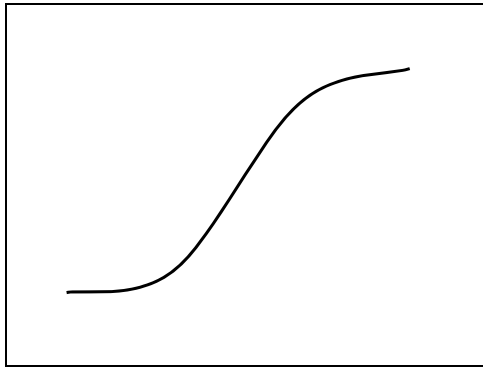


Figure 23: Abstraction of the S-Curve

The S-Curve (Figure 23) is a logistic function or logistic curve that models growth. It has been applied to various disciplines such as physics, biology and economics. For example, the development of an embryo, the diffusion of a virus, and the utility gained by people as the number of consumption choices increases. The model depicts the initial stage of growth as approximately exponential; then as competition arises, growth slows; and finally at maturity, growth stops.

Perhaps the S-Curve connects with humans at a deeper physiological level as there are parallels, as discussed in the bouba kiki effect, between human forms and human temperaments (2.8.3). Straight lines relate to order, jagged lines relate to chaos, and curves relate to beauty. Maybe, as my research findings suggest, the S-Curve continues to be used because it serves as a prompt that enables us to tell a story about how natural, organic, and non-threatening the practice of PM is; leaving us feeling safe, secure, and somehow familiar with the process, and open to more ideas of the same.

7.3.1.6 The WBS

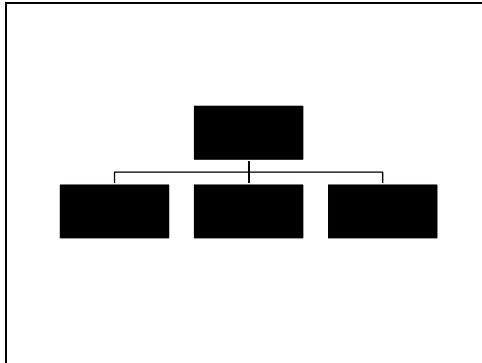


Figure 24: Abstraction of the Work Breakdown Structure

Project management practitioners organise work in a WBS using the Gestalt principles of grouping (2.8.4). Defining a part, or the boundaries of parts, is purely subjective, and so is naming those parts, and naming the parts or tasks of a project. Because of the way mathematics (the language of science and engineering) works, we tend to have a mechanistic or clockwork view of the world and the way it all operates. Weinberg (2001) points out how we reduce (logically and mathematically) and consider things from a mechanical cog-based paradigm. This is the case with the WBS (Figure 24). Projects and their management processes are reduced to tasks, and named and labelled so that they may be categorised and studied with the hope of turning the body of work into a well oiled machine. Whilst reductionism may never lead us to understand human relationships, I am convinced that a reductionist approach is heuristically useful. My caution is that a reductionist approach alone blinds project management practitioners to the complete character of work and how it influences people, motivates and manipulates them, inspires and shapes behaviour. In a Newtonian reductionist way we simply cannot take living things apart to find out how they

function as a whole. Certainly much will be discovered about the parts, but where does one part end and the other begin?

By presenting work tasks in the easily recognizable form of a family tree, the WBS reinforces the idea that a body of work is all about the tasks. However, a family tree does not characterize the family. It does not describe the complex dependent and interdependent relationships of the individual members that comprise the social unit one would recognise as their family.

7.4 Disorientation & Confusion

My thesis has challenged the way we as practitioners and scholars believe project management *is* or *should be*. In the period that follows there may be a feeling of disorientation and confusion until the full impact of my arguments and findings are realised, even to me. As I suggested in Chapter 1 we have been duped or perhaps more poetically speaking romanced by the notion of project management, and there are two matters I believe we should be concerned about. The first is that modern project management still teaches us to view and reward work in a very 19th Century manner. The second is that we must be open to how our behaviours are driven by the social and physical environment I have called Projectistan.

