Implementing, Managing and Working under Lean: A Qualitative Case Analysis

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Abstract

The aim of this thesis is to explore the broader experiences of workers, in non-manufacturing organisational contexts, of the application of Lean informed by a labour process perspective. In order to achieve the overarching aim, the author investigates how organisations are implementing Lean by utilizing core labour process theory concepts (such as management control, the frontier of control, managed participation, self-identity). This research draws on evidence from four case study organisations, all of whom are atypical in their application of Lean from a traditional labour process perspective. Fifty four interviews are conducted, supported by documental evidence, in order to explore how employees experience Lean Thinking. The findings suggest that there are problems in understanding, communicating and transferring Lean Thinking in the contexts here; and as a consequence the depth and breadth of Lean application in the four cases is very limited. There was a shared view among managers and professionals that the construction of academic freedom, in the case of UK academics, and the difficulties associated with measuring intangible contributions and outputs are significant in limiting expectations that professionals would support Lean approaches. In addition to this, a lack of empathy with the contextual relevance of Lean was demonstrated with the key training programmes. Many of the professionals here fought to maintain frontiers of control, and senior managers and sponsors acknowledged that this was inevitable. This thesis makes an important contribution to understanding some of the context-specific issues related to introducing Lean in non-automotive manufacturing, and shows how Lean travels to such settings as well as how it is received by participants. The research questions the extent to which managers themselves practised Lean, rather than merely espouse Lean, and suggests that in the contexts here managed participation is a feature of implementation.

Keywords Lean Thinking, Lean implementation, Employee Experiences, Labour Process Theory, Human Resource Management

Dedication

This thesis is dedicated to Granny who sadly passed away before I completed the research.

Thank you for all of your love, support and encouragement throughout my life, and for all of the opportunities you gave up to allow me to have. I miss you so much and wish you could have seen this one last milestone, but I know you are up there protecting and guiding me.

I love you Granny

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Publications

The following publication was based on evidence and work from this thesis:

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List of Abbreviations

BPR	Business Process Reengineering
CITs	Continuous Improvement Teams
HE	Higher Education
HMRC	Her Majesties Revenue and Customs
HR	Human Resources
HRM	Human Resource Management
JIT	Just in Time
LP	Lean Production
LPT	Labour Process Theory
LM	Line Manager
LTE	Lean Training Event
MAS	Manufacturing Advisory Service
PDCA	Plan-Do-Check-Act
Pharma	Pharmaceutical
RDA	Regional Development Agency
TQM	Total Quality Management
TPS	Toyota Production System

Chapter One Introduction

1.1 Background and Context

Organisations and Governments alike faced a number of challenges following the worldwide economic recession, which called for a revision of managerial practices to focus on increasing productivity and reducing waste despite low resources (Cunningham & James, 2009; Radnor & Osborne, 2013). In addition to this, increased competition and customer expectations are requiring organisations to gain powerful competitive advantages in the globalised marketplace. The result of this has been significant changes in work organisation where it was suggested that private sector models could replace, or improve, previously inefficient techniques and processes as a means of increasing organisational efficiency (Gains, 2003).

While a number of different tools and methods can be used to increase competitive advantage, Lean principles and methods have been shown to be one of the most effective (Womack et al., 1990; Womack & Jones, 1996; Liker, 1998, 2004) for manufacturing (Deflorin & Scherrer-Rathje, 2012; Ehret & Cooke, 2010; Ferdousi & Ahmed, 2010) and service organisations (Radnor et al., 2006; Hines & Lethbridge, 2008; Barton, 2013; Liker & Morgan, 2006; Radnor & Bucci, 2010). How this is implemented and managed, both in terms of techniques and tools, and as a means of control is widely debated in literature.

Lean production comprises organisation-wide Lean practices (Mann, 2005) and is defined by Womack et al. (1990: 11) as the following:

> Lean production is 'lean' because it uses less of everything compared with mass production-half the human effort in factory, half the manufacturing space, half the investment tools, half the engineering hours to develop a new product in half time. Also, it requires keeping far less than half the needed inventory on site, results in many fewer defects, and produces a greater and ever growing variety of products.

From its origins in the automotive industry, Lean is increasingly seen by its proponents as a solution to problems of efficiency and quality in other industries and sectors. In

recent years attempts have been made to transfer Lean principles and practices to a number of non-production based settings, with indications of mixed consequences and debate over its suitability. Research reveals that the prime driver of change in UK based organisations, both public and private sector, is cost reduction (Worrall & Cooper, 2001; Teeuwen, 2011). For example recent changes to funding in the public sector, occurring against a background of intensifying competition and financial austerity, have resulted in a dual challenge for such sectors of improving quality *and* reducing costs. At the same time, some have argued that organisations are adopting the traits of consumerism and are looking at world class manufacturing strategies in order to help them improve their businesses (Lynch & Baines, 2004; Eagle & Brennan, 2007; Voss et al., 2007; Gruber et al., 2010). As a consequence, non-traditional sectors and industries appear increasingly to be employing quality concepts such as total quality management (TQM), business process reengineering (BPR) and, most recently, Lean.

Evidence indicates that the results of such initiatives have been mixed (see, for example, Koch, 2003; Quinn et al., 2009; O'Mahony & Garavan 2012). Practitioners and scholars appear to be looking to the principles underpinning Lean in an attempt to resolve the economic and organizational pressures within organisations new to Lean ideology (Hines & Lethbridge, 2008; Radnor & Bucci, 2010). Of course, the origins of Lean rest in automotive manufacturing and so there are obvious concerns regarding the transferability of Lean production and management across economic sectors, industries, services and professions. Such concerns inform this thesis, and in acknowledging the debate the author often chooses to use the phrase '*Lean Thinking*' to express the Lean concepts at the heart of the analysis. Womack & Jones (1996) introduced the notion of Lean Thinking to emphasise that Lean is more than systems and practices bound to a single industry, hence its adoption here. They define the concept as "five principles: precisely specify value by specific product, identify the value stream for each product, make value flow without interruptions, let the customer pull value from the producer, and pursue perfection" (p.10). The thought was that by changing from the term 'production' to 'thinking' this would imply relevance to multiple industries, not just manufacturing.

Despite this, evidence indicates that organisations appear to experience trouble when implementing Lean practices (Womack & Jones, 1996). Although research implies that organisations are unlikely to question Lean's efficacy, Baker (2002) reports that less than 10% of UK organisations are successful in their implementation of Lean. The main reasons for this are believed to be a lack of clarification and understanding of the Lean concept (Holweg, 2007) and the purpose of the Lean practices. More specifically, the use of the wrong tool to solve a problem, the use of a single tool to solve all of the problems and use the same set of tools on each problem (Pavnaskar et al., 2003: 3077; Radnor & Osborne, 2013) are acknowledged to be reasons for such difficulties in implementation. Incorrect application of Lean can lead to a reduction in employees' confidence in practising Lean (Marvel & Standridge, 2009). Consequently, the scope and content of Lean should be holistic (Crute et al., 2003) and across the organisation (not just in pockets) (Radnor & Osborne, 2013). Seemingly, there is a need to understand how non-manufacturing organisations, new to Lean, implement it and what they understand by the term given the continued use of the concept in such settings (Radnor & Osborne, 2013).

While a number of academics and practitioners have written on the subject of Lean, there is both still a lack of clarity on what Lean actually is (Holweg, 2007) and how it applies in non-manufacturing settings. Notwithstanding this, Lean is a complex labour process requiring workers across the organisation to perform tasks within confined boundaries, under pressures from senior managers and other stakeholders, in order to demonstrate 'more with less' (Womack et al., 1990). The assumption is that workers involved in Lean activities will be required to go beyond their effort bargain for little reward, often experiencing enhanced direct control over their work, with little or no opportunity to resist.

There are a number of schools of thought associated with the application of Lean. Firstly, there is the school that suggests that Lean has positive effects on organisations, through increased efficiency and effectiveness. Proponents of this wave of Lean, from a managerialist perspective (see, for example, Hammer & Champry, 1993; Womack & Jones, 1996), offer a vision of employees freed from the "mind-numbing stress" (Womack et al., 1990: 102) associated with bureaucracy and mass production. The

rewards, they claim, include employee empowerment, challenge and job satisfaction while managers view Lean as a means to improve operational and organisational performance. This managerial perspective has strong empirical support, with Lean being positively linked to multiple dimensions of operational performance such as productivity and quality (see, for example, Schonberger, 1982; White et al., 1999; Shah & Ward, 2003).

In contrast, there is the research that explores the effects of Lean on the workforce: the school of thought that is critical of Lean because it is just another means of exploiting labour. There is an apparent duality of interpretation on the subject of worker involvement in problem solving and improvement. On the one hand, some authors view such conditions as exploitative (Garrahan & Stewart, 1992; Graham, 1995; Rhinehart et al., 1997) whereas other authors view them as a means of unlocking human potential (Dohse et al., 1985; Graham, 1995; Kenney & Florida, 1993). Inherent tensions in the debate on Lean application indicate more research is needed to understand the worker experience, especially in sectors and industries which are new to Lean Thinking, as expressed earlier.

The existing research conducted from a deterministic perspective, 'Lean and mean', informed by a labour process lens often argues that the use of Lean tools and techniques at a workplace level is integrally linked to attempts to marketise work. Although there are extent studies exploring macro-level modes of control and Lean, this thesis is concerned with micro-level modes of control, struggle and the co-opting of workers in contemporary settings into a system of self-surveillance and self regulation (Sewell & Wilkinson, 1992; Thompson, 2003) for Lean organizational effectiveness. As this thesis will argue, Lean re-shapes the struggles for control and autonomy although there is a need to explore in more depth how and why the concept redefines the 'rules' of engagement and seemingly provides management with the upper hand. This is especially so given that Lean is a form of close, surveillance and self-regulatory control that, it is argued, is difficult if not impossible to resist.

Thirdly, there are authors who write about the transfer and universal application claims of Lean. Arguably, the precise nature of the relationship between Lean and its context

remains somewhat opaque and, essentially, an argument develops concerning a best practice versus a best fit approach to Lean (Cusumano, 1992; Cooney, 2002, Radnor et al., 2006; Radnor & Bucci, 2010). To date there is little evidence of studies exploring how Lean is implemented in environments where activities are often intangible, are highly regulated or do not aim to reduce wasteful activities from processes. Despite some theoretical and empirical progress, scholarly understanding of what Lean actually is and how it contributes to performance in organizational settings outside of manufacturing remains relatively underdeveloped, and there is a need to explore Lean in terms of 'fitness for purpose' especially within sectors new to Lean Thinking (Radnor & Osborne, 2013).

Interestingly, a number of critical studies have been condemned by some on the basis of using organisational contexts where Lean was not 'correctly' implemented (Womack et al., 2005), where the Lean conceptualisation varies considerably among studies and in terms of the practices considered (Parker, 2003; Hasle et al., 2012). Moreover, very few studies consider both the managerial *and* worker perspectives (Adler et al., 1997). Unfortunately, rigorous research especially into organisational contexts that are new to Lean implementation has not occurred, making it difficult to truly understand the relationship between Lean implementation and organisational outcomes (Brännmark & Håkansson, 2012).

The lack of clarity with regards to what Lean is has already been highlighted, and this can be seen in part as a result of the previous points. A large number of articles on Lean concentrate on its taxonomy exploring what is included in Lean, where the boundaries can be drawn and whether it is transferrable. Some consider Lean to be a hazy and ambiguous concept (Dean & Bowen, 1994) which is further confused by the multiple interpretations of what Lean is defined as, and a lack of conceptual clarity (Hines et al., 2004). This viewpoint is strengthened by the fact that the leading authors, James Womack and Dan Jones, change their discourse over time from Lean *production* to Lean *Thinking* and use different terms when discussing the topic in the literature. The difference between these concepts is often not clear and creates further confusion with regards to how it can be applied to non-manufacturing settings. A review of research conducted since the publication of the seminal book *The Machine that Changed the*

World (Womack et al., 1990) shows that the definition and understanding of Lean is changing to the point where it may no longer be recognisable, which is resulting in confusion among scholars and practitioners (Holweg, 2007). This is perhaps not surprising given the wide range of industries and sectors in which managers have tried to apply Lean.

Accordingly, a clearer examination of the experiences of individuals in industries and sectors new to its uptake is one of the most pressing research tasks – especially when considering that it is claimed the 'soft' facets, linked to people and culture, are often the cause of 'failed' Lean initiatives (Stewart et al., 2009; Emiliani, 2011; Radnor & Osborne, 2013). Existing research appears to focus on assessing and exploring employee experiences in either one case study, or uses a comparative approach, and there is still little evidence of individual experiences of highly skilled employees or non-traditional organisational contexts.

Evidence suggests that HR practices, such as training, can have a positive impact on the performance of professional industries through, for example, increased efficiency and effectiveness and higher service quality (Ichniowski et al., 1997; MacDuffie, 1995; Pil & MacDuffie, 1996; Lorenz & Valeyre, 2005). The author was particularly interested in exploring training activity, as the skills debate is often raised within the work organisation literature with evidence indicating Lean results in deskilling and dehumanizing (Carter et al., 2011) work. Additionally, Grugulis (2007) argues that knowledge workers, often those with a stronger sense of self-identity, are crucial to the functioning of their organisations and therefore may experience "better treatment" (p.75). Evidence would indicate that professionals choose to distance themselves from ideologies, such as Lean, when they are perceived as a threat to that individuals' sense of self-identity (Knights & Willmott, 1999). The introduction of control-orientated management programmes has been seen to result in resistance by such workers, as illustrated by Ezzamel et al. (2004), Worthington & Hodgson (2005) and McGivern & Ferlie (2007) for example. Thus, there is an opportunity to further contribute to this debate and to explore how Lean is received by professionals.

The above discussion indicates that many contradictions and deficiencies can be identified in the existing Lean literature. Consultants, academics and specialists from an operations and quality management background dominate the existing literature on Lean, yet these studies are lacking in empirical validation of how workers within the process feel. While there is extant evidence available exploring worker perspectives of Lean implementation, the research tends to be characterised by (1) either quantitative or mixed methods approach to data collection (2) a focus on one particular case study or sector (3) low skilled workers or (4) comparison between sectors. This thesis contributes to that research by focusing on four organisations, all of whom are new to Lean implementation and are characterised by a mix of both highly skilled professionals and low skilled administrative and support staff, in a non-comparative way.

It must be remembered that, as a result of a lack of theory on Lean Thinking, coupled with problems of definition, it is apparent that the present study contributes to a research field that is still in its infancy. Thus, this thesis presents findings from a multi-informant study conducted across four UK organisations all of which are atypical in their application of Lean from a labour process perspective. These organisations are characterised by a number of intangible processes. Of the four case studies used here two are Higher Education institutions, one is a Regional Development Agency and one is a pharmaceutical organisation.

All cases are experiencing transition as a result of recent changes within their respective sectors: for three of the organisations this was led by financial and political changes, and the other organisation was facing pressure from regulatory requirements and global competition. This is highlighted in the work organisation literature as both the marketization of work, and promotion of managerialism within the workplace. Indeed, Reay & Hinings (2005, 2009) describe how professionalism and managerialism have clashed at institutional level resulting in the over-use of generic methods of management to improve efficiency and effectiveness. Each of the cases here have, historically, not been required to implement changes on the scale that they have in recent years.

By focusing on employees' perceptions and experiences of Lean Thinking, the author contributes to current debates and calls to go beyond simple descriptions of how organisations are implementing Lean Thinking, that is a characteristic of operations management accounts, and provides more depth to orthodox assessments of Lean Thinking (Bowen & Ostroff, 2004; Kehoe & Wright, 2013). Studies to date that have paid attention to employee perceptions tend to stem from manufacturing environments and generally focus on quality, efficiency, effectiveness, work intensification and process redesign (Berggren, 1993; Carter et al., 2011, 2012a; Garrahan & Stewart, 1992; Graham, 1995; Rinehart et al., 1997; Stewart et al., 2009). This thesis challenges the findings of research on Lean conducted from a traditional LPT perspective, based on the evidence from the four cases here and, thus, contributes to this growing field of study.

The findings here indicate that the implementation of Lean in non-manufacturing organisational contexts, coupled with a legitimate role for professional workers, is potentially problematic. Weak conceptualisation, the encouragement of controlled or managed participation, communication, patchy application, the issues that professionals and their perceived self-identity bring to Lean implementation and the exclusion of human resource people (and processes) are all highlighted in the evidence presented. While this thesis concludes that it is perhaps too early to dismiss Lean Thinking as unsuitable for use in such organisational settings, there are serious and, perhaps, unique factors that require further research attention both in the UK and elsewhere in the world.

1.2 Significance of the Research

The previous section set out the context for this study, in which the author noted that there are apparent gaps in existing research which provide an opportunity to conduct further exploration. Specifically, existing studies predominantly focus on one case organisation or context and there is a need to move away from this design in order to understand the experiences of both management and workers, including high skilled and low skilled workers. All of the existing literature appears to focus on identifying case studies which demonstrate some form of service i.e. transactional and tangible.

This indicates both a gap, as well as an opportunity to understand how Lean applies outside those contexts.

The predominant theoretical debate on Lean broadly derives from two contradictory positions. The first position has been discussed in the section above: Lean is a means to improve organisational efficiency. However, of interest to this thesis is the opposing position that Lean is a means to control the workforce and results in the intensification of work and deskilling. This is born out of the historical debate within the work organisation field, and uses a labour process lens to explore the employment relationship and power relations within organisations. Evidence indicates that, despite the rhetoric of worker empowerment and involvement, Lean uses workers' knowledge against their own interests (Stewart et al., 2009). Moreover, while Lean purports to increase worker skills, there are a number of questions raised as to what implementation actually means for workers. The topic of 'skills' is an important one: the direction of skill is organically linked to the ways in which an employer seeks to exercise control over their workforce, thus this control is arguably fundamental to the nature of Lean (Carter et al., 2012a) and as such requires investigation.

Additionally, several studies have highlighted the stressful effects that Lean has on work-life, which has led to the conclusion that Lean is 'mean' to employees (see, for example, Babson, 1993; Adler et al., 1997; Green, 2002). A number of authors have indicated that Lean is concerned with greater power and control over workers (Wilkinson & Oliver, 1989; Sewell & Wilkinson, 1992; Delbridge et al., 1992; Delbridge 1995; 1998) as management regain influence over the frontier of control. Such researchers commonly use an ethnographic research design to study workplace relations: Stewart & Garrahan (1992) base their research on findings from former employees at Nissan Motor Manufacturing (UK), and Stewart et al. (2009) examine worker responses to Lean at Vauxhall and Rover. The former research concludes that workers have experienced changing patterns of exploitation in the car industry. Their conclusions are thoughtful:

> …at the heart of lean lies the irreconcilable contraction between the rhetoric of success, security and a range of enriching employment experiences, and the reality for many millions of workers, of exclusion, insecurity and deteriorating

> employment experience …many workers whose work and lives have been devastated by the ravages of lean production.
>
> Stewart et al., 2009, p. xi

Critics of Lean are essentially concerned with the displacement of cost and risk onto labour and suppliers. Academic researchers have explored the negative realities of Lean and identified the following: management by fear (Harrison, 1997), management by stress (Parker & Slaughter, 1995) and labour intensification (Carter et al., 2011, 2012a,b). In addition to this, there is an ever growing body of empirical and conceptual evidence to indicate that Lean Thinking can be detrimental to employees' mental and physical well-being (Jackson & Mullarkey, 2000; Anderson-Connolly et al., 2002; Stewart et al., 2010; Carter et al., 2011). These systems are characterised by an uncomfortable work environment and bullying (see, for example, Landsbergis et al., 1999; Lewchuck et al., 2001; de Treville & Antonakis, 2006; Stewart et al.). Moreover, the fragile sense of self-identification associated with professional workers (Worthington & Hodgson, 2005; Knights & Willmott, 2007; Knights & Clarke, 2014) can result in a different type of resistance, driven by a fear of a loss of that identity.

While several attempts have been made to explore worker experiences of Lean Thinking, the majority is still conducted within production-like organization settings. Even for cases based in the public sector (such as Carter et al., 2011, 2012a, 2013) they are characterised by manufacturing-like processes and transactions. Of these recent studies there appears to be a focus on a small number of organisations which are experiencing large scale Lean implementations, such as Her Majesties Revenue and Customs (HMRC), Department of Work and Pension, healthcare and local government (within the public sector) or call centres and retail (within the private sector).

However, a problem with this kind of research and application is that it focuses on larger organizations which, arguably, mimic the production setting. HMRC, for example, uses large scale processing and one can see how standardization could work within this setting. To date there is little in-depth research on industries which have inconsistent ways of working; specifically professional industries and sectors where standardization and waste minimisation (Womack & Jones, 2006) are likely not the priority.

The findings within HMRC (Carter et al., 2011) indicated that Lean could well be a form of Taylorism and work control, characterised by direct command and control. The authors state that 95% of employees felt 'very' or 'quite' pressurised post-Lean, with the statistical relationship between work intensity, time at work station, coming to work ill and frequency of symptoms (Carter et al., 2013) implying this is an important area to research as it could well lead to potential issues for HRM in the future. As many organisations have experienced downsizing, evidence indicates that management are increasing the amount of work expected by their surviving staff (Wolfe, 2004). Such cost cutting strategies can be translated into an unprecedented intensification of work (Mather et al., 2005) with larger volumes of work being completed with the same, or more probably, smaller workforces.