On the matter of the first concern, by viewing project management behaviour through the lens of our Judaeo-Christian culture we have misunderstood and misinterpreted it in the same way Darwin's *Origin of Species* was misread in the 19th and early 20th Century (2.9.1). In Chapter 4 I highlighted how the ideals of the reformation and the enlightenment still

influence the values of modern project management. In the 19th Century evolution was seen as potential and regarded to be the unfolding of a predestined outcome (2.9.2.1). Today modern project management still takes this predestined ‘follow the Gantt chart’ approach to work. In the 1920’s the Eugenacists took their better baby and fitter family contests to country fairs (2.9.2.2) to promote the biological and social traits that they believed should be endorsed and allowed to progress. Today in a similar manner, almost every project management professional society presents their awards for ‘best project manager’ or ‘best project’ at their annual conferences and these activities are implicitly and explicitly endorsing particular behavioural traits. Even the primitive society meme (2.9.2) has surfaced in the debate of complex project manager vs. non-complex project manager where the complex project managers are attributed higher status (Whitty & Maylor, 2009). We need to move beyond this 19th Century way of viewing and rewarding work to a way of viewing project management as a process of cultural change, where change in the work realm can be re-engineered through project management.

On the matter of the second concern, in Chapter 5 I developed the concept of Projectistan, which is itself a thinking tool I use to characterise the pre-defined cultural world that new project managers find themselves thrown into and the more seasoned immersed in, and where their behaviour is powerfully influenced by social norms. In Projectistan, lucky situations go unrecognised (5.5.3), and impression management appears to be a necessary skill (5.6.4). Even the uncluttered and orderly office space of today provides a powerful backdrop that bolsters the claims of modern project management. In Projectistan project managers are portrayed as actors who utilise various props and scripts (artefacts and language) to create the impression that they are in control of their projects, and they are driven to do this in order to create competitive benefits for themselves and their corporations.

Those who do not ‘play along’ simply don’t ‘get along’ (survive - culturally speaking) in project management.

Furthermore, the study in Chapter 6 found that the various props and scripts used by project managers do have an emotional affect. That is to say that when they are used (e.g. the project manager presents a Gantt chart to senior management) the emotional qualities of the artefacts manipulate the environment (e.g. reduce senior management’s anxiety about the project) in such a way as to provide a useful benefit to the project manager. Practitioners need to be released from these acting pursuits and their tools and environment should enable them to be more productive in relation to their projects.

It is worth restating that whilst many project managers have benefited from Projectistan, in general there awaits a trap for humans as this peculiar environment is inhabited by humans and corporations, both of which are able to select or give a preference to particular memes. I suggest that Projectistan will in the future, if not already, have more memes that favour corporations than those that favour humans.

7.5 Liberation

When completely embraced, an evolutionary mindset towards project management behaviour is liberating because it provides a platform from which to launch a revolution, to explore project management anew and provide the foundations for a new philosophy of project management that will enable us to turn management platitudes on their heads, to shift the balance of benefits towards humans rather than Corporations, and ultimately democratise the workforce.

The memetic approach to project management research provides not only a framework for enquiry, it also provided a basis for re-engineering (2.7.10 - memetic engineering) project management. With a memetic framework for project management we no longer need to accept management platitudes such as “failing to plan is a plan to fail”. We are now able to rationalise that these phrase have more to do with the fact that they are a poetic play on words that is easily remembered, than they are to do with any behaviour that leads to success.

As I previously argued (5.5.2), the corporate citizen is unlike the human citizen in that the benefits from project management may largely go to the former rather than the latter. Simply put, the project management meme is replicating unrestrained and aspects of it, such as temporary project teams, are being selected because it aligns more with the values and priorities of the corporation rather than those of the human team members. Left to its own devices, such memes have the ability to rationalise the fractionalisation of the workforce. Future research could see an extended version of the memetic framework for project management in Chapter 3 map the benefits of various project management tools, concepts, and artefacts, to their various beneficiaries.

One of the principle approaches in examining project management anew will be to broaden the language base of the discipline through a process of democratisation, along with introducing alternative ways of conceptualising project work that acknowledges non-linear luck and reduces the need for impression management.