The research to date has tended to focus on *what* is included in Lean (and whether it can be transferred), rather than *how* it is implemented and received by employees. Additionally, studies have mostly been restricted to limited comparisons of public versus private implementation, whereas this thesis does not intend to draw any comparisons between sectors. Rather, it aims to research implementation and experiences of Lean in a number of different organizations which have previously not been subject to Lean intervention. Despite extensive research, no single study exists which uses a combination of non-manufacturing organizations that have previously not been subject to empirical research.

What is not yet clear is the impact of Lean on workers in professional industries which are highly regulated, dependent on funding and offer bespoke services to end-users. As Radnor & Osborne (2013) recently concluded, this indicates a need to understand the implementation of Lean in order to explore whether it is a 'failed theory' in non-automotive settings. These evident gaps in existing research served to inform the aim and subsequent objectives of this research.

1.3 Research Aim, Objectives and Contribution to Knowledge

A number of questions have been raised in relation to the transferability of Lean Thinking outside automotive manufacturing, specifically relating to the experiences of

workers involved in Lean implementation. Informed by the gaps in existing literature, the aim of this thesis is to explore the broader experiences of workers in non-manufacturing organisational contexts of the application of Lean. In order to achieve the overarching aim, and using a labour process lens to inform and evaluate it, the following research objectives have been set:

- To explore current thinking on the conceptualisation and utility of Lean, with particular attention paid to the critiques developed in the labour process tradition;
- To explore what Lean initiatives are being applied in non-automotive manufacturing contexts;
- To investigate how organisations are implementing Lean by utilizing core labour process theory concepts (such as management control, the frontier of control, managed participation, self-identity);
- To explore employee experiences of Lean Thinking by establishing a detailed understanding of the events of people involved in implementation.

By answering these questions, the thesis fills a gap in the academic literature on new areas of Lean application, through a case study approach, in order to examine how Lean is experienced. This thesis contributes to the debate on how Lean travels to these environments, and how it is received by those involved in activities. The author has identified four specific contributions which this thesis makes: the first contribution is that this study sheds light on an area that is widely debated and shows that Lean can be applied to organisations who do not display the characteristics of manufacturing or traditional service.

Secondly, this study shows that there is a lack of clarity and understanding in terms of what Lean is within specific contexts, highlighting the importance of self-identity and experiences of professionals. Thirdly, despite appearing very obvious, the concept of Lean is defined very differently by the people who have been involved - importantly the study here gave respondents the opportunity to reflect on their experiences through in-depth exploration. Fourthly, there is an indication that not only is Lean in the contexts

researched here a new form of control, but a form that relies for its success on managed participation (combining the ideas of both direct control, and engagement).

Finally, the sole use of qualitative data gives an important depth to the study which demonstrates to the research community that in-depth exploration of worker experiences is important. That is not to suggest that other forms of data are not valued, but rather this methodology adds diversity to existing research.

1.4 Theoretical Perspective: Labour Process Theory

Identifying a theoretical perspective in which to explore and analyse research is important, and a number of different perspectives could have been taken for this study to help conceptualise and understand the implementation of Lean Thinking. On the one hand, the author could have taken an HRM perspective to understand how Lean is implemented and managed in organisations. This approach would involve exploring the perspectives of management with regards to the strategies, tactics, policies and practices associated with Lean. A number of studies are informed by this perspective, for example Shah & Ward (2003), de Menezes et al. (2010) and Furlan et al. (2011). This perspective would have been useful to use if the focus would have been on exploring the reasons why organisations implement performance improvements such as Lean, the role of the HR function in implementation, how Lean fits in to strategy and what value employees can add to the process.

On the other hand, an operations management perspective could have been taken and is most commonly associated with Lean research to date. The large majority of studies tend to be informed by this perspective, which would involve identifying the different tools and techniques that organisations use to implement Lean, and conducting some form of measurement to determine success. This perspective would have been useful if the focus of this thesis would have been on trying to determine if Lean has affected business performance, and what Lean methods are being used. Typically research informed by this perspective identifies a list of criteria, or variables, which it investigates whether organisations are using and comes to some sort of conclusion

based on this. A number of key studies exist using this lens, such as Radnor et al. (2006), Radnor & Bucci (2010) and Radnor (2010).

The theoretical position that the author of this thesis has chosen to use is that of labour process theory (LPT). Although it is fair to say that Lean has always been studied from a LPT perspective, it is part of a growing body of research which is currently emerging, especially in terms of contexts which are new to performance improvement methodologies. This lens presents researchers with an opportunity to explore worker perceptions and experiences of Lean, and allows a detailed account to be established in order to explore the issue of work organisation under Lean more broadly. Existing literature has already highlighted the importance of exploring Lean from this perspective, and the conclusions of those studies forms an important rationale for adopting LPT here. Moreover, it becomes clear in the Literature Review that there is a need to revisit some of the conclusions drawn from early research from a LPT lens in order to consider workers in contemporary settings.

A review of the research conducted from a LPT lens indicates a number of 'waves', although these waves appear to differ slightly depending on which author is writing, and fall into either mainstream or critical/LPT perspectives on Lean. Broadly, most debates appear as a reaction to Braveman's seminal text*: Labour and Monopoly Capital*. Braveman (1974) built on the earlier writings of Marx, with the aim to critically analyse the degrading effects of technology and scientific management on the nature of work. He concluded that the drive for efficient production is, simultaneously, a drive by management to control workers. Such managerial control is realised through monopolising judgement, knowledge and the conceptual aspects of work. Concurrently, he indicated that this is achieved by excluding workers from ownership of their knowledge and skill acquisition.

This was followed by further 'waves', the first of which can be seen from the works of Edwards, Burawoy and Freidman who developed 'typologies' of regimes in the workplace around the 'control-resistance-consent' debates. Another 'wave' began to emerge when research started to be characterised by studies into 'alternative paradigms' of work: these 'new forms' included 'flexible specialisation' (Wickens, 1986)

and Lean production (Womack et al., 1990), many of which emerged from Japan and debated how to organise work outside the country of conception.

Termed 'paradigm wars' by Thompson (1990), these appear to fit in with the cycles of controls found in the earlier waves of LPT research. For example, Friedman (1977) talks of 'responsible autonomy' suggesting employees can be subject to aspects of power and control, while simultaneously are left in charge of some aspects of their work. At the time, LPT argued that organisations sat along a line which was illustrated by direct control at one end (preferred by management) and responsible autonomy at the other end (preferred by workers). Lean production was seen as an example of normative control: control through surveillance but in the form of self-surveillance (Sewell & Wilkinson, 1992). The introduction of Lean not only signified a paradigm shift, but also indicated that the politics of production were an obstacle to the regeneration of the employment relationship (typically characterised by adversarial employee relations, and a focus on terms and conditions). Studies from a LPT perspective have documented this struggle.

A number of researchers have published findings of studies that explore Lean from a LPT perspective: for example, Garrahan & Stewart (1992) contribute to the LPT-Lean debate by producing some critical conclusions with regards to how workers at Nissan Motor Manufacturing (UK) experience *The Nissan Way*, their version of Lean. Overall their evidence, based on an in-depth qualitative ethnographic study using micro level analysis, indicates that control is exerted over employees in order to get more out of them, and that often workers had little choice other than to consent to this exploitation. Further authors within manufacturing have also raised issues related to resistance and agency within Lean settings: for example, the findings of Graham (1995) and Rhinehart et al.'s (1998) studies conclude that life on the production line under Lean was not as positive for shop floor workers as earlier proponents had identified.

More recently, with the introduction of Lean Thinking to new sectors, a number of researchers have also used a LPT lens to explore and analyse the human aspect of Lean: for example the NHS (Waring & Bishop, 2010), public services (Carter et al., 2011) and construction (Green, 2002). These studies, among others, have provided an insight into

how Lean is implemented from the point of view of the very individuals whose work organisation has been subject to change. Lean has always faced tensions between the bureaucracy of organisations and the ideals of performance improvement; however the extension of Lean Thinking to non-production industries and sectors has only added to these tensions and highlighted the role of the worker within the process (Grugulis, 2007) with 'human subjectivity' emerging as a key area of debate. For example, Worthington & Hodgson (2005) raise issues relating to certain types of workers and the situational power they have which impacts their ability to resist the control imperative of management ideologies, thus firmly placing issues earlier identified by Thompson regarding resistance and agency back on the research agenda by highlighting the themes of subjectivity and self-identity. Such debates have influenced the author and naturally led to the use of LPT which is an ideal analytical lens for examining the lived-experience of working in a (non-manufacturing) Lean organizational setting, thus achieving the aim of this thesis.

1.5 Structure of the Thesis

Chapter Two reviews the literature related to the main concepts being addressed in this research. This chapter is roughly divided into four broad themes, the first of which deals with the existing literature on the history of work organisation including a discussion on Taylorism and new forms of work organisation. Lean was seen as one of those 'new forms', and is then conceptualised and discussed in the next section. A critical review of *The Machine that Changed the World* is presented, before exploring working under Lean. This section is important for the aims of this thesis, and covers core LPT concepts such as control, frontiers of control, skills, resistance and subjectivity along with mainstream discussion of leadership and management. Finally the implementation of Lean beyond manufacturing, and the issues which hinder its the success, are then presented and elaborated on. Throughout key questions and issues are raised which help inform this thesis.

Chapter Three describes the empirical work. In particular there is an overview of the theoretical perspective that this thesis takes, and the design employed in order to investigate the research aim and objectives. The chapter describes the design and

development of the research strategy where qualitative case studies were used, along with primary and secondary data collection. The chapter also discusses the analysis technique used in order to interpret the findings.

Chapter Four presents the findings with regards to what approach each of the case organisations was using. This chapter presents the evidence from both primary and secondary data on how Lean Thinking and activities are implemented, managed and led. The chapter concludes by indicating that the approach to Lean appears to be somewhat dictated by the approach the organisations have towards Lean training.

Chapter Five expands on some of the findings in the previous chapter and indicates that the experiences of workers in the cases, and the pressures these organisations face, are different to what automotive manufacturing organisations face. While it seems that some of the cases are implementing a version of Lean Thinking, generally very few new ways of working have been experienced by respondents. Perhaps this is due to what appears to be a fragmented, piecemeal approach being used by the cases.

Chapter Six interprets the data from the former two chapters and discusses it in relation to the key literature explored in Chapter Two. Specifically this chapter is split into two, which help to provide answers for the objective: the first part discusses Lean as a concept and identifies what type of Lean the case organisations are implementing, and second part discusses employee experiences of Lean.

Chapter Seven concludes the research and refers to the earlier aim and objectives in order to reflect and evaluate on the broader experiences of workers in organisations that are atypical in their application of Lean from a labour process perspective.

Chapter Two. Literature Review: An Exploration of Key Theoretical Constructs

2.1 Introduction

This chapter examines the literature relating to changes in work organization, leading up to an exploration of the broader experiences of workers in organisations that are not traditional automotive manufacturing. Following Chapter One, which outlined in detail the overall aims of this thesis, this chapter is structured around four main themes: the history of work organisation, the origins and conceptualisation of Lean, worker experiences of Lean and how it applies beyond manufacturing. Of particular interest is the workers' lived-experience of Lean, and in order to demonstrate what it is like to work in a Lean environment a wider body of literature within organization studies, the sociology of work and in particular labour process analysis (Thompson, 1989) will be examined. The reason for this is that the literature on Lean production, it will be argued, is at times ambiguous, lacking in clarity and is sometimes applied inconsistently particularly with regard to its implementation in non-manufacturing industries.

Indeed, this is an under-researched area of study with regard to Lean production, especially in public services. In order to establish a greater understanding of the nature of Lean Thinking, literature on both the wider topics of Lean and labour is examined. This chapter therefore offers an analytical overview of Lean production and its evolution, from its inception in the 1990's (Womack et al., 1990) through to the current use of the term 'Lean Thinking'. In order to do this the chapter is structured around three main themes: the history or work organisation, the origins and conceptualisation of Lean production, Lean as a system of control, and Lean beyond manufacturing.

The first section of this chapter (*2.2 History of Work Organisation*) presents the history of work organisation, the three key areas that form the basis of this analysis are, first, the historic development within capitalism that led to mass production and 'Fordism'; secondly the impact of mass production and the emergence of new paradigms of work; and thirdly the debate around varieties of capitalism. It is important to deal with these issues before examining Lean working.

As new forms of work organisation were introduced, largely as a result of what some refer to as the 'Japanese miracle', the conditions under which control was exercised in organisations also changed. The introduction of Lean production, and later Lean Thinking, changed that way that employees were seen to resist in organisations. The second section (*2.3 Lean Production: Origins and Conceptualisation*) provides insight into why it is difficult to define precisely what the term 'Lean' means in organizations. This is explained by reviewing some of the key literature and by providing a critical review of Womack et al.'s (1990) seminal text, *The Machine that Changed the World*. This is followed by a discussion of the transition from Lean production to Lean Thinking. This section concludes with a critique of the Lean concept.

The third section (*2.4 Working under Lean*) explores how Lean is implemented, specifically focusing on Lean as a system of control. Chapter One demonstrated that the primary theoretical frame of reference for this thesis is labour process theory (LPT). This section of the Literature Review discusses LPT and Lean by focusing on the themes of management control, the frontier of control, managed participation, self-identity alongside the debates over whether Lean is a form of multi-skilling through training or another form of control, surveillance and subjugation that leads to disempowerment and deskilling. One particular aspect which is of interest to this thesis is self-identity and subjectivity as a form of resistance for particular groups of workers.

The issues raised in the previous section lead into a clear discussion on whether Lean is universally transferrable. The final section (*2.5 Lean as Universally Applicable*) explores the proposition put forward by Womack et al. (1990) that Lean is transferable to any industry or context, and reviews some of the extensive empirical studies, highlighting some of the difficulties in transferring Lean Thinking to non-production organisational contexts. This section draws on examples, both public and private sector, to illustrate the differences between what is considered 'Real Lean' and 'Fake Lean'. Finally the role that human resource management (HRM) has in terms of integration and implementation is explored.

2.2 History of Work Organisation

The Introduction chapter briefly discussed the views of several writers who describe Lean as a means of exploiting and controlling workers (Berggren, 1992; Delbridge, 1995b; Rhinehart et al., 1997; Delbridge, 1998; Landsbergis et al., 1999). In order to understand this debate and perspective it is important to first examine the history of mainstream perspective within the study of work organisation and labour process analysis in particular.

This section begins with the development of capitalism and its impact on work organisation, presenting the Marxist (1972) informed view of work organization; that is, work as a source of exploitation and how the extraction of surplus value from the labour process invariably leads to work intensification. The key factors in the labour process are also discussed before the impact of mass production is explored. In this section, 'Fordism' and Scientific Management are considered. This point in the discussion picks up on Braverman's (1974) deskilling thesis, which of course not all academics subscribe to.

New post-Globalization paradigms of work organisation are then discussed, optimistic and critical interpretations of the concept of Lean are examined. Finally this section ends with a discussion on the varieties of capitalism, which is an important point for this thesis as the basic nature of capitalism remains rooted in systems of workforce control and what arguably appear to be paradigm changes (such as the introduction of Lean) may be more myth than reality.

2.2.1 The Development of Capitalism and its Impact on Work Organisation

LPT is concerned with how politics and culture shape the organisation of work, and as such can be considered alongside literature on the political economy (Vidal & Hauptmier, 2014). Smith (2015) discusses how labour processes are evident in all political economies and modes of production, although different modes inevitably create different labour processes, and this is discussed at length by a number of key

authors[1]. The relevance of the literature on political economy for this thesis is that it provides an understanding of the relationship between managerial strategy and its impact on work organisation, and how such strategies can be implemented within the context of deep rooted workplace politics and culture. Vidal & Hauptmier (2014: 2), for example, contend that "the struggles between managers and workers over the effort – and how to interpret and respond to competitive (and institutional) pressures in order to survive and make a profit – feed back into the political economy". As managers must negotiate outcomes with workers within the politics of production, this often generates a degree of variation within an organisation.

In order to better understand these struggles, it is important to explore the internal dynamics of organisations, as well as how managers and workers react to the political economy and its associated pressures. Of particular interest is what some authors (such as Greer & Hauptmier, 2012) refer to as the ways in which "actors within organisations may deviate from institutional prescriptions and reconfigure them" (Vidal & Hauptmier, 2014: 18). This point is relevant to the key research aim of this thesis, as it indicates that work systems that are characterised by power, control and authority can, in fact, be resisted through redesign as opposed to traditional resistance. The implication is that some employees may [covertly] resist by organising their work in a different way, despite institutional pressures.

An appreciation of the political economy of work[2] allows the impact of changes within an organisation to be framed within its wider context in the sense that 'political

[1] Braveman's 1974 study linked the labour process to both the political economy of work & the study of class. More widely, both LPT literature and political economy literature features micro level models of production and employment relation systems. Burawoy's (1985) critique of social relations *in production* as well as the social relations *of production* is a case in point.

[2] Walmsley & Zald (1973) argue that the term 'politics' refers to the legitimacy of power and its distribution, the systems and sub-systems at different levels of society and the means of task accomplishment. 'Economy' refers to how the division of labour is organised and how the tasks needed to achieve this organisation are allocated, the means in which to maximise productivity, and the factors that affect the cost of production or service delivery or output. Caporaso & Levine define 'political economy' as the application of "economic reasoning to political processes (1992: 128), whereby this relationship is not just at national or macro level, but also at other levels of analysis. For example, Smith (1986:109) argues that in considering the division of labour, a central theme in the organization of work, 'division' is best understood "by considering in what manner it operates in some particular manufactures". In challenging earlier concepts of the 'political economy', Marx (1973) argued that the political and legal structure of society is based on its economic structure, thus, it can be suggested that the economy and organisation of society are inextricably bound at all levels (i.e. state, sector and the workplace).

economy' refers to the interrelationship between the "structure of rule" (Wamsley & Zald, 1973: 64) and the system for producing goods and services. In addition, it can refer to the state-economy relationship in order to produce a competitive marketplace. Since the 19th Century capitalism, along with the expansion of a business class able to exploit the wealth of society, has been the dominant world order (Marx, 1976). On the one hand this can be viewed as a 'cause for improvement' (Smith, 1986), or a system that transformed 'mankind into a horde of ravenous beasts' (Engels, 2000). It is argued by Harvey (1989) that the political economy of work cannot be separated from an analysis of the development of capitalism.

Fundamental to this argument is the way in which economics and politics at all levels of analysis are linked by the need to generate wealth. Becker (2009) points out that not all authors hold the viewpoint that capitalism is rooted in the control or exploitation of labour. However, this link is a key factor in shaping the political economy of work at all levels of analysis. Despite debate that there is increasing convergence between national economies (Wolf, 2005) there remains significant divergence in these economies with regards to their interrelationships with their markets, forms of work organization and collective institutions (Crouch & Streeck, 1997). Even where convergence exists, it arguably occurs unevenly. Dicken (2011) points out that there are degrees of unevenness at national, sector and organizational levels, and is important in helping to understand why particular changes have occurred.

Thus, a discussion on 'varieties of capitalism' (Hall & Soskice, 2001) allows a closer examination of the productive model approach (Boyer & Freyssenet, 2002) and the way that this conceptual framework links mirco-levels of analysis, will allow later discussion on Lean to be located within a specific context. The origins of modern capitalism are rooted in the industrial revolution, and are epitomised by a substitution of human labour with mechanical power, the replacement of human power with forms of inanimate power, and the improvement in the supply of raw material. It is argued by Coates (2000) that the predominant model of capitalism has become the neo-liberal model, based on the assumption that economic growth is created by the freeing of market forces. However, the author also notes that the development of capitalism has been somewhat uneven within and across national boundaries.

The extent to which an economy can exploit the "skill, dexterity and judgement" of the workforce is at the heart of the argument presented by Smith (1986: 109). This is in terms of using the ideas of the division of labour as the primary means of improving the productivity power of the labour force. The division of labour was grounded, first, on reducing employees' work to the performance of single (and thereby simple) tasks as a means of increasing output; secondly on the advantages gained from locating different tasks in sufficient proximity to each other to minimise the loss of production time; and thirdly, by the appropriate and efficient use of machinery in the performance of work tasks. All of which afford management greater levels of control over both the social and technical aspects of production. The introduction of machinery was seen to be attributable to the initiative of workers themselves as a response to the requirement to resolve problems in the productive or manufacturing process.

The exploitation of the division of labour was, however, also dependent on the extent of the market and availability of capital stock. Although the evidence upon which Smith (1986) drew was not without its qualifications and exceptions (Hutchison, 1976), the analysis in *The Wealth of Nations* was based on comparing the "civilised and thriving nations" (Smith, 1986: 105) with their poorer counterparts. While it could be argued that the criticisms presented by Smith somewhat ignored the inherent economic advantages that the system provided and that the primacy of the division of labour was overestimated (Lazonick, 1991), modern political economy models have often relied on differentiating flourishing economies from their less successful counterparts.

However, Marx (1973) argued that the development of capitalism was underpinned through the relations of production whereby the material productive forces of society conflict with the existing societal relations. Under capitalism, the relations of production and the system of work organization are inextricably bound to an economic-political system based on capital's appropriation and exploitation of labour. This exploitation is manifested through the labour process.

Marx (1976) defined the elements of the labour process as the worker's personal activity (i.e. the work itself), the subjects of that work and the instruments of that work. Under capitalism, the labour process is referred to firstly as the way that all work

undertaken is performed under the control of capital, and secondly the output of that work belongs not to the worker who creates the product, but to the capitalist who has purchased the worker's labour power. The key factors in the labour process are both 'objective' and 'subjective'. The means of production (the 'objective' factor) are the artefacts or material by which the worker engages in the labour process. Labour power (the 'subjective' factor) is the aggregate of the mental and physical capabilities exercised by the worker in his or her work. This labour process is based on the argument of transforming as much labour as possible into surplus value and employing as little labour as possible relative to invested capital (Marx, 1972) leading inevitably to work intensification.

Those authors who write within the Marxist tradition offer caution against neglecting the elements of continuity that are common throughout the history of industrial capitalism[3] to the present day (Hyman, 1991; Pollert, 1991). It is important to point out that although management control and exploit workers, they do not always have it their own way. This is an important issue for this thesis, as the assumption presented by critics of Lean (discussed in *2.3.4 Critiques of Lean*) is that management does just this: control and exploit workers who are unable to resist. One of the objectives of this thesis is to investigate how organisations are implementing Lean, therefore the ways in which management exercise control and power are important to understand in order to frame this research.

2.2.2 The Emergence of Mass Production

Central to much of the debate around the development of capitalism and its impact on the political economy of work is the development of systems of mass production. Mass production signified a form of 'direct control' and within the context of the automotive industry, this concept cannot be underestimated. Friedman (1977) proposed that direct (technical) control aimed to control workers by Tayloristic methods, such as those used under mass production. On one level, Womack et al. (1990) argue that the early twentieth century witnessed a change as production moved from craft production

[3] Variations in different political-economic systems are explained by reference to the conditions under which the workforce are engaged in systems of exchange and production (Engels, 2000) that is itself determined by the historical stage of capitalist development of each society. What underpins the organization of work remains unchanged. However, alternative streams of thought highlight the changing nature of capitalism and the consequent impact on work organization.

towards mass production. As a result, employees' responsibilities and autonomy were gradually reduced, with workers becoming increasingly controlled. The authors also argue that craft production was suited to the manufacture of custom-made goods for a limited market. With the rise of a market demanding the production of affordable goods, craft production was no longer a viable economic model as it relied on highly skilled craftspeople working in decentralised factory units.

Womack et al. (1990) further argue that the Ford Motor Company were the pioneers in using mass production, and who established the foundations for a new economic model based on high volume production for a mass market. Ford's ability to use interchangeable parts and to standardise the work processes to their most basic level were the key to the success of mass production. They enhanced control over their capacity to make products in volume by (directly) controlling the production process through the systematisation of work and the use of technology. The introduction of this form of work (i.e. the mechanised production assembly line) increased pace of work (Hounshell, 1984) and can be seen as one of the first examples at the time of 'technical control': popularly referred to as 'Fordism'.

Despite the contention that these changes created a paradigm shift in the political economy of work, the move towards mass production was arguably a *reflection* of a particular phase of capitalist development rather than a *catalyst*. Murray (1988) describes 'Fordism' in terms of four features: (1) standardisation of products, (2) the capacity of identical tasks to be performed on purpose build machinery, (3) the capacity of the remaining tasks to be broken into constituent parts and (4) redesigning and the creation of assembly line production. 'Fordism' can, however, be used as an term not for a set of techniques for systematising work exemplified through the efforts of one influential company in one industrial sector, but a form of organizational infrastructure located within the political economy of work in a specific period within the development of capitalism (Gramsci, 1971).

Central to Fordism is the control of the labour process within the context of a particular historical and economic system (Harvey, 1989). The Fordist system sat comfortably with the populist and democratic nature of society within the USA in the early twentieth

century. The compromise between the workforce and management over higher wages, in return for a system of work based on heightened management control of the labour process, supported a structure of society based on economic individualism (Gramsci, 1971). Its viability as a political-economic system, built on high wages and management control, was manifested through both coercion and persuasion.

Gramsci (1971) discussed that whilst the mechanisation inherent within Fordist systems of manufacturing were invariably built on producing items in *quantity* rather than in *quality*, 'Fordism' created a dichotomy between a cohort of permanently higher-waged workers with specific skills and a cohort of casual workers denied access to these benefits. However 'Fordist' [direct] control methods were not the dominant organizational form within national borders, or within automotive manufacturing. For example, Williams et al. (1992) describe how even the exemplars of Fordist production were subject to variation and fluctuation as a means of controlling the labour process in relation to direct competition. The introduction of 'Fordism' and its technical controls (Edwards, 1979: 112-113), used primarily for the purpose of controlling the duration as well as the pace of work, can be seen by some as a revolution in operations management (Bartezzaghi, 1999) and a paradigm shift. However, whilst 'Fordism' might link a particular form of work organization structure to a specific form of worker-management compromise, viewing the development of modern capitalism solely through the lens of 'Fordism' is not without its problems.

The early part of the twentieth century saw an increased interest among employers on how they might manage the workforce. As already discussed, 'Fordism' was located in a particular historical period and in a specific geographical location. Boyer & Freyssenet (2002) highlight the risk of assuming that 'Fordism' was a universal approach to work organization. The authors point out that while Ford was concerned with large scale manufacturing enterprises Taylor (1911) was concerned with managing the workforce in small to medium enterprises. 'Fordism' is indicative of a productive system that understood the need to exploit the mass market (Harvey, 1989) and created a more sophisticated means of labour control through exploitation of the assembly line (Littler, 1982; Braverman, 1974). Pruijt (1997) argues that the Taylor system was primarily concerned with issues around *direct control of the workforce* in contrast to Fordist

approaches that related to the way that the production line was a *means of workforce control*.

'Scientific management' is a concept developed by Taylor (1911: 15), whose system encompassed four principles. Firstly, was the notion that it was possible to develop a 'science of management' that could be used for every element of any job. Secondly, Taylor believed that managers alone must select, train and teach their workforce using these scientific methods believing that workers were unable to determine the most efficient way to undertake a job of work. Thirdly, there was a need for co-operation between management and workforce to ensure a rigorous application of the principles of scientific management. Finally, Taylor believed in the segregation of the conception of work from its execution, accordingly held the view that managers should decide how the work was done, and workers did the work. These elements were largely, if not wholly, due to two of his explicitly stated beliefs: (1) employees in general lacked the wit to comprehend work processes; (2) workers left to their own devices lacked the willingness to exert themselves to their full extent. This was a system that required management to have absolute control over every aspect of the work process.

One of the themes to emerge from the above debate is that these forms of control mentioned inevitably lead to a loss of skills for employees. Consequently deskilling and disempowerment occur as a result of workers being stripped of the means of production (which is under the control of management and supervisors) and so, become subordinated to a system which extracts knowledge and skills belonging to the craft (Delbridge, 1995; Graham, 1995). Ultimately, the worker unwittingly becomes a robot in an interchangeable system.

A further consideration is related to the direction of skill; Braverman (1974) argued that fundamental to capitalism were the attempts manifested through Taylorist systems of management to deskill the workforce as a means of increasing control of the labour process. He argues that historically management attempted to control the labour process through the standardisation and routinisation of work. This was integral to Taylor's system of scientific management where the employer separated the conception from execution as a means of control. Through the standardisation of work, the labour

process is dissociated from the skills of the worker. Braverman (1974) further contends that by cooperating with management, workers will increasingly lose control over work processes.

Separating workers' skills from the labour process as a means of asserting management control over work is a key theme to emerge from the work of Braverman (1974).Taylor's attempt to systematise management was based on the premise of separating the *conception* of work from its *execution*, and that decision making in an organization should be reserved to management. He argues that workers not only have the inability or capacity to make decisions, but managers must prevent workers from making decisions for their own interest (Pruijt, 2000). For Braverman, the systematisation of work applied to the office as much as to the factory with clerical workers equally subject to attempts at control of the labour process as workers in manufacturing. This is a useful point to note for this thesis in particular, as the aim is to explore the issues related to control and worker experience outside manufacturing settings.

While Braverman's (1974) argument was that this form of systematisation is premised on deskilling the workforce as a means of control, the author arguably fails to take into account earlier the decline of skills in craft work and equates the advent of technology with deskilling (Adler, 2004). Ezzamel et al. (2001: 1005) are also critical of Braveman's work on the basis that his critique often neglects 'the subjective' when forming an analysis on LPT. Braverman (1974) may also have created an idealised and somewhat romantic version of the craft worker against which to evaluate deskilling (Thompson, 1989). Thompson (1989) points out that there is an assumption within Braverman's work that deskilling equates to increased management control. A lack of emphasis on the capacity of the workforce to resist the systematisation of work neglects the diversity of ways in which management control over the workforce is exercised.

To a large degree, the way that management attempts to systematise organizational control is a reflection of the interaction between workers and employers in a specific job context (Littler, 1982). In any analysis of an organizational model, there is a risk in assuming that the aims or intentions of management are fully realised in practice. The

risk is either viewing Taylorism as a failed ideology, never achieved in practice, or as a system that underlies all forms of work organization. There is also an assumption that Taylorism equates to a system of work organization that is synonymous with mass production, when in fact its use may fit more closely to a heterogeneous market and a more diverse range of job functions (Boyer & Freyssenet, 2002).

At the same time, taking Taylor's 'scientific management' at face value is problematic on a number of levels. Firstly, it was not wholly original: Braveman (1974) proposes that there is nothing new or 'scientific' about Taylorism and that the philosophy has become so widespread that it can be referred to, simply, as capitalism. Secondly, many of his contemporaries rigorously challenged Taylor's ideas. Thirdly, scientific managements' effectiveness as a system, in the way Taylor presented it, was highly questionable. The Taylor system was arguably a refinement of systematic management, which in itself was a response to the increasingly complex industrial situation of late nineteenth century USA where there was a perceived need by factory owners to regain control of the administrative processes of management: in effect Taylor popularised and systematised work organization systems that already existed (Litterer, 1961; Braverman, 1974).

Despite the advocates, it is clear that support for Taylor was not universal. Thompson (1989) discusses the model of 'direct control' and 'responsible autonomy' by Freidman, and how this shows why choices over whether or not to employ Fordist 'direct control' is based on levels of technological knowledge and reliance on workers' skills and expertise. This highlights the need for a contingent management approach to control, i.e. the availability of Taylorist/Fordist methods does not automatically allow for their usage in all situations and contexts. This is an important point for this thesis as it will later be argued that despite claims that Lean is universally applicable, the reality is that the 'rules' do not allow it to be used in all situations or contexts, or at least not in its pure form.

In addition to objections based on both moral and ethical grounds, the belief advocated by Taylor that industrial workers had freedom to work autonomously was questioned. As Nelson (1974) points out, scientific management was never successfully implemented exactly as Taylor had visualised it. In reality, company owners had

exercised a degree of control over the labour process significantly greater than the levels that Taylor asserted were then commonplace in industry. Littler (1982) argues that in the UK context Taylorist approaches to employee management were not commonplace until after the First World War, thus indicating that management strategies of organizational control are rooted in specific historical and social contexts.

2.2.3 New Paradigms of Work

Much of the origins of the post-Fordist political economy of work are based around the idea that, particularly within the industrialised world, there is a fundamental shift from production based around the manufacture of tangible goods to an economy based on the service sector where knowledge becomes the commodity (Thompson & McHugh, 2002; Nonaka et al., 2001). Using workers' intellectual abilities arguably restores the gap between the conception and the execution of work created by Taylorist systems of management. Central to this is the use of computerisation and information technology (Zuboff, 1988; Blauner, 1964). These 'new' developments place a great deal more emphasis on work diversity and the quality of products (Peaucelle, 2000) while still retaining some features of Taylorism.

In terms of work organization, it is argued by some that the new social organization of capital led to increased work intensification and attempts by management to reduce the role of the state in regulating the labour process. The Japanese style of management was regarded as an alternative organizational paradigm (Schonberger, 1982) on the basis that there was a focus on the flexible work organisation whereby agile workers could easily adapt to changes and stresses in the system (including the use of pay systems to reward labour flexibility). As Schonberger (1982: 155) argues "western workers are overspecialised. Japanese-style labour flexibility is the key to effective resource management". This was in contrast to the interchangeable parts and workers under mass production, although this view has been criticised by Vallas (1999) who claims that workers can be known as disposables where they are vulnerable in regards to their employment relationship, as a result. Additionally, there was an assumption based on superior quality which the Japanese regard as being inbuilt (Feigenbaum, 1983) as opposed to being an optional extra which characterised mass production. This style of management and strategy is best illustrated through the 'Toyota Production

System' which contributes significantly to the foundations of what we today know as Lean, and is discussed in more detail in *2.3.2 The Machine that Changed the World: History and Origins of Lean*.

This shift may also reflect that 'Fordism' was fundamentally hierarchical with individual managers given little scope to alter or change the standardised procedures leaving the political-economic system vulnerable to pressures from consumer demand (Murray, 1988). Boyer (2011) argues that there is a constant requirement within capitalism to change forms of technology, products, work organization and institutions as a means of addressing the crisis of accumulation. Thus, a number of changes to work organisation can be identified following the 1970's and the 'Japanese miracle'. New business practices began to emerge such as Continuous Improvement, Quality Management and Lean Production (Imai, 1996). There was increased investment in training and development to improve job skills in order to learn across the organisation (Senge, 1994). New corporate cultures promoted greater trust and participation among employees (Crosby, 1979; Ishikawa, 1985). This signified a so-called move from 'direct control' towards 'responsible autonomy' (Liker, 1998). Additionally, organisations became less hierarchical in their working methods (Wickens, 1986) instead choosing to employ teamworking , among other methods.

Such changes to work organisation can be analysed from a number of perspectives. For example, Kenney & Florida (1993) proposed that the emergence of the Japanese model of capitalism indicates a significant shift from the mass production model to a more collaborative organisational form. They put forward a model characterised by five dimensions: (1) a transition from physical and manual labour to intellectual labour; (2) an increase in the importance of social and collective knowledge as opposed to individual knowledge skill; (3) an acceleration of the pace of technological innovation; (4) workforce continuous improvement; and (5) a blurring of the distinction between research & development and the work undertaken on the factory floor. This model, referred to by the authors as a model of 'innovation-mediated production', is argued by proponents to be part of a trend that signified a shift in the mode of production.

The degree of integration among the workforce, both horizontally (teamworking) and vertically (interaction of the factory floor with other parts of the organization) is a key characteristic in this 'new' model of organization. Kenney & Florida's (1993) contentions around the improvement were formed through the use of technology as a means of enhancing worker skill. This mirrors the argument of other proponents (such as Blauner, 1964 and Zuboff, 1988) who suggest that the shift towards more sophisticated technology presented the potential to engage the intellectual capacity of the workforce in the performance of their jobs. Piore & Sabel (1984) also highlight the limitations of mass production including its inability to respond to a changing world economy, the skill devaluation borne out of the production of standardised goods, labour relations which require the imposition of narrow job classifications and company specific job skills that prevent the movement of labour and the subsequent diffusion of work knowledge and skills throughout the economy. The authors also argue that not only will a return to the use of craft skills be a means to economic recovery, but state that this system of 'flexible specialisation' is based on the advantages gained from employee-employer collaboration in the workplace and the workers' intellectual contribution to the success of their organization (Wickens, 1986).

Consequently, such forms of work organisation were seen by some orthodox writers, such as Womack et al. (1990), as being characterised by higher levels of autonomy or what Freidman (1979) may term 'responsible autonomy'. Friedman's (1977) model of 'direct control' versus 'responsible autonomy' indicates that under the conditions of mass production, management used direct control. This is considered by some (such as Storey, 1987; Barrett, 2001) to evolve into systems of layers of control. From this perspective, control strategies are not exclusive practices on a continuum between control and autonomy. Instead, strategies coexist and form complex control structures, which are used separately and simultaneously to control the labour process (Upadhya, 2009 cited in Pawlicki, 2012).

In reality, this can be translated into alternation between control and autonomy, i.e. periods of 'empowerment' (autonomy) could often be followed by high levels of [direct] control. Some of the later studies exploring Lean production (such as Graham, 1995; Garrahan & Stewart, 1995 and Rhinehart et al., 1997) also highlight the use of both

autonomy and control within the same setting, and will be discussed in *2.4 Working under Lean*.

2.2.4 Varieties of Capitalism

If the shift from mass production to new paradigms of work is one perspective of the political economy of work, then another is the national variation in the political-economic infrastructures between different countries. As the previous section highlighted, mass production and the application of 'Fordism' was born out of a very specific national[4] economic context. Boyer (2005: 5) further argues that the way in which intensive mechanisation was used to support a particular capitalist regime of accumulation, a capital-labour compromise around higher wages for greater job security and a "circuit of accumulation" are all located within national boundaries.

Using car manufacturing as an exemplar, critical insofar as it was previously an indicator of work organization under 'Fordism', Boyer & Freyssenet (2002) argue that work organization can vary within national economies even within the same industry. Indeed, even Womack et al. (1990) later identified this very fact that within Japan (commonly viewed as being homogenous in terms systems of work organization) Toyota and Honda followed different profit strategies resulting in different forms of work organization. The former pursued a profit strategy of cost reduction, exercising a degree of caution before investing in a product area. The result of this was the development of systems that are predicated on the minimisation of waste in the production process. Moreover, the company used their sub-contractors as a way in which to relocate excess workforce during reduced production. On the other hand, Honda (Womack et al., 1990) pursued a strategy based on innovation by focusing on employee expertise and innovation. In comparison, they developed the skill and career development for their workforce.

What is arguably problematic regarding these models of capitalism is that they neglect a number of cross-national influences. Analytically the approach can be criticised from the point of view that it has a tendency to display characteristics of description rather

[4] For example, Gramsci (1971) linked 'Fordism' to what he describes as 'Americanism' arguing that the system operated successfully to the extent that only certain national economies could support its key features.

than analysis: Crouch (2005) comments that there is the temptation to fit the empirical evidence to the model. Moreover, the increasing 'financialisation' of capitalism has impact across national borders, with Thompson (2013) arguing that the 'financialisation' of capitalism has emphasis on the importance of financial products relative to the importance of labour, and this leads to work intensification. As a result, this is manifested through the social and technical division of labour. Such a 'disconnected capitalism' approach highlights what is described as 'structural disaggregation' whereby information technology is used by management to monitor organizational performance (Delbridge et al., 1992; Sewell & Wilkinson, 1992) that, in production systems, are separated from other parts of the production process. This strengthens managerial control and reduces the capacity of managers at a unit level to act in an autonomous manner with their workforce. As a result, standardisation of work is seen by some as a means of controlling work processes (Delbridge, 1995; Carter et al., 2011: 2012a).

This discussion of work is critical for placing Lean in context. The literature review, so far, has discussed the history of work organisation and has highlighted important limitations regarding the continuities within capitalism and of neglecting influences across boundaries. The basic nature of capitalism remains rooted in systems of workforce control and, what arguably appear to be paradigm changes, may be more superficial than real (Gough, 1992). As important is the need to locate Lean within a specific context in order to understand its principles and philosophy, and this is discussed in the following sections.

2.3 Lean Production: Origins and Conceptualisation

The previous section presented a discussion on work organisation, and at the heart of this debate is the contention that Lean production is a fundamentally new approach to the delivery of work, born out of the developments in work organisation discussed in *2.2.3 New Paradigms of Work*. Womack et al. (1990) argue, in their influential work on automobile manufacturing, that Lean production represents a paradigmatic change from existing systems of work based on mass production. Their argument is that Lean is advantageous for organisations, as companies can avoid the high costs of craft

production and the rigidity of mass production. Lean has the potential to multi-skill the workforce at all levels of the organization through responsible autonomy and empowerment.

That said, the literature on Lean is broad and encompasses Lean production in manufacturing settings, the Toyota Production System (TPS) and the evolution of the term to a broader context. This evolution has led to some confusion among literature as to what Lean actually is. It is important to bear in mind that Lean is not a theory but a perspective, a philosophy and a practice; a form of manufacture based on worker 'empowerment, teamworking and total quality control'. Therefore, this can result in a lack of conceptual clarity and understanding which affects how organisations perceive and implement Lean. This section identifies themes from throughout the Lean literature, which will help in understanding Lean Thinking in order to set the scene for the next section which focuses on how employees experience Lean working.

2.3.1 Lean and the Problem of Definition

In order to study and evaluate something it must be tangible. It is therefore important that the concepts upon which it rests are clear. In other words, researchers have to know what they are looking for and are able to recognise it when they see it. With matters associated with Lean, conceptual clarity has become a problem. The actual term 'Lean production' was first devised by Krafcik, a member of the ground breaking International Motor Vehicle Program (IMVP) research team at The Massachusetts Institute of Technology. It was a 'label' used to describe Toyota's manufacturing methodology (Krafcik, 1988; Modig & Ahlstrom, 2012). The rationale for using the term 'Lean' was to highlight the methodology of using less input (e.g. time and labour) in comparison with traditional mass production techniques (Radnor & Bucci, 2010). Yet, most researchers refer to publications by Krafcik's fellow Massachusetts Institute of Technology researchers Womack, Jones and Roos who published *The Machine that Changed the World*[5] in 1990 and *Lean Thinking* by Womack and Jones in 1996, as a defining moment in developing and spreading the Lean concept across different sectors

[5] Hereby referred to as *Machine.*

and industries around the world (Radnor & Boaden, 2008; Burgess & Radnor, 2012). Womack and his colleagues define Lean as the following:

> Lean production ... is 'lean' because it uses less of everything compared with mass production - half the human effort in the factory, half of the manufacturing space, half the investment in tools...half the engineering hours to develop a new product in half of the time.
>
> Womack et al., 1990: 13

An examination of this definition suggests that there is a strong emphasis placed on the reduction of resources both in the factory and activities extending beyond the shop floor (Bruun & Mefford, 2004). Womack et al. (1990) consider Lean to be a system that creates outputs using less of every input and, although similar to the traditional mass-production system, it offers increased choice for the end user, which it is argued signified a paradigm shift at the time (Price, 1994). While this seems to suggest that Lean is neatly defined, within today's literature the only agreement seems to be that there is no universally accepted definition (see, for instance, Lewis, 2000; New, 2007; Dahlgaard & Dahlgaard-Park, 2006; Pettersen, 2009).