7.5.1 *Democratise the workforce*

The manner in which I propose a democratisation of the workforce is thankfully more sophisticated than mobilising the workforce to vote on every decision. What I propose involves two basic principles; a bottom up or ‘bubble up’ approach to decision making, and a horizontal domain view of project management rather than the current hierarchical ‘we strive to attain the one best way’ discipline approach as previously described (2.2). The bottom up or ‘bubble up’ approach to decision making can be realised by returning to an older style of management that was focused on creating value for the client via an ongoing consultative process (Winter et al., 2006). The domain view of project management can be realised by reconceptualising project management to be a domain specific activity, and this might be achieved by enabling a free and open source body of knowledge for project management as well as a mechanism for practitioners to share their project mishaps or near misses

7.5.1.1 *Domain specific project management*

To memetically engineer project management to more directly influence the product or deliverable of the project by simply attempting to add more language to the project management lexicon is not realistic. What is needed is a re-conceptualisation of project management into various domains such as health, arts, sciences, engineering, technology, education, agriculture, and so on. Once project management is ‘let lose’ in domains such as these it will consequentially pick up new terms and new language, which will in turn better integrate it to the various domains.

7.5.1.2 *Open source body of knowledge*

The call for the PMBoK to be made free is not new (Giammalvo, 2007). However, I suggest that there can be an Open Source Project Management Body of Knowledge (OS-

PMBok) which can be enabled to evolve and be distributed freely. One way of commencing this activity is to follow an example much like that of the software development industry which has collaboratively developed a Manifesto for Agile Software Development (Beedle et al., 2001). This manifesto is a general statement of principles that the industry has informally agreed should underpin agile software development. Various professional bodies, not just project management ones, could be involved in directing the development of the new OS-PMBok, and the various domains such as health, engineering, media and so on could develop their own knowledge libraries that would capture concepts and practices that are particular to their domain. Clearly the internet would be a good vehicle for distributing and contributing to the OS-PMBok with an elected body having oversight of the process.

The development of the OS-PMBok is beyond the scope of this thesis. However, the benefits of developing free and open source material can be found in Eric Raymond's book "The Cathedral & the Bazaar" (Raymond, 2001) which contrasts the developmental styles of developing materials, software, and knowledge. I would liken the closed (Cathedral) development style with tight specifications towards specific goals and run in a hierarchical authoritarian manner to that of the present development style of the PMBOK® Guide. Whereas the development style I am suggesting for the OS-PMBok could be likened to the peer-to-peer, decentralised, or open market (Bazaar) style, with constant solicitation of feedback from users and peers.

7.5.1.3 Culture of anonymous reporting

The honest and frank input from users and peers would be an essential part of the developmental process of an open source body of knowledge for project management. I suggest that a system should be put in place for practitioners to anonymously report project

management mishaps or near misses such as those systems that are in place in the domains of aviation and public health. See Barach & Small (2000) for a description on how anonymous reporting has been implemented across various domains. Once again the design and implementation of such a reporting system for project management practices is beyond the scope of this thesis. However, such a system would significantly influence the education and engagement of all stakeholders in project management, and perhaps bring the concept and incidences of non-linear luck to the fore of the discussion that informs the development of a free and open source body of knowledge for project management.

7.6 Limits of the research

The major limits of my thesis might be said to centre on the validity of my theory building and the generalisability of my results in Chapter 6. With regards to my theory building, I have not built the typical complex framework that necessarily comes from theories founded on qualitative data. On the contrary I built a relatively simple memetic framework (Chapter 3) which uses evolutionary theories to re-interpret empirical evidence. With regards to whether or not my research results are generalisable, then I would have to say that they are not, nor are they purported to be. The methodology to the study in Chapter 6 is based on empirical phenomenological research which is the rigorous study of (ology) phenomena (what appears to humans), and of what appearances can tell us about the general nature of being in a particular context or environment. The number of respondent on the study is immaterial as an increase in number would only give a wider view of experiences. The experiences of 1, or 5, or 18 are all important. No statistical analysis is conducted; however data is condensed and interpreted in to natural (using respondent's words) themes.

Chapter 8: Conclusions, implications, and future research

8.1 Conclusions

Overall my thesis makes a contribution to the field by developing a new philosophy of project management that is concerned with raising questions, with the assistance of an evolutionary framework, about how one should consider projects and project management, what sorts of things exist, what are their essential natures, and how we might go about progressing project management into the future.