Shah & Ward (2007) claim that ambiguity has set in as a result of comparison with other terms such as the TPS, Total Quality Management (TQM) and Just-in-Time (JIT) and a conflagration of various change management concepts. Consequently, Shah & Ward (2007) propose that Lean can be defined from either one of two perspectives: from a philosophical perspective that emphasises conceptualisation (or Lean Thinking) or from the practical perspective emphasizing integrated management systems.

Lean is often conceived as a combination of good operations management and effective people management that enables an organisation to implement process improvement and, thus, increase their efficiency and quality (Womack et al., 1990; Liker, 2004; Womack & Jones, 2005). From an extensive review of the literature it would appear that most scholars agree with the Radnor et al. (2010: 2) definition of Lean, described "…as a management practice based on the philosophy of continuously improving processes by either increasing customer value or reducing non-value adding activities (muda), process variation (mura), and poor work conditions (muri)". As Hines et al. (2004) indicate, Lean can exist within organisations at both strategic and operational levels

while Shah & Ward (2007) and Shah et al. (2003) argue Lean primarily has a philosophical and practical orientation. Bhasin & Burcher (2006) claim that Lean primarily is a philosophy rather than a set of tools, whereas Pil & MacDuffie (1996) and Ichniowski et al. (1997) claim that Lean rests on a set of practices and tools used in eliminating waste. In order to understand the original concept and how it has evolved, it is therefore important to consult the original work published in *Machine*.

2.3.2 The Machine that Changed the World: History and Origins of Lean

The origins and development of Lean, how it came to be and what it represents is noted in a number of key texts (e.g. Womack et al., 1990; Ohno, 1988; Fujimoto, 1999; Liker, 2004) and journal articles (e.g. Dahlgaard & Dahlgaard-Park, 2006; Hines et al., 2004; Holweg, 2007; Petterson, 2009) which describe its history in great detail. The term 'Lean production' itself is associated with *Machine* which is considered by some, such as Spear (2005), as a 'ground-breaking' text.

As previously mentioned *Machine*, and consequently the Lean philosophy, is based on a comparative study in the automotive industry led by the IMVP in two different phases with the aim to understand the challenges the automobile industry faced at the time. Phase One (1979 – 1984) led to the publication of the text *The Future of the Automobile* (Altshuler et al., 1984) which, has since, had relatively little publicity or acknowledgement. Phase Two is the product of a five year (1985 – 1990) $5M study of the international auto industry leading to the publication of *Machine*. The study analysed manufacturing techniques by surveying ninety automotive assembly plants in seventeen countries: around half of the entire world's assembly capacity at the time. The project investigated the role of the automobile industry in the world economy, claiming Japanese manufacturers produced at double the rate of their Western counterparts (Womack et al., 1990: 4-7).

The study was the first global study of the time which provided an in-depth understanding of 'world class manufacturers' (Schoneberger, 1986) but can also be seen to merely quantify earlier work relating to both world class manufacturing and JIT (see, for example, Schonberger, 1986; Monden, 1983; Shingo, 1981; 1985). IMVP research into the global automotive industry continues today; although the wide range of

publications on Lean tend to overshadow their current research which focuses more on benchmarking. The significance of *Machine* continues to draw contemporary authors to refer back to it: it is about the automotive industry in its entirety. The solutions and situations presented (especially in the last chapter) are often applicable to many industries, but it would first be important to understand the intricacies of the automotive industry to understand the full context of the ideas in the book.

Womack et al. (1990) use the principles used at Toyota to define Lean production (Womack & Jones, 1996; Spear & Bowen, 1999) which was viewed at the time as an 'exemplar' (Krafcik, 1988). The TPS focuses on reducing waste through the consideration of all aspects of the production process (Ohno, 1988) by using techniques and tools for eliminating waste (Rother & Shook, 1998). The method was formally documented in the late 1970's, and illustrated in the English translation of the system by Ohno (1988) which popularised the ideas and philosophy of Toyota to a global audience for the first time. While the text made an important contribution to the field of operations and performance management, it is heavily based on the 'harder' elements of performance improvement whereas *Machine* emphasises the 'softer' people-related aspects.

More specifically, Womack et al. (1990) describe how craft production lacked the financial resources needed to create new products whilst mass production systems had the capacity to freely interchange the parts needed to manufacture motor vehicles. This interchangeability crucially was allied to the use of an assembly line that reduced human effort. Whilst mass production was a simple system and allowed for goods to be manufactured in an organised sequence, it created a division of labour whereby workers on an assembly line were divorced from the conception of the product. Womack et al. (1990) argue that mass production led to deskilling, and using inspiration from what they argued were the effective production processes of Japanese car manufacturing, they argue that what they describe as Lean production in effect transferred a significant element of responsibility for work organization to the workforce as a means of adding value to the organization.

This so-called new phase of work organisation, as advocated in *Machine*, was symbolised by the utilisation of employees' skills as a means of continuously improving economic performance (Boyer & Freyssenet, 2002) and signify what proponents believe to be a shift towards responsible autonomy (as defined by Freidman, 1977). Lean production was seen to replace existing models of work, with the 'old' model of work based on a division of labour and the use of limited skills. What emerged from *Machine* was the potential to create a multi-skilled workforce.

At the time that *Machine* and subsequent research was carried out (for example MacDuffie, 1995) many manufacturers were moving away from mass production and towards a more flexible and agile workforce (Duguay et al., 1997). This theme was prominent in businesses at the time as it became more widely accepted that dealing with problems required motivated, skilled and adaptable workers moving away from the lowed skilled, low paid workers of the past. It was believed organisations that moved towards flexible production outperformed mass production plants (Macduffie, 1995).

Whereas previously, under mass production, workers' skills were devalued and workers were expected to perform a series of narrowly conceived standardised and repetitive tasks, under Lean production employees have their work skills enhanced. This was, broadly speaking, in three areas: (1) an increase in skill variety with the ability to perform a broad range of production tasks, (2) an emphasis on skills that address the quality of the product reflecting the need to meet increasingly high consumer expectations (Womack & Jones, 1996); and (3) Lean is a system that enables workers to use their skills in problem solving. Workers' lack of identification with their company, under mass production, was replaced by a system where employees had work objectives that mirror those of their company, and will strive to use their intellectual skills for the benefit of their employer.

This philosophy was based on the ideas of Ohno (1988), who argued that the TPS was founded on two principles or 'pillars'. The first was the "JIT" principle that Ohno described as "a flow process [where] the right parts needed in the assembly reach the assembly line at the time they are needed and only in the amount needed" (1988: 4).

The second principle was 'autonomation'; automation with a human touch (i.e. respecting and trusting workers).

Williams et al. (1992), however, point out that *Machine* takes one of the best Japanese companies - Toyota - and compares it to one of the worst American companies, therefore it is not surprising that Toyota appear 'outstanding' and 'an exemplar' of this form of manufacturing. While *Machine* does illustrate what was being done in Japan, it would have been difficult to find companies in either Europe or the USA which compare favourably with Toyota. Womack et al. (1990) argue the TPS focuses on suppliers and customer relationships with an overarching goal of eliminating non-value adding tasks, considering Lean production to be a paradigm shift (Price, 1994; Perez, 2005). The authors, however, believe that Lean production extends beyond the principles of JIT and more accurately describes the production system used in the Japanese automobile industry, at the time (Bruun & Mefford, 2004). This new manufacturing paradigm placed emphasis on outsourcing, cooperation, networking and agility signifying 'Japan's secret weapon' (Womack, et al., 1990: subtitle) with *Machine* concluding:

> Lean production is a superior way for humans to make things. It provides better products, in wider variety at lower cost. Equally important, it provides more challenging and fulfilling work for employees at every level, from the factory to headquarters. It follows that the whole world should adopt Lean production, and as quickly as possible
>
> Womack et al., 1990: 225

Machine illustrated for the first time how significant the performance gap was between Japanese and Western automotive industries: a 2:1 difference (Krafcik, 1988; Womack et al., 1990). The reason for such superior performance, claimed Womack et al., was Lean production through which Japanese business and manufacturing methods used less of everything. However, Japanese firms (more broadly) have been cited to systematically outperform their US counterparts in a number of industries other than automotive (Kenney & Florida, 1993) while not always following the same system as Toyota, therefore indicating success may not always rest with Lean production.

Moreover, Liker et al. (1999) claim that other key Japanese firms (for example Honda) do not practice all aspects of the TPS or are 'high performing'. Therefore, this questions some of the universalistic assumptions, which *Machine* claims in terms of 'one best way'.

Williams et al. (1992) particularly question the central premise made in *Machine* - that of Lean production requiring 'half the human effort'. The authors suggest that the basis of this claim is on focusing on parts of the manufacturing process that account for less than fifteen percent of the total value of the labour involved in manufacturing a car. Therefore, there have historically been questions over such impressive results for organisations as *Machine* implies.

The key to the success of *Machine*, claims Holweg (2005), was IMVP's methodology and dataset which allowed a like-for-like comparison that had not previously been available to the public or subject to academic review. While some have questioned the 'truth' of this seminal work (see, for example, Williams et al., 1992) and its relative simplicity of the account from the data collected, it is seen as a major contribution to many fields within operations management, and HRM (Redman & Wilkinson, 2008). Despite this, Holweg (2005) claims surprisingly little documentation was available with regards to the development of the assembly plant methodology and other key contributions that laid the foundations for the text other than in anecdotal form. In fact this is a main criticism of *Machine* - it is based on anecdotal evidence and focuses on relatively little 'new' concepts with many of the ideas such as JIT and the TPS having been laid down much earlier than 1990, and published extensively by the likes of Schonberger (1982), Hall (1987) and Monden (1983) almost a decade earlier.

Furthermore, Holweg (2007) notes the role of the Japanese in financing parts of the IMVP research, which could raise questions as to the authenticity of the results. The programme was provided with funding from almost every automotive company in the world, this could therefore have a possible impact on the level of detail published. This can be the case when there is a financial conflict of interest due to funding of research from externally. In addition to this there are questions over the institutional framework which the IMVP research was characterised by. Cusumano (2005, cited by Pardi, 2012: n.p) questions the credentials of *Machine* stating "Womack was not cut out to work in the academic world. What he really wanted was to be close to the action and to be accountable to nobody". While there is little other evidence to support this assumption, some LPT researchers have in periodically criticised *Machine* for the anti-intellectual and anti-academic stance of the authors, the lack of theoretical or methodological

approach, the writing style (claimed to be 'journalistic'), the target being the managerial community and never the academic, and the 'recipe for a miracle' which the book advocates (Pardi, 2012). Recently, Pardi (idem) attempted to reconstruct the trajectory of the IMVP and the more general evolution of the academic field concerned with Lean production. The author relies heavily on secondary sources and only twenty-five interviews with international researchers directly and indirectly involved with the IMVP. Despite the lack of 'academic' evidence available in *Machine*, there is still growing evidence of an uncritical and unquestioning 'faith' in the Lean production paradigm.

A number of similarities between *Machine* and other research are also apparent, which also raises questions over how 'new' the concept was. Holweg (2007) compares the findings to the Krafcik paper in 1988 claiming that the main messages, which emerge from *Machine,* are the same. However this is somewhat misleading as Krafcik's work was produced during his time at MIT Sloan and his research was merely continued by the IMVP. In fact, closer examination of the IMVP study and related work shows that a number of papers were published prior to *Machine* which contain some of the detailed data and statistical analysis that underscore the claims made in *Machine*. These included papers by Krafcik (1988 and 1989), Krafcik & MacDuffie (1989) and MacDuffie (1989). Despite some criticisms Holweg (2007) concludes that these are not entirely justified and the text fundamentally altered the way that performance improvement was viewed globally:

> …most crucially the *Machine* book provided the industry with 'a story of fear and hope' at a time when it was obvious that the manufacturing industry was in distress. It graphically illustrated the extent to which the West was being overtaken by Japan and its superior manufacturing techniques, yet also provided hope that by adopting lean techniques this trend could be halted. It essentially made the manager the decisive element in the system determining whether his or her company would 'become a Toyota' or not, and hence set a clear vision for improvement in many organisations
>
> Holweg, 2007: 432

Therefore, while there is debate as to how Lean production can be defined it is within the parameters of the original study by IMVP and their researchers which offers a starting point for understanding the philosophy. The total contribution of the *Machine* text is incalculable, however many researchers still mention the book when referring to the Lean philosophy in a number of contexts. The Lean production concept itself is

unlikely to have been as successful or universally accepted today without the text, and therefore it can be seen to have contemporary resonance.

2.3.3 Lean Production to Lean Thinking

The discussion above indicates that there may be limitations to the universality of Lean production (Pettersen, 2009) both inside and outside automotive, which would explain why Lean is not uniformly applied across industries even in Japan. Instead, Lean is typically implemented using a piecemeal approach. A review of the evidence indicates a number of phases are evident in the evolution of Lean (Stone, 2012) from its conception as part of the IMVP programme, through to the focus on performance currently characterised by an increasing number of empirical articles (Shah & Ward, 2007).

According to Stone (2012) there are five phases of evolution with his research indicating a simultaneous change in both the terminologies and focus of Lean. For example, early phases focused on quality, Toyota and Japan (Holweg, 2004; Hines et al., 2004). Following an extensive review of the literature on Lean, Stone (2012) developed a five phase model showing the development of Lean production and Lean management, which has the merit of helping categorise and conceptualise the rise of Lean and how it has evolved. Earlier phases are also characterised by a focus on how organisations can and should *use* Lean, with case studies mainly taken from manufacturing based organisations. Later publications move towards providing a more evaluative focus, with emphasis on *measuring* Lean and performance while also incorporating human resource dimensions to a greater degree.

The work of Holweg (2004), Hines et al. (2004) and Shah & Ward (2007) are similar in their approach: while also using a systematic review of the literature both indicate that the Lean journey starts at the foot of JIT and can be traced through key events involving Toyota. None of these authors attempt to categorise Lean, which is perhaps more useful in understanding the development of the philosophy; categorisation tends to limit our appreciation and understanding of the wider context. Therefore, the assumptions which Shah & Ward (2004) make are that Lean can be understood from two perspectives: firstly from a philosophical perspective (Womack & Jones, 1995; Flynn et al. 1995; Spear & Bowen, 1999) and secondly from the practical perspective emphasizing

integrated management systems (Shah & Ward, 2003; Li et al., 2005). This comes simultaneously with a change in the focus of Lean implementation, as Hines et al. (2004) note, which shifted from an operational focused to strategic focus.

Womack & Jones (1996) further explored the findings in *Machine* within a wider organisational context, which led them to pioneer the term 'Lean Thinking', thus indicating an evolution in the conceptualisation and application of Lean. Holweg (2007) states that Womack et al. (1990) argument of universal applicability of the Lean methodology puts an end to thinking that Japanese superior performance is intrinsically linked to its culture (Burgess & Radnor, 2012) instead indicating that Lean can be applied to any organisation in any context. Womack & Jones (1996) later argued that Lean is not just a cost-cutting toolkit, but a holistic management philosophy embracing the whole system design based upon new Lean principles that can be adapted far beyond its original manufacturing context (Womack & Jones, 1996; Hines et al., 2004). These principles were formed into a five-step process aspiring to foster a culture of continuous improvement towards perfection.

This evolution in terms of terminology, focus and application resulted in Lean *Thinking* (Womack & Jones, 1996), based on five Lean principles which were proposed as a framework to be used by an organisation (universally) to implement Lean. Those five principles are (1) specify what creates value from the customers perspective; (2) identify all steps across the whole value stream; (3) make those actions that create value flow; (4) only make what is pulled by the customer JIT; and (5) strive for perfection by continually removing successive layers of waste. This concept, they argued, was more applicable to the universal organisation.

The differences in definitions and conceptualisation have raised a number of issues, which the author intends to explore in more detail in this thesis. For example, it has emerged that it is important to understand what exactly organisations and workers mean when they refer to 'Lean'. Thus, the author is particularly interested in how each respondent defines Lean, i.e. from a practical or a philosophical perspective. Moreover, while Womack & Jones (2006) imply that Lean Thinking can apply to anyone, the implication is that organisations must be able to identify the five criteria stated above.

In order to understand the difficulties associated with transferring Lean, and its suitability in other contexts than the one it was conceived, it is important to review the critiques of Lean. The way in which Lean has been perceived form a LPT perspective, emerging from early debate on work and organisation, criticises Lean Thinking on a number of terms. It is important to explore these critiques to help to answer the aim of the research, and set up a strategy to conduct this study.

2.3.4 Critiques of Lean

A number of critiques of Lean have emerged following analysis of its application within the automotive industry (see, among others, Berggren, 1992; Delbridge, 1995; Rhinehart et al., 1997; Delbridge, 1998; Landsbergis et al., 1999; Stewart et al., 2007). Many such writers propose that Lean is often implemented in a prescriptive fashion (Graham, 1995) which results in a superficially positive image of the system yet a rather different reality (Garrahan & Stewart, 1995; Baxter & Hirschauser, 2004) for workers. This literature, written mainly from a labour process perspective, tends to focus on how work is organised; what workers actually do; what management want them to do and demonstrates the inherent tensions that arise at the point of production. It is important to acknowledge the critiques of Lean as these help to demonstrate how and why Lean production (and Lean Thinking) re-shaped the struggles for control and autonomy.

A number of notable key texts, for example Oliver & Wilkinson (1992), see Lean as having led to a fundamental transformation of the technical and social organization of production within British industry. Garrahan & Stewart (1992), who document life on the production line, emphasise how this apparent transformation is no less exploitative of previous' command and control' organizational forms. For Garrahan & Stewart (1992), there are three fundamental characteristics of Lean production: control, exploitation and surveillance. Graham (1995) portrays the emotional experiences of workers on the production line in the USA which change from excitement initially towards resistance as a result of increased control. Rhinehart et al. (1998) conclude that workers believe that life under Lean production results in disillusionment and cynicism. These studies have particular relevance for this thesis. They show how the effect of Lean implementation on workers and demonstrate how contradictions occur at the micro-

level within organisations. Thus, this suggests that the realities of Lean are somewhat different to the rhetoric advocated by its founders.

Despite proponents insisting that organisations implementing Lean place a significant importance on involving employees in the organisation-wide improvement process in order to achieve strategic objectives (Crosby, 1979; Ishikawa, 1985), some authors see the shift towards softer and more indirect controls of work. Additionally, Lean has been criticised for introducing less fulfilling working conditions and failing to live up to its promises. Lean is no less reliant for its success on repetitive work cycles than Fordism. Production targets are often only achieved through extending the working day, the use of overtime (Coffey, 2006) and a peripheral workforce (Kamata, 1979). Williams et al. (1992) point out that beyond the increasing sophistication of the automation there was little distinct about Lean systems of work. As it gained popularity elsewhere, Lean was subject to scrutiny within Toyota itself as it was failing to deliver the efficiencies required (Coffey & Thornley, 2006): single assembly line production systems critical to 'flow' were replaced (Benders & Morita, 2004) which resulted in the introduction of segmented assembly lines to relieve pressures that occurred due to stoppages.

Such fragility of the Lean system is argued by Pardi (2007), who points out how inefficiencies in Lean not only resulted in the abandonment of single assembly line production, but also the intensification of work. This intensification of work was in part manifested in pressures on the workforce to generate significantly large numbers of suggestions as a means of improving productive processes (Benders & Morita, 2004; Pardi, 2007). However these attempts to generate worker ideas were a management driven process. The management initiatives to create productive improvement had significantly greater weight and impact than those ideas suggested by the workforce. Its fragility as a work system had weaknesses, furthermore, reliant as it was, on attempting to balance output through its use of a contingent labour force.

2.4 Working under Lean

The use of the Lean model, as described above, reflects what Stewart & Martínez Lucio (1998: 66) describe as the "new politics of production" whereby Lean increasingly

creates conflicts around "sites of control" as management seeks to link all aspects of work as a means of increased control of the labour process. As a result, this individualisation of the employment relationship results in work intensification, standardisation and routinization of jobs for the worker.

Control over the labour process in this context is sought through, what Womack et al. (1990) would term, 'waste' within the system. It is claimed that management seek to impose [direct] control over individual workers through close monitoring of work tasks legitimised through forms of visual management (Carter et al., 2011). The contribution of individual workers is evaluated through their efficiency and is measured in terms of output by unit of time. Standardisation of work processes contributes to management's ability to control the labour process (Garrahan & Stewart, 1992).

What arguably distinguishes Lean from previous forms of work organization relates not specifically to work intensification *per se*, but the social organization of labour initiated by management that seeks to prevent the workforce acting as a collective body to resist management attempts at control. Some authors claim that Lean uses 'respect for people' in order to enhance power in the workplace and to control workers (Carter et al., 2013) through leaders and managers who are subject to strict control and surveillance (Garrahan & Stewart, 1992; Graham, 1995). Additionally, Lean is seen to use 'teamworking' as a means of subordinating the individual worker to the interests of management (Danford, 2000) to management's interests.

As it is argued by Stewart et al. (2009) techniques such as quality circles and similar apparently collaborative team activities are used not to generate innovative ideas that will create benefit to the workforce and economic advantage to the firm, but to use workers' knowledge against their own interests. As work tasks are routinized, certain parts of the job eliminated or 'unwanted workers' removed from the firm, a number of LPT researchers claim the intensification of work is the outcome (for example, Stewart et al., 2009: 207). This debate on the politics of production is a critical one in helping to address the nature of Lean working, which this thesis aims to explore.