My call for a new philosophy of project management is prompted by the current dissatisfaction amongst project stakeholders who are disappointed with poor project performance, a condition which is somewhat at odds with the popularity of project management. In order to develop some understanding of this apparent paradoxical situation I proposed to describe project management behaviour from an evolutionary standpoint, and in Chapter 3 I developed an evolutionary (memetic) framework that describes aspects of project management behaviour in social evolutionary terms. In Chapter 4 I applied this memetic framework to the evolution of the values and practise of modern project management in an attempt to show that the espoused values, practises, and underlying ethos of today's project management is still powerfully influenced by our world view of over 100 years ago. The body of knowledge for project management, as exemplified by the PMBOK® Guide, continues to powerfully shape the practice of project management. The PMBOK® Guide copyright is owned by a private company and it is not transparent who decided what goes into

the guide book and who decides what is left out. In my view this is an unhealthy situation for the development of a body of knowledge that has the potential to impact on so many.

Chapter 5 applies the memetic framework for project management to the various behaviours one encounters in the project management environment. I coined the phrase “Projectistan” to describe the particular and fairly recent environment where project management as both concept and practice appears to survive well. I argue that project management does not survive in this environment because it leads to successful project deliver, but because it is concerned with the cultural survival of individuals and corporations in the environment of the West. In Chapter 6 I used a phenomenological study to explore the emotional mechanisms that underpin various behaviours of Projectistan such as making work breakdown structure and drawing Gantt charts. My findings suggest that many of the behaviours and artefacts of modern project management have not evolved simply because they influence the productivity of the company. Rather these behaviours and artefacts have evolved for a number of reasons, most significantly among them is to increase the social survival chances of the individuals who utilise them, whether they are consciously aware of this or not.

In the discussion I drew my arguments and findings from previous chapters together to provide a rationale for a new philosophy of project management that acknowledges evolutionary principles and existentialism which can be summarised by saying; that we are hardwired for project management as our behaviours and artefacts are encoded across our biology and our culture; that some are drawn to aspects of project management because they get an emotional fix from it; that modern project management is not founded on evidence based practices, rather it has evolved the way it has for reasons other than that it leads to

successful project delivery; that aspects of modern project management reflect the morals and values of our largely Judaeo-Christian culture; and that the various artefacts of project management are loaded with local meanings which are passed on to others.

I also drew attention to two concerns that emerge when one considers project management from a memetic point of view. The first is that the values of modern project management have changed little since the 19th Century. The second concerns the inefficiency of the Projectistan environment where much of a project manager's time is spent on pretence and survival rather than delivering project successfully.

The discussion closes with an exhortation for a course of action that leads to the liberation of project management practitioners and scholars. The central tenet of which is the democratisation of the workforce through domain specific project management which is enabled by an open source body of knowledge and a culture of anonymous reporting.

8.2 Implications

There are of course significant implications for the arguments and findings of my thesis which I believe will be far ranging for project management as it will need to become more evidence based and domain focused around an open source body of knowledge, and this is likely to have significant implications for the professional institutions, the education sector including scholarly pursuits, society in general, and the practitioner in particular. Broadly speaking, reconceptualising project management in the context of the domains will significantly change the modern PMBOK® Guide version of project management that is so pervasive and familiar.

8.2.1 *For the profession*

The implications for an open source body of knowledge for project management will be significant for the current project management professional bodies, particularly the PMI who hold the intellectual property to the current PMBOK[®] Guide. The PMI and others will need to abandon their ideals for creating a professional class of project managers and adopt the role more like that of a vocational skills awarding body. As the various domain specific bodies of knowledge for project management emerge, these new project management institutes could develop and administer specific project management qualifications, in conjunction with key industry bodies, that could be delivered by colleges, universities, and training providers.

These new project management institutes will also need to establish new alliances with the academic community and lend support and cooperation to evidence based practice research. Key industry bodies that represent the various domains could also contribute to the development of the OS-PMBoK through their special interest groups.