This discussion around the new politics of production brings into focus a number of areas that are explored in this section. These issues include the perceived move towards greater surveillance under Lean, and employees defending the frontiers of control as a result. Skills under Lean are discussed, along with an exploration of participation, leadership and management under Lean. Finally this section presents the discussion on responses to Lean and the questions that the concept raises over their sense of self-identity (Giddens, 1991). This section explores how Lean redefined the 'rules' of engagement and provide management with the upper hand.

2.4.1 The Age of Surveillance

It is argued by some that the introduction of Lean is seen as being synonymous with the introduction of surveillance as a form of control (Sewell & Wilkinson, 1992). Lean attempts to co-opt workers in contemporary settings into a system of self-surveillance and self-regulation in what Thompson (2003) terms 'the age of surveillance'. This panoptic surveillance, some authors argue, is a form of management control that is difficult (if not impossible) to resist. Panoptical control is when employees obey the prevailing rules and norms when they know they are being watched.

Historically there have been a range of perspectives on 'control' with Edwards (1979) presenting three types: 'bureaucratic', 'technical' and 'normative' which are three forms that management may use to extract labour. These forms of control reflect the forms of production and the nature of technology. Callaghan & Thompson (2001) build on Edward's work and propose that these three forms are being combined in order to overcome the limitations of each method, with the idea that this will increase managerial control. Thus, control does not take place in isolation of the nature of production which, as in skilled work, often lies beyond the reach of management control.

Callaghan & Thompson (2001) suggest that management tries to influence the timing and speed of activities through technical controls (with Lean these could be the visual management referred to as 'Andon' systems). Technical and bureaucratic controls can be combined to monitor the workers, the results of which can determine work practices, remuneration or continuation of employment; ideas often seen within the

manufacturing sector but not so much within, for example, the public sector. Carter et al. (2011) point out that management often frame this under the guise of 'respect for people' while retaining a significant amount of control over workers.

Additionally, Buraway (1985) identified two types of control that exist within organisations: hegemonic and despotic. The former approach takes into consideration a wide range of subtle methods as it combines coercion with consent, a method identified to be used in many automotive case studies (see, for example, Garrahan & Stewart, 1992; Graham, 1995). The latter approach is one which uses coercion as a direct, personal form of control to manage the workplace.

Surveillance, seen by some as the latest form of control, has evolved directly from the ideas of JIT and the principals that Lean is based on. Thompson (2003) concludes that while surveillance is certainly one tool for controlling workers, it is not one that always works. This raises a number of important questions about how panoptic aspects of Lean are present in today's workplace, and why it is effective in ways that were not possible previously. This form of control is typically based upon Foucault's 'panoptical model' which enables management to watch employees, thus encourage the individual to self-regulate their behaviour, which in turn has the effect of reducing the actual need for observation.

A number of studies focus specifically on the use of surveillance in workplaces, many of which drawn on examples from the call centre sector. Fernie & Metcalf (1998), for example, show how the 'electronic panopticon' in call-centres enable managers to completely control workers. This rather deterministic account of panoptic surveillance has been widely contested (e.g. Taylor & Bain, 2003; Callaghan & Thompson, 2001, 2002; Thompson, 2003; Warhurst et al., 2008) on the grounds that resistance in some form is always possible – notwithstanding the fact that what we call resistance may be little more in certain cases that merely means by which workers 'distance' themselves from the total effect of panoptic methods.

Extant studies attempt to identify the different types of control that exist under Lean specifically. Graham (1995) lists five different, yet interlinked, types of control which

exist within production manufacturing settings. Control through *compliance* (self-discipline powerful method of control), *peer pressure* (when colleagues fail to keep up the line), *mutual support* (cooperation and mutual support among team members where workers are sometimes seen as a 'victim' of the system), *direct authority* (via team leader disciplining staff) and *kaizen* (constantly introducing new ideas to threaten stability and thus not resting on laurels).

These are similar to some of the methods of control discussed by Garrahan & Stewart (1992: 94) although the focus of their discussion is on the role of team working as "the social form in which quality and flexibility are used to subordinate workers". They, too, highlight how kaizen activities act as a form of control and subordination by means of determining when meetings are held, how employees do their work and ensuring that there is constant change within the labour process. These are forms of panoptic control mentioned earlier.

Interestingly, Garrahan & Stewart propose a new model which illustrates the reality of *The Nissan Way* which they argue is characterised by 'control, exploitation and surveillance' acting as a virtue less cycle derived from the operation of the system portrayed as 'quality, flexibility and team working'. From his own personal experience on the production line Mehri (2006) also experiences similar methods of formal control through social mechanisms suggesting a culture exists which coerces employees to share attitudes, values, and goals as defined by the group, the team, or the entire corporation. Evidence by Bruno & Jordan (2002), comprised of survey results and interviews with Mitsubishi Motors employees in 1997, concludes that the workforce is severely disappointed in their work post-Lean, and that the reality is of a system which does not live up to what management say the system will be. Workers experienced more control and less respect, which lead to resistance.

Recent evidence from a non-manufacturing context illustrates the points above well. The introduction of Lean in Her Majesties Revenue and Customs (HMRC) highlights how, from the worker perspective, those involved in the implementation of Lean feel that they have taken a step backwards. Carter et al. (2011) used a comprehensive methodology consisting of 840 survey responses across six sites, including 36 in-depth

interviews. While the impact of Taylorism on the typical craft worker was claimed to be the cheapening of labour, deskilling and degradation; the same was found at HMRC where control over employees was established in six areas including:

1. hourly targets set for each worker and team (varying from six to eighty per hour);
2. supervisors patrolled teams hourly in order to monitor performance;
3. white boards were updated hourly as public symbols of management control, often 'naming and shaming' underperformers (Carter et al., 2012a);
4. 'early management action' disciplinary processes were used on underperformers;
5. introduction of 'in-flight' quality checks and public reprimands;
6. emergence of worker-supervisory resistance.

Here, links can be made to different forms of control. Illustrating Friedman's (1977) concepts of 'direct control' and 'responsible autonomy' this example demonstrates that management have a variety of methods to extract more labour from employees, some of which are more subtle as they encourage the worker to manage themselves in the desired direction (as in the case of responsible autonomy), and involve raising skill levels. The HMRC example above appears to indicate a form of direct control, although under Lean we may use the term 'surveillance'. It also raises questions over what form of control is used in non-traditional environments implementing Lean, whereby historically workers have a relatively high level of autonomy and freedom (Grugulis, 2007) and have been seen to resist through distance (Collinson, 1992) in order to escape power/knowledge regimes of control (Worthington & Hodgson, 2005).

Despite this somewhat negative discussion, proponents of Lean often argue that the concept is characterised by the two key principles of 'Continuous Improvement' and 'Respect for People' (Ohno, 1979; Modig & Ahlstrom, 2012; Liker, 2004). Moreover, Emiliani (2011) argues that it is always the latter principle that enables the former, thus highlighting the importance of effective management of the people aspects as a crucial element of successful improvement initiatives. A number of key authors within the LPT

debate have questioned the practice of respect for people on the basis that the reality in fact increases stress (Conti & Warner, 1997).

While the intensification of work has been seen by some as one way management under Lean control workers, there also appears little consensus in the literature over which aspects specifically lead to intensified work. While Delbridge et al. (1992) argue that work intensification is primarily associated with waste elimination and 'tight manning', Sewell & Wilkinson (1992) argue that work intensification is associated with surveillance and strict discipline. Thus a number of different forms of control have been proposed from technical and social (Wilkinson, 1998; Garrahan & Stewart, 1992) to tactical and strategic (Sewell & Wilkinson, 1992). The former argues control derives from the use of increasingly powerful management information systems which provide extensive shop floor surveillance - a vertical process which provides an over-arching controlling mechanism. This was observed to be the case at HMRC by Carter et al. (2011) and was discussed earlier in this section. There are overtones of here with the research of Scarbrough (1998) who indicates that management, as well as workers, are subject to increasing control and pressures.

Scarbrough (1998) concludes that the "intensification of management went hand in hand with Lean" (p. 710) while also indicating Lean had more of an effect on redesigning the control structures between management and shop floor. Therefore, the link between Lean systems and labour intensification can be a result of organisational structure and culture. This also raises questions which are important for this study over whether management are subject to the same pressures and controls that workers are.

Notwithstanding this, Hassle et al. (2012) place caution by concluding that we cannot simply consider this a simple cause-and-effect model. Instead we must understand that Lean is an ambiguous concept which can have both positive and negative effects depending on the actual Lean practice used on the shop floor. It is therefore important to understand what version of Lean the cases used in this research use in order to determine the issues raised above.

2.4.2 Defending Frontiers of Control

There are extant studies that show employees can and do resist Lean, and attempt to distance themselves from implementation. The continuing emergence of case studies exploring Lean, and how workers experience it, illustrates how "matters at the point of production" are indicative not just of battles over the frontier of control, but also of "how workers are persuaded to release their labour power" (Edwards & Scullion, 1982: 151).

Critical research from the history of work organisation literature (some of which is presented in Section *2.2 History of Work Organisation*) illustrates that a concept such as Lean can be seen as a sustained management offensive to push forward the frontier of control (Taylor & Bain, 2001) by shifting the balance of power towards management, simultaneously restricting (or reducing) employee involvement (Bach et al., 2005). It is often assumed that individuals, such as professionals, defend a tangible 'frontier of control' in order to mediate 'managerially prescribed rules of engagement' (Bolton, 2005). This ensures that they remain relatively autonomous (this is discussed more in Section *2.4.7 Subjectivity and Self-identity as a Barrier to Lean*). These frontiers are often established by professionals themselves, based on their idea of who they are, and what they should be doing (Willmott, 1997).

The result is that workers can both contain their effort and resist by engaging in a process of defending their frontiers of control – a 'line' that is perceived between that individuals' autonomy and management. Recent evidence by Taylor & Moore (2015) illustrates how employees often encourage each other to resist managerial interventions (such as Lean) into frontiers of control they define and develop themselves. Thus, some employees chose not to engage with Lean, or not to put effort into supporting management. The relationship between individuals and their organisations can often result in ambivalence; a concept characterised by 'approach-avoidance' tendencies, according to Sincoff (1990), highlighted by 'mixed feelings' about work and organisations.

Within the context for this research, the effort bargain is also important: the forms of managerial control discussed in previous sections, and linked to Lean, attempt to shift the 'effort bargain' (Beynon, 1973) further in favour of the employer. This bargain describes the 'gap' between how much work managers expect from their staff and the amount employees actually undertake (Bolton, 2005) and potentially raises questions over the concept of the 'ambivalent employee'. Sewell & Wilkinson (1992) explore the effects of surveillance on employees, concluding that workers defend their frontier of control by engaging in a term that Roy (1952) defines as 'making out' i.e. workers cheat the system by applying a level of effort that they can most easily 'get away with'.

Moreover, Wilkinson (1983) also demonstrates how workers will 'hide' work and become tactical in the levels of effort that they give management in order to protect themselves over time. Thus, despite LPT researchers in Section *2.2 History of Work Organisation* implying that workers are directly controlled and stripped of their autonomy, some evidence relating to Lean implies that while control is present, simultaneously workers can choose to apply effort according to their own interests and needs. Therefore employees can and do use their effort bargain to their advantage.

As it is described by Heldal (2015) there is a natural divide that exists between managers who, on the one hand, want to plan and control work and professionals, on the other hand, who wish to retain their autonomy. As identified by Taylor & Moore (2015) sceptical members of staff often resist by defending these frontiers of control, which raises questions over the politics that are associated with introducing Lean, and its effect on the employment relationship. The introduction of control-orientated management processes has given rise to resistance from professionals (Worthington & Hodson, 2005; McGivern & Ferlie, 2007) arguably widening the gap between what work managers want from employees (specifically professionals) and what employees are willing to give.

Although the focus is typically on employees working under capacity, they can also fulfil their contractual obligations or exceed them; this exceeded effort bargain is demonstrated by Bunting's (2004) 'willing slaves'. Yet, as such authors also argue, it is questionable how much choice these employees always have over their effort bargain.

Employees' choice over the effort they put into their work is represented by the 'indeterminacy of labour', with LPT revealing the amount of labour to be performed cannot be guaranteed in advance (Thompson & Smith, 2009). The former states that this indeterminacy creates the perpetual tension between both sides. He also suggests that there is actually a 'double indeterminacy' in the labour process, as not only can employees decide (within constraints) their own work effort, they also have 'labour mobility', the power to leave an employer completely. In contrast, Fernie & Metcalf (1998) suggest there is no indeterminacy in work (see also Sewell, 1998). However, these claims are highly contentious and are not generally supported by the wider LPT community.

Despite the claims of Sewell & Wilkinson (1992) and more recently Taylor & Moore (2015) that employees can control their effort bargain, research conducted by Carter et al. (2010; 2011; 2012a) implies that employees may have little choice in many cases over it. Evidence from workers at HMRC proposes that, as a result of the 'rules' of Lean and design of the system, employees have little opportunity to work under capacity. The assumption is that workers are expected to exceed their effort bargain and to incorporate Lean into their current roles and responsibilities. Similar findings have been seen in manufacturing environments, although Delbridge (1998: x) found that while "management in Japanese manufacturing plants are able to secure greater control over their workers, those workers in European plants were able to regulate their effort bargain and secure a measure of counter control". He found that workers do not engage in discretionary activities, and do not generally go beyond their effort bargain. In order to meet demands under Lean, at time managers rely on relationships with workers in order to "swap favours and the element of panic with which managers encourage workers to make extra efforts to meet customer demands" (Delbridge, 1998: 101).

Within manufacturing, the effort bargain is sometimes managed through a piece rate system (Delbridge, 1998) whereby this method of pay aims to tie together individual effort and reward, but is difficult to achieve in practice. While piece rates are meant to promote teamwork in order to meet customer demands, this can lead to the frustration of the efforts of those workers who want to work faster than others. Within non-production environments this is more difficult to see, however Carter et al. (2011)

identified that within public sector cases there is evidence of management extracting increasing amounts of effort out of workers. The authors also assert that within HMRC there is a questionable link between effort and reward indicating a possible lack of presence of HRM systems needed to support the introduction and implementation of Lean. Of particular interest in this thesis is what effort workers are expected to put in to Lean implementation and what reward (if any) this is linked to.

The assumption drawn from the research of proponents of Lean is that workers work 'smarter not harder' (Womack et al., 1990; Womack & Jones, 2006). That said, Womack and his colleagues have relatively little to say about the effects of the introduction of Lean on physical effort norms, work pace, workloads or stress. These have been key aspects to more recent LPT research where effort have been referred to in the previous section. The impression given by a number of operations management researchers is that workers will work in more clever ways, as opposed to physically harder (Radnor et al., 2006). As Womack et al. (1990) and MacDuffie (1995) appear to equate physical effort and time, this surely only applies in situations where the levels of effort per unit of time is constant.

Thus, proponents assume that effort intensification is not a problem, as activity (or production) is standardised. However, in non-standard contexts it is difficult to apply this logic, as researchers have found out (Waring & Bishop, 2010; Carter et al., 2010). Despite the claims of proponents a number of cases in manufacturing, such as Fucini & Fucini (1990) and Garrahan & Stewart (1992) have identified and stressed the negative aspects of Lean, including significant increases in physical effort required. Nevertheless, what is interesting for this thesis is the idea which has emerged in this section that [certain] employees may chose not to engage with Lean, or to apply extra effort, in order to 'defend' their position and power.

2.4.3 Skills under Lean

The notion of multi-skilling as a vital element of Lean is one advocated by its proponents, and the term itself describes a workforce in which workers possess several skills that allow them to perform different tasks (Wickens, 1986; Womack et al., 1990). Interestingly, the definition of 'skill' as supported by Nissan Motor Manufacturing (UK)

is: “the ability of always performing the operation securely, by the best operation method and the ability to further improve the method” (Garrahan & Stewart, 1992: 60). This definition implies some form of continuous improvement, or development. There is an assumption that as Lean requires certain skills, such a problem solving and decision making, there is a need to provide employees with these.

Skill has, traditionally, determined how control is exercised when discussed in the context of LPT. This can be seen in Section *2.2.2 The Emergence of Mass Production* which explored how Fordist and Taylorist systems are seen to deskill workers in order for management to maintain [direct] control. When management are reliant on the skills of workers, given the nature of production and the skill-content of the work, they have to afford workers a measure of ‘responsible autonomy’ (Freidman, 1977). However, this is lost under Lean in the sense that the work and skill requirements are linked to Lean *systems* of work and defined by the *requirements* of Lean i.e. ‘doing more with less’. This is evidenced through the in-depth ethnographic studies conducted by, for example, Rhinehart et al. (1997), Delibridge (1995) and more recently Carter et al. (2011).

As skill requirements are defined by Lean, it could be argued that Lean shifts control from ‘responsible autonomy’ to ‘controlled participation’, i.e. the managed involvement of workers in the system. This can appear to workers as a form of ‘empowerment’ although in reality is the harnessing of skill for achieving the aims and goals of Lean (Beynon et al., 2002). Therefore Lean determines the *type* of ‘skills’ it requires, due to its nature and philosophy (Carter et al., 2012b), and determines *how* they are deployed. It is, therefore, the worker’s discretion (his or her creative application of practical and cognitive skill) that is lost i.e. the ‘responsible autonomy’ to deploy skill partly on their own terms. Of relevance, at this point, is ‘identity’: if workers derive a sense of meaning from the work they do, the skills they have and the relative self determination this provides, ‘empowerment’ undermines the identity that they derive from their work. This is because they lose control over the aesthetic nature and meaning of work.

Consulting the mainstream literature is also important here, as training is both a characteristic of Lean and multi-skilling more broadly. According to Garrahan & Stewart

(1992) multi-skilling is what training should be aimed at. In the HRM literature, skills training have been linked to the rhetoric of empowerment which is often associated with Lean production: Wickens (1996) argues that this link is a result of higher skill levels and increased participation. Authors such as Gallie et al. (1998) have claimed that the denial of participation to higher skilled workers can lead to de-motivation and a reduction in the quality of work. Generally training in Lean environments is seen to facilitate the generation of the required technical and behavioural skills (Stewart et al., 2010) to participate in decision making (Kenney & Florida, 1993; Womack et al., 1990).

However, a debate emerges regarding the breadth of skills training employees receive under Lean. While there is an assumption that a flexible workforce is a multi-skilled one (Wickens, 1986; Womack et al., 1990) evidence from a number of manufacturing organisations (see, for example, Lewchuk & Robertson, 1996, 1997) and non-manufacturing environments (see, for example, Carter et al., 2011) implies that multi-skilling and skill flexibility have in fact failed to materialize for the majority of workers. It is argued that employees receive only limited, company specific skills training which is neither flexible nor transferable outside the context of their role a given organizational setting (Garrahan & Stewart, 1992; Graham, 1995).

Proponents of Lean argue that job rotation and cross training produce interchangeable skills, thus enabling employees to acquire a wide variety of skills (Womack et al., 1990). Labour process theorists contest this claim. They argue that Lean needs only very limited skill-sets, thus very basic training provision, and therefore offers only limited opportunities for workers to acquire very basic, job or company specific skills. Rhinehart et al. (1997) comments that the ratio of skills to production line workers is kept extremely low in Lean systems with 51% of workers on the line in their case study saw the training they received to be “a waste of time” (p. 41). The reasons for this included a perceived lack of skills development, i.e. a focus on training but not on-going development, thus indicating a lack of opportunity for continuous skills improvement (Garrahan & Stewart, 1992; Graham, 1995) and Kaizen.

Thompson (1983) argues that the deskilling debate is a reflection of the wider debate in LPT about management control as a ‘contested terrain’: the struggle for control.

Similarly, Garrahan & Stewart (1992) consider this issue from two main perspectives: firstly, 'workers are de-skilled' under Lean environments and secondly 'worker skills are under threat'. The authors conclude that it is more realistic to view the skills debate in terms of enhanced control, as in social terms, to management control of knowledge and know-how. As knowledge is one element of skill, and consequently the "employee power on the shop floor" (p. 75), then it is more useful to see skills as being under threat as opposed to employees being deskilled *per se.* This raises the issue of autonomy control, as a consequence.

Autonomy control is measured in terms of task discretion, the pace of the job and the level of supervision (Spenner, 1990). The degree to which an employee has the capacity to undertake their work tasks characterises task discretion. This includes both their capacity to exercise discretion on individual decisions, and the order in which they carry them out. This relates to the capacity that workers have to exercise judgement in their work (Felstead et al., 2004). Autonomy control is also significant in the measurement of skill to the degree that it reflects the pace with which work needs be undertaken (Spenner, 1990). A reduction in the level of discretion that workers can exercise in addition to an increase in work pace would indicate a degree of deskilling.

What is also critically important is the degree to which workers are supervised in their work. It may not necessarily only relate to the way that formal authority structures are used within an organization to limit or reduce control, but may relate to the way that jobs are designed in relation to each other or the way in which technology is used to control work processes (Spenner, 1990). That said, this discussion on autonomy control is not without its critics. For example, Adler (2004) argues that whilst job complexity is an accurate measure of skill, a reliance on autonomy control as a measure of skill fails to capture the ways in which capital will not necessarily use deskilling as a means of control. Autonomy control does, however, raise questions over the issues of work intensification that originate from management control of the labour process in a way that job complexity does not.

Research conducted by Carter et al. (2011: 121) concludes that a "loss of control and discretion" leads to deskilling. The authors also highlight the limited opportunities for

personal development at work, as perceived by workers at HMRC, supporting some of the earlier discussed findings by Graham (1995). However, this is in contrast to, for example, Radnor & Bucci (2007) who claim that prior to the introduction of Lean in HMRC "staff did not always have the required skills to perform" (p. 6) tasks yet post-Lean a number of staff felt they were "provided skills to enable the teams to do the tasks themselves" (p. 30). While this view is not shared by LPT researchers, Radnor & Bucci (ibid: 38) do acknowledge themselves the perception of some staff that the introduction of new processes was seen as deskilling in the sense that "this took away some of their [staff] freedoms" and they "lacked the skills to do all parts of the process" (idem.). This provides some support for Garrahan & Stewart's (1992) earlier conclusion that workers' skills are under threat, as opposed to workers being deskilled.

However, we cannot imply that deskilling is a by-product of Lean implementation, or that it is an outcome in non-manufacturing contexts of the introduction of Lean Thinking. For example, Lindsay et al. (2014) found that deskilling was not evident in their case study of the NHS. Using a methodology which comprised of employee focused in-depth interviews with 36 NHS staff supported by 'complementary key stakeholder' research of 10 interviews, the authors conclude that staff felt a number of benefits after engaging with Lean including the opportunity to collaborate with colleagues. However, closer analysis shows that workers who were more involved with the Lean programme (support and administrative staff) generally felt less of an opportunity to develop their skills than those not directly involved. The former reported a sense of isolation from development opportunities. It is notable that Braverman himself argued that the labour processes of clerical workers were most suited to the rationalisation of Taylorism, perhaps indicating that workers perceive and experience the skills debate differently according to their role and exposure to Lean programmes.

More specifically with regards to training events, Graham (1995) reveals a difference between the rhetoric and reality. Her ethnographic study identified what one worker recalled was "a big difference between what the [training] instructors say…and how it actually is" (p. 58) and that training was often used as a means by which the company attempted to alter employee attitudes and behaviours thus gaining control over workers. Oliver & Wilkinson (1992) offer supporting evidence claiming that training is

often used in manufacturing environments to socialize employees and to encourage acceptance of flexibility as opposed to offering them skills. Within non-manufacturing contexts there is evidence to indicate that training falls short of what is required for the effective implementation of Lean: Baines (2004) suggests that there are often limited opportunities available for staff to participate in training as a result of a lack of resources. This also has a direct effect on interaction opportunities and collaboration with co-workers and supervisors. It is suggested by Pavnaskar et al. (2003) that insufficiency of understanding Lean tools and their utilisation results in misapplications and ineffectiveness. Moreover, the appropriate selection of Lean tools contributes to better waste elimination decisions (Radnor et al., 2006).

In addition Scheeres & Rhodes (2006: 223) indicate that training is often used "suppress employee's dissent and dialogue" and is important as part of both the formal and informal social organisation and labour process. All of the above arguments indicate forms of normative controls, and as Alvesson & Willmott (2002: 8) point out training can be seen as a method of organisational control in which employee resistance "can be rectified". When the training is not seen by employees as being appropriate, useful or fit for purpose (Graham, 1995) then they are likely to see the activity as "as a waste of time" (Beer et al., 1990: 61). Thus, disengagement and resistance are likely to follow.

A question emerges regarding the type, design and focus of training that is required by workers who are expected to implement Lean, and how that might be delivered (indeed whether it is delivered in reality). Allan & Sinha (2013) maintain, based on Radnor & Bucci's (2011) work, that UK universities implementing Lean that have some form of internal training in Lean methodology do not adhere to a common set of training standards when designing their training programmes.

Therefore the author is particularly interested in exploring the type, design and delivery of training and how organisations approach involving staff in continuous improvement through core training in Lean. Lean uses worker skills to solve management problems (Beale, 1994) and, as such, attempts by management to apparently develop greater job complexity are disguised wherein the rhetoric of multi-skilling disguises what is in effect an increase in the number of simplified tasks. Beale (1994) also highlights that the

rhetoric of Lean disguises the way that what are apparently devices to increase job autonomy have in effect the opposite outcome.

2.4.4 From Responsible Autonomy to Controlled Participation

A number of inconsistencies within the literature have been identified so far, with evidence indicating that further exploration and analysis is needed in order to explore the aim and objectives of this thesis. Firstly is the assumption that employees are subject to control under Lean, but this is *not* the same form of control as that under mass production. At the same time, neither is this responsible autonomy that is purported by proponents of Lean.

Moreover, in many cases, control is different in non-manufacturing industries partly as a result of the issues: employees appear more able and willing to resist than in traditional manufacturing settings, although this is through different means (as evidenced through Worthington & Hodgson, 2005). To simply suggest that deskilling is a by-product of Lean misses the point: skills are being narrowed in a controlled manner, thus indicating that [professional] skills such as creativity and free thinking are being restricted and threatened, as opposed to employees being deskilled. This discussion leads the author of this thesis to the notion of 'managed' or 'controlled' participation – the idea that participation in Lean is restricted not by the traditional issues associated with Lean, but by managements' vision of the remit of Lean, and who they want to participate in activities.

Dohse et al. (1985) conclude that Lean is a system that enlists employees in enhanced, controlled participation in order to develop standards. The author of this thesis is particularly interested in one of their findings, as follows:

> Workers are not deprived of responsibility and controlled, but are motivated by management. This is possible in a cooperative management style, in contrast to the antagonistic organizational model pioneered by Ford...[This] represented rather a self-fulfilling prophecy: when their intellectual abilities were underutilized and controlled by management, the workers lost motivation and identification with their work and with the firm.
>
> Doshe et al., 1985: 125

By choosing to term this 'controlled participation' it implies that, while it is different from the traditional LPT perspective of control Lean is a new form of both 'control' and 'empowerment': Lean redefines the 'rules' and seemingly provides management with the upper hand by advocating both control and autonomy under the guise of empowerment, and within the remits set by management.

While orthodox proponents of Lean contend that Lean is an improvement technique, as it relies on workers participating in defining methods trough a system of empowerment' and responsible autonomy, others argue that such a focus on standardization results in a form of "neo-Taylorist regime" (Vidal, 2007: 205) whereby employee participation is in fact tightly controlled (Thomas, 1989; Dohse et al., 1985; Berggren, 1992; Graham, 1995). Adler (1995) terms this 'democratic Taylorism' whereas Klein (1991) refers to it as 'collective autonomy'.

Relating to earlier discussion, a duality of interpretation exists. One the one hand improvements can be made while, at the same time, restricting employee empowerment (Berggren, 1992; Parker & Slaughter, 1995; Lewchuk & Robertson, 1997). Vidal (2007: 225) concludes that Lean is "not necessarily based on work intensification and more limited worker discretion". Thus, controlled participation is defined as follows:

> ...participation [that] occurs in a controlled context in which the topics, goals, and forms of articulation are...limited to company interests. Only under these conditions is the participation of the employees used as a productivity reservoir in Japan. And it is just this context that prohibits us from interpreting the participation of the employees as a creative alternative to Fordism. It simply makes possible the solution of the classic problem of scientific management, namely, how to use the knowledge of the employees for purposes of rationalization.
>
> Dohse et al. 1985: 142

The above discussion illustrates that a certain discourse within the pro-Lean literature is evident such as the terms 'partnership', 'teamwork', 'empowerment' or 'joint decision making' (Wickens, 1986; Womack et al., 1990). Klein's (1989) research offers a different perspective, indicating that the introduction of initiatives such as Lean often result in management assuming traditional styles of managing and leading, with the research emphasizing the development of HR and participation in decision making for staff.

2.4.5 Leadership and Management

The previous sections have, predominantly, adopted a LPT perspective on the implementation of Lean with some acknowledgement of more mainstream, orthodox arguments. However, for the purpose of this research the author has also identified the importance of leadership and management in implementing Lean. The implication from earlier LPT discussion in Section *2.2 History of Work Organisation* is that managers (or leaders) have the opportunity to be in charge of the output and effort of their workers, whether this be for direct control reasons or for responsible autonomy. Thus, an examination of leadership and management will help form an understanding of the application of Lean in non-manufacturing settings and how it influences relationships at work, in addition to the modes of control that have previously been discussed. This section is mainly concerned with a mainstream functionalist argument, which is different from LPT perspectives.

The role of the first-line supervisors in the context of the implementation of Lean production has been a central research issue in some studies (Antoni, 1996; Nilsson, 1996), with the consensus generally being that line managers (LMs) and management exert control in order to increase employee effort (Delbridge, 1995). Changes towards flatter, process-oriented organizations and teamwork, as well as development of integrated information management systems affect roles, work and responsibilities between shop-floor workers and supervisors (Delbridge et al., 2000). Elliot (2001) concludes that being successful with Lean requires an 'institutionalized management proof process', which is sustainable and can meet the changing needs in leadership, strategy, and business conditions. The role of LMs and leaders is important in any organisational change, and Mann (2009) argues that even excellent use of Lean tools will not result in sustainable change or improvement unless it brings about a change in organisational culture. The assumption is that LMs will also be required to exert extra effort themselves and are subject to similar 'rules' and control as workers.

Consequently Lean leadership is defined as the following:

> ...the beliefs, behaviours, and competencies that demonstrate respect for people, motivate people, improve business conditions, minimize or eliminate

> organisational politics, ensure effective utilisation of resources, and eliminate confusion and rework.
>
> Emiliani & Emiliani, 2013: 409

The authors state that leadership, in the context of Lean, is concerned with the ability of a leader to support the flow of information between people and processes. Additionally, they must assume a servant leadership approach in line with the two principles of Lean of continuous improvement and respect for people. In reality, however, LMs are often subject to the same controls as staff (Delbridge, 1995) which can result in exploitation (Graham, 1995).

When discussing a non-production context, Balzer (2010) comments on Lean leadership specifically from the Higher Education perspective by arguing that the ability of leaders to support a Lean initiative is derived from their personal influence. This might be associated with their skills, or experience, and formal organisational authority. Furthermore, Balzer emphasises the importance of the personal commitment of the leader to leading and sustaining Lean transitions (ibid.). A number of other researchers have also claimed that Lean requires a great deal of attention from LMs, as without good leadership reinforcing a new set of values and behaviours people will revert to their old habits. This stance seems to favour the so called top-down approach to change, by highlighting the importance of leadership in sustaining Lean transformations (Dennis, 2006).

Additionally there is a debate within the literature as to what the role of the senior manager is within the Lean process, with the literature referring to 'Lean champions' or 'change agents' when discussing senior management (Womack & Jones, 1996). This individual is personally responsible for leading a Lean change programme (Radnor et al., 2006; Grove et al., 2010; Bhasin, 2012). Consequently, the typical manner of Lean deployment in a number of sectors new to the concept focuses around a central team, the source of Lean knowledge (Womack & Jones, 2003), and usually consists of internal staff tasked with driving and managing Lean initiatives (Radnor & Bucci, 2011). Such a focus on champions as senior leaders constitutes a research loophole requiring further examination in terms of extending the 'championship' concept to a wider group of staff within an organisation.

In order to contribute to the success of Lean, on-going support and commitment from LMs and senior managers is vital (Achanga et al., 2006; Sohal & Egglestone, 1994). Commitment from these levels is seen to foster the supportive culture (Scherrer- Rathje et al., 2009; Worley & Doolen, 2006) required to facilitate Lean, although often LMs have conflicting interests. According to Guth & Macmillan (1986: 313) LMs sometimes view strategic initiatives "with low desirability" and therefore do not always engage with them. From a LPT perspective there is the assumption that such workers try to exert control over their staff in order to gain more effort out of them, however this is based on an assumption that LMs understand the concepts they are dealing with.

Often even senior managers are unclear on the rationale behind implementing a strategic initiative: Beer et al. (1990) discuss how often senior managers tend to hold two perspectives. Firstly, financial resources will automatically improve culture through investment in such activities as training programmes, and secondly employee behaviour is directly related to an organisation's structure; thus changing the structure will change their behaviour. As senior managers are often seen as being the main driving force behind Lean programmes (Sohal & Egglestone, 1994) their attitudes, understanding and perceptions are important (Radnor & Bucci, 2007), and yet existing evidence indicates that in order to do this and to deal with Lean they often revert of negative behaviours and [direct] control, as previously discussed.

The introduction of Lean and the role of management has received mixed views: while Radnor & Bucci (2007: 3) assert the importance of changing the mind-set and behaviours of leaders in order to influence frontline staff to support the new systems, Carter et al. (2012a: 121) claim that in reality managers involved in Lean "can no longer manage effectively" which has led to "a lessening of respect, which is detrimental to staff–management relations…[and] minimal support for continuous improvement" .

Burgess & Radnor (2012) report that senior management commitment, and dedicated champions to lead process improvements, are among the key factors contributing to successful implementation of Lean projects. Based on an extensive literature review, Radnor (2010) further argues that having internal champions, and being able to develop internal support structures, is crucial for achieving sustainability of Lean based

improvements, and argues that there needs to be a strong commitment to these champions reflected in relevant resource commitment that will enable them to lead process improvement initiatives as a dedicated responsibility, and not as an add-on activity.

Overall evidence indicates that the LMs are subject to competing pressures, with Hales (2005) concluding that they are surrounded by a shadow of additional responsibility as a result of the need to translate strategy into operations, and who have narrow spans of control confined largely to operating routines (Scarbrough, 1998). This indicates that while a number of researchers, predominantly writing form a LPT tradition, have less favourable outcomes relating to the role and authority of LMs within Lean, it is important to explore their role and the conflicts that they may experience.

2.4.6 Responses to Lean

Responses to Lean have long since been debated from a LPT perspective, however one of the criticisms of Braverman (1974) is that he fails to give adequate treatment to the workforce's resistance to management attempts to control the labour process (Littler, 1982. If we are to understand how Lean is implemented, managed and experienced, then worker responses under Lean cannot be ignored.

The employment relationship is central to models of work organisation (Boyer & Freyssenet, 2002) with employee relations under 'Fordism' being characterised by adversarial relationships. The focus during this time was on terms and conditions of employment. Boyer & Juillard (2002) point out that this employment compromise was one of the central features of 'Fordism'. Under Lean, some critics argue that the compromise appears rooted in the ways in which management attempts to undermine and challenge the collective voice of the workforce, usually through unwritten rules that employees are expected to adhere to (Graham, 1995). This can manifest itself in resistance from workers.

Employees can either choose to *comply* with newly introduced managerial practices, *consent* to them or *resist* them, although Thompson (1989) indicates that in reality the boundaries between these are somewhat unclear. In terms of this thesis, and

considering the points raised in the previous sections, the author is keen on exploring how employees in non-manufacturing industries view Lean and what their reaction to it is. Moreover, it is argued that 'soft' management strategies are likely to be better for workers by some LPT scholars (for example, Alvessonn & Willmott, 1992) as workers' resistance can be subordinated to changing management strategy by other means. From this perspective, as opposed to advocating 'anti-management' resistance workers instead appeal to the "long term self interest of managers" (Hassard et al., 2001: 349).

There are links here to some of the issues identified in Section *2.4.4 From Responsible Autonomy to Controlled Participation* outlining controlled participation. Writing from a LPT tradition, Buraway (1979) conducted an ethnographic study in order to demonstrate the importance of the organization of consent (i.e. the necessity to provoke a willingness to cooperate in the translation of labour power into labour) in workplace relations, and this can be discussed within the context of Lean. Buraway argued that this complex relationship can best be understood by reflecting upon the manner and nature of the organization of work. He concludes:

> Within the labour process the basis of consent lies in the organization of activities as though they presented the worker with real choices, however narrowly confined those choices might be. It is participation in choosing that generates consent. As long as the application of force is restricted to transgressions of the narrow but specific and recognized limits of choice it too can become the objective of consent. The securing of surplus value must therefore be understood as the result of different combinations of force and consent.
>
> Buraway, 1979: 27

Not only can this be linked back to previously discussed idea of controlled participation, but it indicates that the concepts of consent[6] and resistance are somewhat complicated. It is important to consider that workers may also have limited choices (Thompson, 1989) with regards to consent: this may be due to power inequalities between managers and workers. Employees also have the power to 'misbehave' according to Ackroyd & Thompson (1999), which covers much more than simply resistance.

[6] According to Buraway (1979) 'consent' refers to when workers themselves choose to follow management guidelines or actively exceed the effort bargain when they see that it is in their own interests.

LPT researchers have been keen to examine workers' resistance to management controls as a result of these inherent tensions between management and employees over their labour. Strikes, bargaining or informal group activities (Callaghan & Thompson, 2001; Taylor & Bain, 2003) are likely results of resistance. However, with the decline in trade union density and members, along with their bargaining power (Mason et al., 2003) it could be argued that only individual resistance is possible (Knights & McCabe, 1998). Carter et al. (2012a) use interviews and questionnaires in order to study the Public and Commercial Services Union responses to changes in the labour process of workers in HMRC. They investigate why the union was unable to develop and take effective action against the changes introduced to the labour process and work organisation under Lean, concluding that the union (and workers) felt the need to comply with changes despite originally resisting Lean implementation.

The HMRC example offers us an insight into agency and resistance: despite widespread opposition to the changes, and an 80% union density, Carter et al. (2012a: 430) state that officials and representatives were forced into "a web of cooperation with management" with the consequence being "a mediating role [of the union] during conflict…Collective bargaining and compromise are central to this mediation and the research confirms how desperate officials were to maintain the former even if it meant increasing the extent of the compromise". Ultimately, the unwillingness of union members and activists to resist changes appear to have led to the degradation of work under Lean.

While it may appear that individual resistance practices are somewhat limited in today's workplace, the reality is that many forms of resistance are hidden from view; that is, the so-called panoptic gaze of management (Fleming & Sewell, 2002). Individual level resistance, or the absence of overt (or, to borrow Barker's (1993) term for different purposes, 'concertive resistance') (Worthington 2016: forthcoming) may come in the form of:

(1) The competing interests between employees and management (Waddell & Sohal, 1998). The employment relationship can be viewed as a bargaining problem between various stakeholders with competing interests, such as what

role various people play and what contribution they make to the employment relationship. Those competing interests could be higher wages versus lower labour costs, employment security versus flexibility, and safe workplace versus high output (Clegg, 1974) and are often at the heart of Lean systems;

(2) Denial or refusal to participate in activities (Rumelt, 1995) where some individuals may decline to be involved in changing practices by distancing themselves. This has been seen to result, in some cases, in dismissal;

(3) The perception that things are fine the way they are (Rumelt, 1995; Zeffane, 1996) which is a form of inertia and employees believe that processes and systems work currently. Radnor & Bucci (2010) found this to be present in their study of universities;

(4) Communication barriers and misinterpretation (Hutt et al., 1995). Bouckenooghe (2010) proposes that individual attitudes can influence the individual's support (and thus their behavioural support) for change programmes. Individuals must also be communicated what change is happening and why.

As management shifts towards a particular type of control, such as surveillance or increased performance targets, LPT demonstrates that workers circumvent those controls to a certain extent, such as misrepresenting their actions to managers and technology (Callaghan & Thompson 2001). Expanding on Bouckenooghe's (2010) idea that individual attitudes are important in resisting or consenting to change, it is worthwhile considering the identity and subjectivity argument here.

The subjectivity argument is concerned with professionals who ask the question "*who am I, and what do I do?*", and is explored in more detail in the next section. Knights & Willmott (1997) argue that this is an attachment to identity and draws heavily on Giddens (1991) who talks of the ontology of subjectivity, where professionals develop an attachment to their work. When their sense of identity and reality is disrupted, in this case Lean is implemented, the result can be what Giddens refers to as 'ontological insecurity'. Professionals become upset with any changes and refuse to engage in activities, manifesting in employees defending frontiers of control and resistance.

In contrast, Solow (2008) suggests low-waged workers typically have limited options for resistance to deteriorating terms and conditions due to them being, typically, easily replaced by their employers. Professionals who are highly knowledgeable and skilled are more likely to resist as a result of their socio-economic position (Grugulis, 2007) and, invariably, less limited employment options.

In some sectors, such as Higher Education, the introduction of Lean-like initiatives has resulted in the previous dominant institutional logic of academic professionalism now being strongly challenged by managerialism. Reay & Hinings (2005, 2009) describe how professionalism and managerialism have clashed at institutional level: where professionalism denotes the tacit, self-regulated, autonomous and practical work of professionals, managerialism denotes the belief that all organisations can be optimised using generic methods of management skills and theory. As Lean could be considered a generic model, in this sense, this raises important questions for this research around professionals, work and organisations as well as their agency and resistance.

According to Ferlie & Geraghty (2005: 428) universities are different from commercial and other public organisations because they "produce knowledge rather than goods or service" and Chandler et al. (2002: 1065) claim that any innovations in the UK higher education sector is likely to "raise awkward questions about life in English universities today which many senior academics and administrators would likely find uncomfortable". In additional to this there is a feeling in the UK that academic freedom is in retreat and that 'marketization' and 'managerialism' are creating a form of institution that suffers from a sense of organisational schizophrenia that has the potential to result in division and tensions between academic and non-academic or support staff. Lane (1997) also indicates that in order to gain the buy-in of academics and reduce resistance it is important to approach change on an incremental basis as opposed to a transformational one. Within this study, therefore, it the author will need to establish what approach to Lean the organisations are taking, i.e. transformational or incremental changes.

It has been argued that in reaction to the introduction of control-orientated management programmes, many workers have been demonstrating resistance

(Ezzamel et al., 2004; Worthington & Hodgson, 2005; McGivern & Ferlie, 2007). This has led to a number of researchers, specifically studying power, to talk of "audit rituals as a ritualistic defence to being audited...while continuing to perform as usual" (Heldal, 2015: 4). McGivern & Ferlie (2007) refer to this as 'playing tick box games' whereby professionals are seen to engage, only for the reason to satisfy control systems. Reay & Hinings (2005) conclude that such workers may give up a short term battle, but never the long term fight.