8.2.2 *For educators*

Future project management education courses will need to shift the emphasis from the current format of anecdotal evidence to that of specific domain project management knowledge and evidence based research. Undergraduate project management programs may become more prevalent as course content increases as domain specialisations are offered as electives. Perhaps post graduate studies would move from the general Master of Project Management to a more meaningful and recognised Post Graduate Diploma in Managing Projects in Health, or Commerce etc. Project management programs should also include a

unit or subject that addresses social contagion and the influence it has on project management lore.

8.2.3 *For researchers*

Hopefully project management scholars will be driven to pursue more extensive evidence based research along with cooperative industry partners who regard their domain specific project management practices and tools to be more beneficial. Researchers will be required to be more rigorous about their data collection, favouring ethnographic methods rather than fashionable online surveys.

8.2.4 *For society*

Society in general will reap the benefits of a more tailor made and evidence based project management. The removal of costs associated with pointless project management rituals and bureaucracies could be past on to the consumer.

8.2.5 *For practitioners*

The practitioner will probably bear the brunt of the implications of my thesis. Anecdotal hearsay evidence to support practices will no longer be sufficient as evidence based practice will be demanded by the organisations. This of course is a positive situation for the practitioner because they can respond to any queries or criticisms from senior management with a demonstrable body of knowledge. Furthermore, project managers would be able to view themselves as specialist because their knowledge would extend across all forms of project work within their particular domain.

8.3 Future research

In light of the arguments and findings of my thesis, future research could pursue the following themes:

- Mapping benefit to beneficiary: This would further explore the memetic framework of project management by expanding it to include a map of benefit to beneficiary. Such a map might show where the balance of benefits lies; to the human or the corporation.
- Memetic frameworks in social science: This would expand the application of a memetic framework to other areas of the social sciences such as education, geography, history, law, and so on.
- Domain applications of project management: This would explore the various domains that are as yet uninfluenced by the PMBOK® Guide version of project management to see how they manage their project work.
- Moments of ‘flow’ in projects: This would investigate the moments of flow that could be associated with aspects of project work, and further develop how moments of flow can be identified and measured.
- Re-engineering the project environment: This would explore the social architecture of the project environment with the intention of re-engineering new ways to conduct

project work that will embrace the luck factor and reduce the prevalence of impression management.

8.4 Final remarks

Who decides what is in and what is not in the body of knowledge of physics, biology, and chemistry? The answer is – the scientific community. Who decides on the body of knowledge for medicine and law? Once again a community of people is involved. Who decides on what is in and what is not in the project management body of knowledge? The answer is – it is hard to know as the Guide to the Project Management Body of Knowledge (PMBOK® Guide) is published by the Project Management Institute (PMI) and the authorship is unknown. Surely this is an unsatisfactory situation as the PMBOK® Guide is recognised internationally as a standard for the fundamentals of project management and it proves to be a foundation stone for project management competency standards and educational programs worldwide. One of the PMI's responses to stakeholder dissatisfaction with project results is to release a new edition of the PMBOK® Guide slightly different to the previous.

The project management body of knowledge needs to evolve freely if it is to meet the needs of all its stakeholders, and it might do this if it is evolved by its community of scholars and practitioners in a free and open manner.

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Appendix: A

The prevalence of project management in western corporate society:

Determining the affective or automatic emotional responses practitioners of project management have to project management artefacts

University reference: 2007/12

INFORMATION SHEET

Who is conducting the research

Name(s)	Mr Stephen Jonathan Whitty, Researcher Dr Mark Schulz, Head of Higher Education Research & Consultancy Group & Director, Australian Hub of MIT iCampus Outreach Program Dr. Gordon Wyeth, Senior Lecturer, Deputy Program Director for Mechatronic Engineering
School(s)	School of Information Technology and Electrical Engineering, The University of Queensland
Contact Phone	(07) 3365 2390
Contact Email	jonw@itee.uq.edu.au

Why is the research being conducted?

This University of Queensland doctoral research aims to explore the reasons for the prevalence of project management tools and practices in western corporate society. Despite decades of research and practical experience of the discipline of project management many corporations continue to report that project failure is commonplace. There is still much about project management that is not understood.