Additionally, Worthington & Hodgson (2005) propose that some professionals are involved in what they term 'peer exploitation'. This is where some academics in their study resisted newly imposed quality initiatives by avoiding responsibility or involvement in or for the programme. At the same time, they designated one of their colleagues to do the job by "extracting and using the labour of others" (p. 107) in a bid to distance themselves from the initiative. This distancing could be seen as a form of covert resistance. Although employees can comply, consent or resist Lean Thompson (1989) also points out that the boundaries between these responses may be fuzzy.

Professional norms may also dictate appropriate controls and educators' responses to those controls, however Mather et al. (2005) demonstrate that as education becomes more profit orientated (and more Lean-like), the labour process of lecturers converges with that of workers in the private sector, thus blurring the lines. In Canada, Baines (2006) applies LPT to social care and explores how this public sector work has become privatised in nature, focusing on costs rather than care provision and implementing control strategies of standardization and deskilling accordingly. Baines (idem.) also describes workers' resistance to these changes while also highlighting that care ideals constrain their ability to undertake traditional resistance activities and often results in staff exceeding their contractual effort bargain. Arguably this proposition could be applied to any worker who is in a similar context, and who has a strong sense of self-identity.

While resistance is sometimes cited as a main cause for the lack of compliance with Lean, Dent et al. (1999: 28) conclude a number of additional reasons for failure including (1) misunderstanding of the concept by employees; (2) emotional side effects

such as emotional labour; (3) lack of trust from workers; (4) personality conflicts; and (5) workgroup breakup.

Additionally, terms and conditions are likely to be a cause of resistance according to Thompson (1989) with collective action being the outcome, in the form of trade union action such as strikes or bargaining, as well as informal group activities (Callaghan & Thompson, 2001; Taylor & Bain 2003). However, with the decline in trade union membership and bargaining power (Mason et al., 2008) Knights & McCabe (1998) argue that only individual resistance is possible and this too is limited. Although it may appear that resistance practices are limited it is important to remember that not all activities are as overt as striking, and many forms of resistance are hidden from the view of management (Fleming & Sewell, 2002).

2.4.7 Subjectivity and Self-identity as a Barrier to Lean

The concept of 'direct control' and 'responsible autonomy' by Freidman (1977) has been discussed throughout this chapter, but it is interesting to raise the point that while the premise of this model appears to work in manufacturing based settings this thesis seeks to explore the experiences of workers in professional industries which that are not characterised by interchangeable parts, but intangible knowledge. So far, the evidence has indicated that workers can feel, under Lean, that autonomy is being challenged (Taylor & Bains, 2001) and as a result their narrative is being threatened (Willmott, 2007).

Grugulis (2007: 75) indicates that as knowledge workers enjoy "special privileges", they are less likely to experience the effects of Lean. They are likely to see autonomy as a self-evident value (Giddens, 1984), and this is important for this study because it is argued that the result could be emotional dissonance. Emotional dissonance is described by Jansz & Timmers (2002: 80) as "a feeling of unease that occurs when someone evaluates an emotional experience as a threat to his or her identity".

Context must be taken into consideration when understanding emotional dissonance: for example, the introduction of a "proliferating culture of audit, accountability and performativity" (Knights & Clarke, 2013: 336) within Higher Education has been seen

by some as a threat to roles, which Gabriel (2010) argues are idealized by certain expectations of what it is to be an academic. These may include originality, scholarly activity and the need to be pedagogically skilful. These issues are not excusive to professionals (or academics), however; both Collinson (1992) and Nichols & Beyon (1977) have explored the workplace and illustrated how management control has rendered the lives and identities of shop floor workers permanently insecure.

As Jansz & Timmers (2002) point out, this was then triggers reflections such as "Who am I?" and where the "emotional experience is evaluated with respect to aspects of identity that are salient in the situation under scrutiny" (p.83). This is discussed by Willmott (1997) who talks of workers who have invested in and subscribe to a particular ideology who may resist based on their political and ideological values. This subjectivity is "embedded within particular conditions and power relations" (Collinson, 1994: 53). Buroway (1979) claims that the interests of both capital and labour are determined by where a person sits within the structure of an organisation, and the political and ideological views that they have as a result.

According to Giddens (1991: 54) a person's identity cannot "be found in behaviour...but in the capacity to keep a particular narrative going". While some researchers have incorporated professionals in their dataset when exploring Lean (such as Waring & Bishop, 2010), there are no studies available to the authors' knowledge which primarily focus on this issue. It does become apparent that as more organisations are choosing to apply Lean, an exploration is required of individuals who have a strong sense of identity and how they respond to Lean.

Questions have been raised over whether Lean can be transferred to environments where the strength of professional and self-identity could (potentially) act as a form of resistance (Waring & Bishop, 2010). Giddens (1991: 54) talks of workers who retain a significant amount of discretion and distance from managerial control: these individuals engage in diverse forms resistance that enables them to "keep a particular narrative [of self] going". This narrative rests on the possession of superior knowledge and understanding, and by preserving this workers can outwit and outsmart management efforts to control their work and the labour process.

The perceived degradation of self-identity is described by Willmott (2004), which goes beyond the simply breaches of control and established effort-bargain between management and workers. This not only contributes to resistance, but also results in management being unable to confront such behaviour - certainly in the long term. This resistance is difficult to manage, largely because it is at a distance (Collinson, 1992), unorganized and akin to 'misbehaviour' (Ackroyd & Thompson, 1999). Interestingly, such resistance appears to be lacking in any apparent overall aim or objectives.

The notion of 'misbehaviour' has been mentioned in the previous section, and Ackroyd & Thompson (1999: 1-2) use the term to describe workers who are 'mischievous' and oppose management initiatives. This can manifest itself a range of behaviours from "failure to work very hard or conscientiously, through not working at all, deliberate output restriction, practical joking, pilferage, sabotage and sexual misconduct". In summary, all the things that employees are not supposed to do. Such individuals take the position of managerial authority and undermine it by acting recalcitrant in order to recover authority at work.

Due to strength of self-identity, it might be proposed that professionals resort to this form of (mis)behaviour as a response to Lean – the negative emotions that Hochschild (1990) and Jansz & Timmers (2002) talk of. As Thomas & Davies (2005: 700) conclude, professionals are "not passive recipients of discourses". As Puxty et al. (1987) and Worthington & Hodgson (2005) point out, those who resist quality-based initiatives are seen by management as being ageist, undesirable to the organisation or incapable of making the necessary changes to their work. When an organisation's processes and product are build on professions, questions are raised over how management may respond to such resistance.

Giddens (1984: 154) contends that individuals will conform at work, "usually as a trade-off for rewards that derive from being freed from such discipline at other times", and surmised that control in less regulated organisations is much more subtle by making use of methods to produce collaboration and compliance as opposed to coercive control. Building on previous discussion in this section Giddens' (1991) conceptualises self-identity as an organized narrative, derived from participation in competing discourses

and various experiences that is productive of a degree of existential continuity and security:

> Self-identity is not a distinctive trait, or even a collection of traits, possessed by the individual. It is the self as reflexively understood by the person ... self-identity is continuity (across time and space) as interpreted reflexively by the agent.
>
> Giddens (1991: 53).

Individuals acquire both new skills within roles and occupations, and adopt new social norms that determine how they conduct themselves (Van Maanen & Schein, 1979). As groups acquire discourses and ways of working they form an 'identity' (Gee et al., 1996). Kogan (2000: 210) adds to this indicating that professional identity is characterised by embedded individuals who are members of communities and institutions that have their own conceptual structures, histories, traditions, myths and achieved goals. Professionals have clear roles which are determined by these communities and institutions of which they are a member, thus indicating that the concept of identity is both individual and social. When their status quo is threatened, ontological insecurity sets in.

Ezzamel et al. (2001) speak of how employees with a high degree of self-identify 'jealously guard' their own knowledge and autonomy from control and the effort bargain. Reay & Hining (2005) refer to this as a 'battlefield' between competing logics. This can also be understood from the perspective of the struggle for control over the knowledge process and ways in which knowledge is governed (Nicolini et al., 2008).

While a number of recent studies on Lean Thinking have extended into professional occupations, Hanlon (2007) asserts that groups of professionals, in both the public and private sectors, have experienced pressures that have altered the way in which they do work; private sector professionals are required to embrace commercialised or entrepreneurial professionalism, while public sector professionals are constantly told to act like they are in the private sector. The implication is that private sector models are universal and can be applied, whereby management seek to make such high skilled labour into the 'production slaves' highlighted by Marx (1988 cited in Hanlon, 2007: 271).

Worthington & Hodgson (2005: 108) conclude their research by suggesting that academics (in their case) often exploited each other in order to avoid engaging with concepts that were seen as "Tayloristic work practices of a newly global education market". What is clear is that a different response, and form of resistance, is demonstrated by individuals who legitimately have the ability to escape management control (Willmott, 1995).

A further implication of the above argument is that is what Hanlon (2007) refers to as capitalisms' contradictory reliance on driving down human resource costs. Hanlon examines the state of professions (broadly) and discusses the quantification of performance, among other aspects. By drawing on Marxist debates, the author examined the labour process and the contradictions associated with freedom and control. Comparisons here can be drawn between these debates, focussing on professionals, and the recent debates within the Lean field of the quantification of performance, and erosion of freedom under Lean systems.

Grugulis (2007) argued that while knowledge workers are often the key to their organisations, this does not necessarily mean they are not controlled. These individuals are likely to experience normative control (Etzioni, 1961), "a moral orientation to the organisation so that employees do what will benefit the firm" (Grugulis, 2007: 72). This is not coercion, but a level of conformity within freedom which is offset again social and cultural norms. This clash of ideologies (autonomy versus control) at institutional level manifests itself between managers and professionals (Heldal, 2015). Given this debate, the indication is that such individuals are not as likely to embrace Lean as their non-professional colleagues, and where they do they are likely to display a different response or resistance (Waring & Bishop, 2010).

Thomas & Davies (2005) conducted extensive research on professionals within with public sector, the backdrop of which had been the introduction of new ways of managing staff such as Lean Thinking and other new public management initiatives. Following the collection of 105 in depth interviews, they conclude that professionals in their study exploit the lack of clear understanding and conceptual clarity of new initiatives. This often manifests itself as a form of resistance, whereby they often

exercise the power that they assume (with their identity) in order to position themselves in a way in which they can choose not to engage with initiatives.

This type of resistance, claim Thomas & Davies (2005) results in low levels of disturbance for organisations, as well as leading to destabilising, weakening and incoherence of dominant discourses, such as Lean. This is in contrast to the likes of Powers (1997) and Townley (2002) who found that professionals both continued to perform as normal, even during change, but overly fought to maintain the old logic. In turn this then creates opportunities for such workers to exploit the system.

The key questions that this debate raises include: are these workers are compliant with political pressures? or are they being incorporated and consumed by them? The author of this thesis is particularly interested in explore how workers with a stronger sense of self-identity experience Lean Thinking, and whether the resistance is active or more passive as indicated here. More importantly it will be interesting to explore whether professionals consent to Lean Thinking, or whether they use their organisational knowledge, power and control (Grugulis, 2007) to resist it.

2.5 Lean as Universally Applicable

> We believe that the fundamental ideas of Lean production are universally applicable *anywhere* by *anyone*…
>
> Womack et al. 1990: 9, emphasis added

Lean has been transferred to a range of different industries, with Womack et al. (1990) indicating that the basic ideas of work organisation under Lean are applicable to all industries. Based on some of the previous discussion, however, this may be more difficult to achieve in sectors that do not demonstrate a tangible element and there is a strong sense of self-identity. It is proposed that some organisations cannot implement Lean fully, both in terms of level and width of implementation. This may be because of a number of underlying reasons such as lack of resource capability, or Lean understanding. Notwithstanding these reasons for the inability to fully implement, the central question remains: can Lean be transferred to every organisation? Even organisations where there is little standardisation and an intangible service or good?

There may be limitations to the universality of Lean (Pettersen, 2009) and this would help explain why Lean is not uniformly applied across industries, not even in Japan. Instead it is typically implemented and employed piecemeal. Similarly, Keys & Miller (1984) and later Cooney (2002), argue that the possibility to become Lean (through JIT in particular) is highly dependent upon business conditions that are not always met, thus limiting the universality of the concept. The argument goes that, contrary to the evangelical stance of Womack et al. (1990), true or full Lean producers are primarily, if not exclusively, confined to the automobile industry. This furthers the need for an understanding of necessary elements and fit for a successful Lean implementation.

Observations have been made of Lean application in service environments such as in hospitals, administration and in service organizations (Swank, 2003; Piercy & Rich, 2009). Although Hensel et al. (2008) argue that implementation of Lean is challenging due to three main factors: high variability, volatile demand, and dependence on a highly skilled and motivated workforce. Of the existing evidence available in non-manufacturing organisations there is the indication of a degree of sector generalisability. Although, even taking into account the context, considerations need to be made with regards to practices and their implementation type.

As the large majority of Lean research has been conducted within a manufacturing context it is sometimes presumed that Lean is only applicable to large volume processes, whereas Hines et al. (2004) suggests this is a misperception as a result of a lack of contingent thinking by previous researchers with those implementing Lean often failing to take into consideration such contingent factors as "size, industrial sector, industrial dynamics and technology employed" (p. 998). Historically there has been extensive discussion on whether Japanese management principles *per se* can be transferred to other national contexts (Appelbaum & Batt, 1994; Berggren, 1992; Mair, 1998; Morris, et al., 1998; Oliver, Delbridge, & Lowe, 1998).
Lillrank (1995) argues that the transfer of key components of Lean did not succeed in the 1980's as a result of a lack of understanding of what they meant; therefore they were implemented under a different management paradigm. This arguments runs in line with earlier discussions in the chapter on the problems linked to a lack of clear understanding of the definition of Lean. This section explores how Lean has been

implemented beyond the manufacturing environment, and in what ways Lean is conceptualised within those contexts. Specifically a distinction is made between 'real' and 'fake' Lean, before a consideration of what role Human Resource Management (HRM) plays in implementation.

2.5.1 Looking Beyond Manufacturing

The abundance of existing literature on Lean in multiple settings surely indicates that Lean is transferrable beyond manufacturing. Despite this, it is argued that lack of a generally accepted definition of Lean has led to misperception and unclear boundaries with other management concepts (Hines et al., 2004). Emiliani & Stec (2005: 370) list various 'labels' associated with the concept (for example, TPS, Lean Manufacturing, Lean Production or Lean Management System) which highlights the difficulty in promoting the concept. It would appear that few organizations fully understand the philosophy behind Lean techniques (Baker, 2002) and that while a number of companies outside manufacturing apply Lean, many managers have wrongly applied isolated techniques without understanding the whole system (Radnor et al., 2006).

Lean implementation research in non-manufacturing organisational contexts is in relatively early stages compared to those in manufacturing or specific areas of the public sector such as the NHS (Antony, 2012). Although in recent years a number of articles have emerged on the topic of Lean in 'unusual' contexts it is argued that the understanding of the concept is somewhat limited (Thirkell & Ashman, 2014). Dahlgaard & Østergaard (2000) conclude that there is considerable variation regarding how employees in non-manufacturing organisations define Lean; while most of them referred to the Lean methods of root cause analysis and employee empowerment, the Lean principles of value, value stream and flow (Womack & Jones, 2003) are only noted indirectly.

Therefore it is not surprising that organisations adopting a holistic approach to Lean are much less common than those applying it at a local level to solve immediate problems, or as one off initiatives in a project based approach (Radnor & Bucci, 2011). Bendell (2006) concludes that organisations must approach Lean implementation with a focus primarily upon the issues that the organisation is facing and its nature, in addition to

what the organisation itself aspires to be. Thus, Lean should 'fit' the needs of the organisation rather than necessarily be transferred as a best practice. This perspective highlights the growing political and economic pressure on some sectors, which have historically been resistant to change programmes, to significantly lower the cost of their operations and therefore ease the burden on finances has resulted in a fundamental misunderstanding of basic Lean principles (Radnor & Osborne, 2013).

It is disputed that the Lean concept which focuses on cost-cutting and job cuts cannot be considered as the 'Real Lean' (Radnor, 2011; Emiliani, 2011), and consequently it is argued that Lean, when applied properly, focuses on delivering the right value for the customers (Womack & Jones, 1996) thus enabling organisations to 'manage with less' (Radnor, 2011). Moreover, Pavnaskar et al. (2003) conducted comprehensive research to establish what tools or metrics should be used: their conclusions are that understanding the tools, identifying the nature of waste and the appropriate location of application in the organization are all problematic. This research was conducted in manufacturing environments, therefore if such difficulties exist with regards to transfer within the same sector, we could propose that the difficulties are multiplied when looking at transferring Lean beyond manufacturing. As Cooney (2002: 1145) claims: "Lean production provides only a partial model" for manufacturing and thus "...its claims of universality are questioned".

A lack of evidence of Lean in contexts outside manufacturing or tangible service may be due to two possible reasons, although they are not mutually exclusive. The first is that Lean principles that may be effective in a manufacturing context will not work for non-production industries and service delivery. The second possible reason is that organisations that are trying to implement Lean Thinking are not engaging the authentic Womack et al. (1990) version, but some sort of partial or ersatz variety. Radnor & Osborne (2013) argue that this is the reason why some of the application in the UK of Lean principles is failing to achieve the desired outcomes, rather than any fundamental flaw in the Lean philosophy or its transferability. In a similar vein, Emiliani (2011) asserts that in US organisations the preference has been for 'fake Lean', which leads him to argue that 'no Lean' is better than 'fake Lean'. Moreover, within existing literature outside automotive manufacturing there appears to be evidence to indicate

that employees refer more to Lean methods within these contexts when defining and understanding Lean, i.e. *how* Lean should be applied, rather than Lean principles, i.e. *what* Lean prescribes organisations to do (Dahlgaard & Østergaard 2000). Peterson (2009) concludes that organisations must be clear what they are referring to when considering Lean, and take into consideration contextual factors when defining it.

The prognosis for the transferability of Lean to the uncharacteristic UK contexts does not appear good. For instance, one of the more extensive studies of the application of Lean in the UK, at HMRC concludes that "the introduction of Lean into HMRC is a backward step" and that only a tiny fraction of those interviewed "wanted Lean to continue in its present form" (Carter et al., 2012a: 121). HMRC was one of the first government departments to introduce Lean Thinking. On one level, the techniques and tools used to implement and develop Lean within HRMC were similar to other industrial sectors. There were three strategic aims: the redesign of service delivery to eliminate waste and variability as a means to improve productivity and quality; the restructuring of management organization to sustain work changes; and the development of a culture of change to allow all staff to support new work systems and deliver continuous improvement (Radnor, 2010). The achievement of these aims would be underpinned by the strategic dimension to Lean (Hines et al., 2004). However, Radnor (2010: 424) argues that in common with many public sector bodies, HMRC only "adapted" rather than "adopted" Lean working. From this perspective, organizational failures in HMRC related to the way Lean was implemented rather than any underlying flaws Lean had as a model of work organization.

The outcome from an HRM perspective, it is claimed, was increasing absenteeism and stress and deterioration in the quality of working life. While the HMRC example arguably provides the best example to date of Lean being implemented as close as possible to the original philosophy (Radnor & Boaden, 2008: 2), Carter et al. (2013) still argue that it is not 'Lean'. Instead they argue it is:

> …idealized in theory while being implemented according to local contingencies… [Resulting in]…explicit performance metrics which are output-driven can be seen with hourly monitoring of work activities; 'hands-on' management styles are evident with enhanced supervision; and the stress on greater labour discipline…

Carter et al., 2013: 95

Within healthcare there are a number of studies that have claimed Lean has been successful. Authors such as Decker & Stead (2008), Fillingham (2007) and Kollberg et al. (2007) have extensively researched Lean in healthcare, all indicating that while change takes time due to the strong culture in place, a number of quantitative and measurable improvements can be seen, such as improved patient flow. Kollberg et al. (2007) are cautious in their conclusions suggesting that, while Lean Thinking is applicable, it must be integrated and balanced with other systems and processes in order to be effective. That is to say there must be full, system-wide implementation - an aspect that Burgess & Radnor (2013) claim fails to be implemented when transferring beyond manufacturing.

Both Achange et al. (2006) and de Souza (2009) argue that context is important when transferring outside manufacturing. The latter identifies three criteria which organisations must fulfil in order to implement Lean: (1) organisations must offer standard goods or services; (2) organisations must have relatively high volume although not mass production; and (3) organisations must be characterised by having relatively long product life-cycles without major changes that affect production routings (James-Moore & Gibbons, 1997). The question remains, however, when organisations who cannot fulfil these criteria embark on their Lean journey - are they doing Lean? (Hensel et al., 2008).

A distinction here can be made between the operational (micro) level outcomes, which are represented by the manufacturing-like, managerial and support case studies and the strategic (meso) level outcomes which tend to focus on the financial health of the organisation and potential outcomes to be evaluated are financial gains and staff morale and involvement. Thus, James-Moore & Gibbons (1997) conclude that due to 'product derived unique characteristics' of some organisational contexts, transferring Lean beyond manufacturing to organisations producing low-volume, highly differentiated products with low repeatability is difficult. Their research indicates that where these unique characteristics exist, there will be a certain amount of modification required or even a fundamentally different approach to Lean is needed. There are links here to earlier discussion on the development of modes of work organisation, and how they evolve within a specific context. Lean appears to be no different.

The work that has been conducted in the UK in non-manufacturing organisations is probably best described as guardedly positive, although the evidence base is still relatively small and there is a significant element of scepticism. For instance, Hines & Lethbridge (2008) claim that Lean Thinking is transferable to non-manufacturing or production organisations (using Higher Education as their case study) but then inject some caution with the qualification that those organisations have difficulty in coming to terms with the Lean concept and difficulty in defining their 'customer'. Radnor & Bucci (2011) suggest there are signs of a culture change taking place in the five UK universities of their study for the Association of Business Schools and judged that Lean was seen as successful in four of them. Their assessment, however, is based on respondent perceptions of success alone rather than any measured outcomes.