This doctoral research has put forward the argument that because the discipline of project management has not subjected many of its popular tools and practices to rigorous evidence based scrutiny many of them remain in use because they have won the 'natural selection' race. That is to say that the popular ones are popular because they have a traditional or fashionable quality about them rather than being effective at delivering projects successfully. Somehow, the iconic tools and practices of project management have successfully competed for our attention against others probably more efficacious but less fit to survive the social environment of western corporate society.

This particular study aims to determine the affective or automatic emotional responses practitioners of project management have to project management artefacts. Simply put, when practitioners engage with the tools and practices (artefacts) of project management – how do these artefacts make them feel?

What you will be asked to do

You will be asked to complete the attached questionnaire, which contains four questions. This task will take no longer than 30 minutes.

The questionnaire is the first of two stages. The second stage takes the form of an interview. The interview will be loosely structured around the answers you give to the questionnaire. Those who participate in stage one (the questionnaire) will not necessarily take part in stage two (the interview).

The questionnaire will be used to identify some of the project management tools and processes you *enjoy* using, or perhaps feel you *have* to use. Not only are we interested to know what these tools and process are, we particularly want to know about the emotions you associate with them. Please be as expansive and unrestrained in your answers to the questionnaire questions as possible.

Finally, you will be asked to email the completed questionnaire.

The basis by which participants will be selected or screened

To participate in this study you need to be:

- An adult (aged 18 years or over)
- Able to complete the questionnaire yourself.
- A project manager or project management practitioner

The expected benefits of the research

This research is expected to contribute to the body of knowledge on the factors that influence the use and popularity of project management practices, tools, processes, and methodologies.

Risks to you

We do not anticipate that there is any risk to you as a result of participating in this research.

Your confidentiality

Your confidentiality is ensured. Any personal data you supply (e.g. via your email submission of the questionnaire) will not be stored with the questionnaire. Your personal data will be stored separately. Consent forms will be separated from completed questionnaires on receipt by the researchers. All written material (i.e. completed questionnaires) will be stored in a locked filing cabinet with access controlled by the researchers, and all electronic data will be stored on The University of Queensland, School of ITEE computer server, which is password protected. Original data will be kept for a minimum of 5 years. Participants will not be identifiable in any publication or report resulting from the research.

Your participation is voluntary

Your participation in this study is completely voluntary. You do not need to answer every question unless you wish to do so. You are free to withdraw from the study at any time.

Questions / further information

If you would like additional information about this particular project and the literature related to it, please contact a member of the research team using the contact details given above.

The ethical conduct of this research

The University of Queensland conducts research in accordance with the *National Statement on Ethical Conduct in Research Involving Humans* <http://www.nhmrc.gov.au/publications/synopses/e72syn.htm>. If you have any concerns or complaints about the ethical conduct of this research project you should contact the Ethics Officer on +61 7 336 53924 or humanethics@research.uq.edu.au.

Feedback to you

It is not possible to provide individual participants with feedback on their own responses to this questionnaire, as all participant responses will be analyzed as a group. However, if you would like to be given a summary of the findings of the research when they are available, please contact a member of the research team using the contact details given above.

Privacy Statement

The conduct of this research involves the collection, access and / or use of your identified personal information. The information collected is confidential and will not be disclosed to third parties without your consent, except to meet government, legal or other regulatory authority requirements. A de-identified copy of this data may be used for other research purposes. However, your anonymity will at all times be safeguarded. For further information consult the University's Privacy Plan at <http://www.uq.edu.au/foi/index.html?page=42772> or telephone University's Freedom of Information Officer +61 7 3365 2571.

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CONSENT FORM

Research Team

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School(s)	School of Information Technology and Electrical Engineering, The University of Queensland
Contact Phone	(07) 3365 2390
Contact Email	jonw@itee.uq.edu.au

By signing below, I confirm that I have read and understood the information sheet and in particular have noted that:

- I understand that my involvement in this research will include the completion of the attached questionnaire and the possible invitation to be asked to be interviewed by the researcher;
- I have had any questions answered to my satisfaction;
- I understand the risks involved;
- I understand that there will be no direct benefit to me from my participation in this research;
- I understand that my participation in this research is voluntary, and that my decision to participate in no way impacts on my grades (if I am a student of The University of Queensland) or my employment (if I am a staff member of The University of Queensland);
- I understand that if I have any additional questions I can contact the research team;
- I understand that I am free to withdraw from participation at any time without comment or penalty;
- I understand that I can contact the Ethics Officer on +61 7 3365 3924 or humanethics@research.uq.edu.au if I have any concerns about the ethical conduct of the project; and
- I agree to participate in the project.

Name
Signature

Date

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QUESTIONNAIRE

INSTRUCTIONS

In each question we would like you to write as expansively and unrestrained as possible. Expand the text boxes as required. We would appreciate your first thoughts to these questions. Do not consider your answers *too* carefully. Your initial or instinctive thoughts are the ones we are after. There are no right or wrong answers.

1. What are some of the project management tools, processes, and practices you *enjoy* using or participating in?

2. How do these make you feel when you are using or participating in them, and why is that?

3. How do you think you would feel if you weren't allowed to use them to manage a project, and why is that?

4. Try to imagine the ultimate project management tool or process – what do you think it would be like to use?

Thank you for completing this questionnaire.

Now, please return it to the following email address.

jonw@itee.uq.edu.au

Appendix: B

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School(s)	School of Information Technology and Electrical Engineering, The University of Queensland
Contact Phone	0431 469 860
Contact Email	jonw@itee.uq.edu.au

Why is the research being conducted?

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This doctoral research has put forward the argument that because the discipline of project management has not subjected many of its popular tools and practices to rigorous evidence based scrutiny many of them remain in use because they have won the 'natural selection' race. That is to say that the popular ones are popular because they have a traditional or fashionable quality about them rather than being effective at delivering projects successfully. Somehow, the iconic tools and practices of project management have successfully competed for our attention against others probably more efficacious but less fit to survive the social environment of western corporate society.

This particular study aims to determine the affective or automatic emotional responses practitioners of project management have to project management artefacts. Simply put, when practitioners engage with the tools and practices (artefacts) of project management – how do these artefacts make them feel?

What you will be asked to do

You will be asked to participate in an interview, preferably to take place in your usual workplace. This interview may take one to one and a half hours.

The interview is the final stage of a two stage process. Stage one was the questionnaire you have completed previously. The interview will be loosely structured around the answers you give to the questionnaire. Those who participate in stage one (the questionnaire) will not necessarily take part in stage two (the interview).

The interview will be used to further identify and explore some of the project management tools and processes you *enjoy* using, or perhaps feel you *have* to use. We are particularly interested to know about the emotions you associate with these tools and processes, and the interviewer (the researcher) will attempt to get you to talk about the emotional experiences you have when you use or participate in them.

Please be as expansive and unrestrained in your answers as possible.

The basis by which participants will be selected or screened

To participate in this study you need to have completed the relevant questionnaire (ref to be inserted here) and be:

- An adult (aged 18years or over)
- Able to be interviewed in your usual work setting.
- A project manager or project management practitioner

The expected benefits of the research

This research is expected to contribute to the body of knowledge on the factors that influence the use and popularity of project management practices, tools, processes, and methodologies.

Risks to you

We do not anticipate that there is any risk to you as a result of participating in this research.

Your confidentiality

Your confidentiality is ensured. Interviews will be recorded (audio and video) and transcribed in full. Audio and video recordings will be destroyed following the transcription process. Any personal data you supply will not be stored with the transcribed data from the interview. Any personal data you supply will be stored separately. Consent forms will be separated from audio/video transcripts of the interview by the researchers. All written material, including transcripts and previously completed questionnaires, will be stored in a locked filing cabinet with access controlled by the researchers, and all electronic data will be stored on The University of Queensland, School of ITEE computer server, which is password protected. Original data (completed questionnaires and interview transcriptions) will be kept for a minimum of 5 years. Participants will not be identifiable in any publication or report resulting from the research.

Your participation is voluntary

Your participation in this study is completely voluntary. You do not need to answer every question put to you unless you wish to do so. You are free to withdraw from the study or interview at any time.

Questions / further information

If you would like additional information about this particular project and the literature related to it, please contact a member of the research team using the contact details given above.

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- I understand the risks involved;
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