Additionally, a variety of current research on Lean supports the claim that the methodology can improve the quality, while lowering the cost and throughput time, and increasingly lead to better staff morale and customer satisfaction (Radnor & Osborne, 2013), while Swank (2003) argues that Lean can benefit organisations regardless of size or sector. This is because Lean is about improving processes, once again implying universal applicability (Womack & Jones, 1996; 2003).

A recent trend has been the introduction of Lean Thinking to Higher Education (HE), although as yet this has not been subject to rigorous academic debate. Yorkstone (2014) asserts that Lean implementation in this sector is growing at an alarming rate. The claim is that Lean results in improvements to administration (supported by Radnor & Bucci, 2011), however, a closer inspection of the evidence available indicates that applying Lean principles to the core business of learning, teaching and research are more rare. Perhaps this is because of the uniqueness of the area (Yorkstone, 2014). Within this context, the universality of the Lean concept can only be rested if and when the areas of learning, teaching and research are tackled (Yorkstone, 2013). Unless organisations are showing *how* they transform their core 'products' then it is not possible to support the claims of Womack & Jones (2006) regarding universality.

While generally acknowledging that Lean Thinking can be applied as a management philosophy, the conclusions of Carter et al. (2013), drawn from statistical measures and

workers' accounts and reflection, are important to the debates that emerge throughout this chapter:

> The experiences of post-Lean work and occupational ill-health were seamlessly entwined in their narratives. No amount of cultural or normative cladding can conceal Lean's true intent from its worker objects…Given that Lean is permeating central government, local government, the NHS and higher education (Melo et al., 2010; Radnor, 2010) in the context of austerity budgets, the work intensification and ill-health consequences evident at HMRC portend widespread employee experience.
>
> Carter et al., 2013: 18

The existing evidence indicates that the impact of Lean, regardless of organizational setting, can be one of labour commodification and subordination leading to tensions within the labour process and the acknowledgement of a Taylorised work regime. Regardless of context the evidence would suggest that the differences between the labour processes and working conditions results in similar patterns of degradation of work (Carter et al., 2010). More importantly, with regards to professionals, if Lean is to work it needs to be a cooperative bottom-up approach which involves subtle changes in social practice over time through interaction (Waring & Bishop, 2010).

Nevertheless, authors generally temper their optimism when acknowledging that numerous challenges face Lean implementation in non-production UK settings including: lack of accountability, ownership of change, and commitment from staff; inadequate resources and training; as well as resistance from professional employees and managers. It is argued that in contrast with the manufacturing environment, where the outcomes from implementing Lean are relatively easy to measure, the evidence of tangible gains from Lean non-manufacturing sectors such as in the public sector is not as strong, and very often focuses on improved service quality and dependability, as well as cost, time and space efficiencies (Radnor & Boaden, 2008; Yorkstone, 2014). The authors also claim that key intangible benefits reported in the public sector involve a rise in employee motivation, better understanding of customers and collaboration across team boundaries, which is somewhat in contrast to a wide range of research criticising the management of people and the labour process involved in Lean in such sectors (Carter et al., 2012a, 2012b, 2013).

2.5.2 "Real Lean" and "Fake Lean"

As a result of some of the issues noted above, a debate begins to emerge over how we can conceptualise Lean in these contexts beyond manufacturing. To help with this Emiliani (2011, 2013) posits the concept of 'Real Lean' and 'Fake Lean' in order to help identify and differentiate approaches outside manufacturing. 'Real Lean' incorporates two key fundamentals derived from the TPS of continuous improvement and respect for people. It is important to note that the need for a balance between the two was previously highlighted by the originator of the TPS (Ohno, 1988), and consequently Emiliani & Emiliani (2013) maintain that Lean methodology which focuses solely on the continuous improvement aspect of Lean, ignoring the second fundamental of respect for people, symbolises 'Fake Lean'. This, they argue, is not sustainable as a result of unbalanced outcomes, where workers feel harmed by change.

This visualisation can be compared with other authors and how they perceive Lean (see Table 1) with a difference emerging between what the authors believe is 'more Lean-like' and what they see is 'less Lean-like'. The table illustrates, through an extensive analysis of the literature, that there are a number of different ways in which authors conceptualise Lean. While the table is not a direct comparison, it does help to visualise the differences within the literature and help understand what Lean might look like, especially in contexts beyond manufacturing. The author is keen to establish, through the data collection, which approach the case organisations in this thesis will be using, as this will provide a good analysis tool to help conceptualise the approaches being taken.

Table 1 Conceptualising Lean through Terminology

Author	Most Lean-like	Least Lean-like
Emiliani (2012)	Real Lean	Fake Lean
Radnor et al. (2006)	Full Implementation	Kaizen Type Implementation
Hines et al. (2004)	Strategic	Operational
Shah et al. (2008)	Philosophical process	Practical
Bhasin & Burcher (2006)	Philosophy-based	Tools-based

Source: Compiled by author

The idea of creating 'degrees of Leanness' is not new and a number of authors have already tried to establish this through quantitative means. Moreover, most authors who use such a classification base their findings on (mainly) manufacturing case studies (see, for example, Bayou & de Korvin, 2008) therefore there are questions over whether such visualisations are useful for non-manufacturing organisations. However, they do help provide an understanding of what Lean *should* look like, which can be compared to what Lean *does* look like for workers. The term 'leanness' is interpreted differently throughout the literature; Comm & Mathaisel (2000) describe leanness as a relative measure for whether a company is Lean or not. Soriano-Meier & Forrester (2002) evaluate the degree of leanness of manufacturing firms using nine variables suggested by Karlsson & Ahlstrom (1996) whereas Radnor & Boaden (2008) put forward several interpretations of leanness, including an ideal state of Lean, a context-dependent process, an ideal to be pursued, a condition of being Lean and a journey.

This distinction is somewhat similar to that proposed by Radnor et al. (2006: 19) who distinguish between the 'kaizen type', 'piecemeal' or 'non-embedded' approach and the 'full implementation' approach. The former refers to smaller scale implementations on specific processes on a one-off basis. This is more likely in non-manufacturing environments and creates an interconnectedness of systems that makes total system overhaul very difficult. A lack of system-wide approach, functional silos, a lack of customer focus, and leadership issues are among the key barriers to successful Lean implementation (Radnor & Boaden, 2008) and have been highlighted as being issues when implementing Lean Thinking in unique environments, thus resulting in what appears to be 'Fake Lean' (Emiliani, 2012).

Furthermore, Radnor et al. (2006) highlight that Lean is most suited for organisations with high volume repeatable tasks, and those with flatter management structures allowing for staff empowerment and engagement, which could question its effectiveness in highly bureaucratised management structures characterising healthcare, education and other state-provided services, as well as the private sector who demonstrate similar characteristics. This raises questions over whether such organisations can ever achieve 'Real Lean' status. Such a distinction between approaches detracts from the claims of universality, and leaving aside the question as to whether it is appropriate to treat

services such as healthcare or education as if they are tangible goods like automobiles (Radnor & Osborne, 2013). Given these assumptions it is easy to envisage that there may be more challenges, problems and resistance than Womack and his like anticipate.

This type of approach mentioned above indicates a focus on continuous improvement events (Kaizen) in order to provide ways of improving by breaking problems down into smaller chunks and deliver quick and visible wins. We could therefore say that this approach is similar to that previously described by Emiliani (2012) as 'Fake Lean' as it fails to take into consideration the people issues. Non-manufacturing contexts, it is proposed, are more likely to adopt a kaizen type approach to implementation according to Radnor et al. (2006) and Radnor & Osborne (2013). This piecemeal approach to implementation uses a limited range of Lean tools to make rapid changes to small, targeted areas of a process. While these should be used in conjunction with an organisation wide approach to implementation, in reality they are often used tactically to bring about change in problem areas thus bringing shorter term outcomes at the expense of longer term wins.

In contrast, full implementation is described by Radnor et al. (2006) as being when organisations fully embed the philosophy holistically across the organisation. This results in a culture change and can be compared to the construct of 'Real Lean' as discussed by Emiliani (2012). The author of this thesis is particularly interested in exploring which type of implementation is used in non-manufacturing and non-transactional service settings, and to what extent workers have experienced both continuous improvement activities and the respect for people elements. Recently Radnor & Osborne (2013) asserted that unless organisations change their approach to become more 'Real Lean' then they are at risk of failure both in terms of productivity and efficiency, and their people management.

Taking an alternative perspective, Baxter & Hirschauser (2004) conclude that a degree of 'superficiality' sometimes exists when implementing performance improvement programmes, such as Lean. This is where organisations attempt to implement initiatives, yet the tools and activities used to do so are superficial and trivial. Ultimately this leads to outsiders being convinced organisations are competent in the approach, by

creating an impression they are doing so. Baxter & Hirschauser (2004) call these organisations 'pink factories'. While their research was conducted in the manufacturing sector this could potentially apply in other settings.

Following an extensive literature review Radnor & Osborne (2013) attempt to list the some set of key challenges to Lean implementation and conclude that an overreliance on Lean training events is among the key issues where organisations are focusing on a tool-based approach to Lean implementation, also referred to as 'Fake Lean', over that of cultural change. The authors state that although Lean training events are favoured by staff as tools that seemingly provide a quick return on time and effort investment (Radnor & Walley, 2008) however they have a tendency to ignore the long-term problems by focusing on short-term gains (Radnor & Osborne, 2013).

Therefore within the existing literature there is a proposition that can be developed which implies that organisations in contexts other than manufacturing are more likely to implement a piecemeal approach as a result of a number of perceived barriers and challenges facing them.

2.5.3 Lean Thinking and HRM: Integration and Implementation

If a HR system is understood to be a "set of distinct but interrelated activities, functions, and processes that are directed at attracting, developing, and maintaining a firm's human resources" (Lado & Wilson, 1994: 701) then it is apparent that HRM will have a central role if Lean Thinking is to be implemented in a way that is consistent with an organisation's goals. Importantly, HRM will have an impact on the labour process if organisations are to expect workers to give more to their effort bargain, perhaps through systems linked to performance management. Accordingly, employees' attitudes and behaviours act as key mediating variables through which HRM influences performance outcomes (Wright et al., 1994; Boxall, 1996). Bowen & Ostroff (2004) argue that HR systems have a signalling function that allow employees to form a shared sense of the behaviours that are expected, supported and rewarded by management, thereby promoting constructive employee attitudes to Lean that are consistent with organisational goals. Furthermore, there is reason to assume HR involvement and visibility connected with the conveyance of consistent messages and organisational

justice will also impact upon the successful delivery and maintenance of Lean principles (Tracey & Flinchbaugh, 2006a; Tracey & Flinchbaugh, 2006b).

Fundamentally, engagement with Lean Thinking will depend on how employees interpret the concept and imbue it with their own meaning and aspirations. In order to be successful Hammer & Champy (1993) claim HR involvement, as well as teamwork, empowerment and responsibility, are key to success. Moreover, transfer often depends on how employees interpret the meaning of Lean Thinking; the same can be said for HR systems whereby employees perceive and interpret HR practices subjectively (McAdam & Lafferty, 2004), leading to attitudinal and, in turn, behavioural HR outcomes that are eventually related to performance outcomes at the organisational level (Nishii et al., 2008).

There appears to be a consensus that a people orientated (or soft) approach toward HR strategy at various levels is a requirement of successful Lean applications, however, there is a lack of research encompassing the issue. It is worth noting that there are clear parallels between the distinction made in Lean analyses of 'operations management' and 'people management' and the popular distinction in HRM between 'hard' and 'soft' approaches (Guest, 1987; Storey, 1987; Storey, 1992) although, interestingly, the hard/soft distinction has largely been ignored in the USA (Truss et al., 1997) where Lean has been applied to a greater extent than in the UK.

Oliver & Wilkinson (1992) argue that, alongside the inevitable 'hard' systems side that Lean incorporates, there needs to be a 'soft' human side focusing on culture change and personnel practices. They claim that the similarities in some aspects of Lean Thinking and HRM are quite striking, whilst noting that despite differences in philosophy and tradition they share an ethos in terms of placing high value on quality and being market driven and a focus on performance measurement. From a LPT perspective there is evidence to suggest that implementation of Lean Thinking results in the application of 'hard' HRM practices at the expense of employee wellbeing.

However, the 'kaizen-type' approach to Lean implementation, mentioned previously as being more prevalent in non-production organisation settings, is less likely to focus on

softer cultural aspects (Radnor & Osborne, 2013) and therefore less likely to embed HR practices and systems in implementation. Empirical evidence from the service sector indicates that employee perceptions of HR systems are linked to workplace behaviours such as organisational citizenship (Nishii et al., 2008) and employee service performance (Boxall et al., 2011; Aryee et al., 2012). These behaviours signify what Oliver & Wilkinson (1992) consider to be favourable worker attitudes – the foundation of change programmes like Lean.

While many obstacles confront organisations when implementing Lean Thinking the most common themes do appear to be HR related challenges comprising cultural as well as operational people management issues. Such factors have been shown to include a lack of management commitment and support (Achanga et al., 2005; Comm & Mathaisel, 2008; Rahbeck et al., 2011), a lack of alignment between human resource strategy and the aims of Lean application (Tracey & Flinchbaugh, 2006a), employee resistance (Carter et al., 2011; de Souza & Pidd, 2011), limited experience of leadership for change and indeed leadership more generally (Achanga et al., 2006), and inappropriate management behaviour (Ahrens, 2006). Inadequate attention to HR issues is one facet but the quality of HR policy and practice, or lack thereof, can also cause problems in connection with change initiatives and training.

HR shortcomings that can undermine the implementation of Lean Thinking include poor selection of change agents and improvement teams coupled with an insufficient appreciation of Lean principles (Ahrens, 2006), a lack of engagement and 'buy-in' from teams and individuals towards improvement plans (Carter et al., 2011), 'silo thinking' (de Souza & Pidd, 2011), failure to develop necessary skills and expertise (Achanga et al., 2005), poor communication and inadequate performance management systems that do not reward the adoption of Lean Thinking (Comm & Mathaisel, 2008).

While existing research on the role of HRM in implementation is somewhat lacking, a proposition based on existing evidence (of both Lean Thinking and change programmes more generally) reflects the authors view that the apparent separation of HRM and Lean Thinking is harmful to HR professionals and the organisations that are failing to make best use of them. It could therefore be proposed that the exclusion of relevant HR

professionals from the implementation of Lean Thinking will be detrimental to the success of such initiatives – this is an area which will be discussed in more detail in the Findings chapters.

2.6 Summary

This chapter has provided the opportunity to discuss the literature on the nature of Lean Thinking in the context of the development of work organisation, as well as focusing on the implementation and responses to Lean Thinking. The Literature Review chapter has explored Lean as portrayed in the literature, with a particular focus on its transfer beyond manufacturing.

The chapter began by examining the organisation of work which is important to understand in order to conceptualise Lean and how it has emerged. This included a discussion of 'Fordism' and 'Taylorism' where it was noted that a number of characteristics of the research conducted from a LPT tradition emerge, such as deskilling and enhanced management [direct] control. As new forms of work organisation were introduced, largely thanks to Japan, proponents argued that a paradigm shift occurred *from* direct control *towards* responsible autonomy and empowerment.

Thus, this led to a discussion on the origins and conceptualisation of Lean concluding that, given there is a problem with defining Lean generally, a more comprehensive review of the experiences and implementation is needed in order to better understand the concept and its relevance to non-production settings. This can best be understood by moving away from focus on operations perspectives, to approaches that incorporate insights from a LPT lens. A gap exists in current literature regarding what Lean looks like from inside organisations which are not typical in their characteristics (i.e. have a large degree of intangibility).

The experiences of workers under Lean is central to this thesis, and this literature chapter examined in detail the issues surrounding control, autonomy and power within Lean organisational settings. Despite readings within a LPT tradition evidence indicated

that Lean *can*, and *is*, resisted by workers and that in contemporary organisations this can be linked to what the author refers to as 'controlled participation', by building on the ideas of Dohse et al. (1985). Existing research on Lean indicates how and why Lean is seen as not only a new form of control, but also a form that relies for its success on surveillance – under the guise of seemingly 'empowered' and 'engaged' employees in self-managing, team-based organization and production arrangements. It is this last point that is key to this chapter, and to this thesis, i.e. how Lean is theorized by LPT researchers, read and received by employees working in a (non-manufacturing) Lean organizational setting.

It is unclear from the literature what employee experiences are in contexts that are not characterised by tangible service, and therefore a closer examination of workers in such professional settings is needed. Interestingly, questions were raises as to how responses to the implementation of Lean may be different according to who the worker is. While we cannot state that professionals who have a strong sense of self-identity are more likely to resist Lean, a number of questions were raised as to how they respond to initiatives that they may see as a threat to their existence, and this requires further examination.

Finally the proposition of universal transferability was explored with evidence indicating that there are mixed results on the success of transfer (both from a process and a people perspective) and this requires further exploration. A distinction was made between different types of Lean implementation – 'Real' and 'Fake' with the assumption that non-manufacturing and non-production organisations will be implementing 'Fake Lean' although further research is needed. The evidence indicated that the heterogeneity of non-production organisations means that it is unlikely that a definitive notion of Lean will apply across the board that the claims of Womack et al. (1990) of universality are idealistic, and that adaptations to models will have to be made given different inputs, outputs and environments.

Along the way, key debates within the literature have been presented and gaps have been highlighted for further exploration. Insufficient knowledge on Lean implementation in organisations characterised by intangible products and services is

particularly acute in the following areas: details of the actual activities that workers participate in order to implement Lean; the activities that professionals engage with in comparison to their administrative colleagues; a recognition that professionals are more likely to resist Lean than their colleagues; what skills are being applied in atypical contexts and how is the training designed and delivered; the impacts of Lean discourse on management and leadership; the role of the HR function in delivering Lean; control and resistance in implementation; and the work involved and how workers in non-typical organisations deal with this. In the empirical chapters of this thesis the author aims to contribute to the understanding of the labour process by addressing these gaps. Before considering the evidence in detail, the next chapter will discuss how the research was undertaken.

Chapter Three Methodology

3.1 Introduction

This chapter introduces the research methodology used for this study and how it has guided the data collection and analysis. The previous chapter presented the key research within the area of Lean, and established that the definition and understanding of Lean is changing to the point where it may no longer be recognisable which is leading to confusion among scholars and practitioners. Arguably, the precise nature of the relationship between Lean and its context remains somewhat opaque and, essentially, an argument develops concerning a best practice versus a best fit approach to Lean (Cusumano 1992; Cooney 2002, Radnor et al., 2006; Radnor & Bucci 2007).

Despite some theoretical and empirical progress, scholarly understanding of what Lean actually is and how it contributes to performance in organizational settings outside of manufacturing remains relatively underdeveloped, and there is a need to explore Lean in terms of 'fitness for purpose' especially within sectors and industries that do not mimic the traditional production setting (Radnor & Osborne 2013). Accordingly, a clearer examination of the impact of Lean on industries and sectors new to its uptake is one of the most pressing research tasks.

Therefore this chapter presents the methodology and strategies which the researcher employed in order to achieve the overarching aim and research objectives. The methodology is justified throughout by the intellectual position adopted, i.e. that of labour process theory (LPT). The strengths and limitations of the methods are discussed, along with rationale for the choice of strategy. The chapter introduces the case study organisations, and the methods of data collection, as well as illustrating the data analysis method which was used. Finally the ethical considerations are presented.

3.2 Philosophical Perspective

The Introduction and Literature chapters have already identified a great deal of current research which explores Lean Thinking from a labour process standpoint. This lens has allowed researchers to investigate what is happening in organisations, and how workers are experiencing Lean. Informed by the aim and objectives of this research, the

analysis of workplace transformation must be from the worker's perspective and therefore requires a careful reflection on the mode of inquiry and research paradigm. As pointed out by Biazzo & Panizzolo (2000) we must choose our research paradigm carefully in order to examine Lean organisations:

> …in order to really understand the dynamic of innovations in the workplace, the reality that is hidden behind the espoused theories codified informal work systems (and in popular terms like team, empowerment, problem-solving groups, quality circles, etc.) must be brought to light.
>
> Biazzo & Panizzolo, 2000: 12

Accordingly a clear understanding of working conditions and life under Lean can only be generated through a physical immersion within the organisational setting, i.e. 'inquiry from the inside' (Evered & Louis, 1981). 'Thick descriptions' (Geertz, 1973) of workplaces are needed to build upon key studies already existing in order to go beyond the Lean rhetoric and to conduct research which is able to reveal the 'reality of working' within a Lean system in new contexts. This section will outline the philosophical stance the author of this thesis adopted in order to answer the aim.

3.2.1 Research Philosophy

In preparation to conduct research, it is important to primarily examine research philosophy described as the development, knowledge and nature of research (Saunders & Thornhill, 2007). Theorists suggest that this is embedded within the research paradigm forming a philosophical underpinning to research (Johnson & Christensen, 2010; Saunders et al., 2009). The research paradigm is the conceptual framework or philosophical guide, comprised of perceptions and understanding of theories and practices influencing how research is conducted (Cohen et al., 2001; Gliner & Morgan, 2000).

Defining these concepts has not come without criticism, although Easterby-Smith et al. (1994) argue that it remains important for the researcher to try and understand the concept because it can help determine the approach to research, recognising limitations. Rubin & Rubin (2012) explain how understanding the assumptions behind research forms guidance for conducting research and this understanding forms a legitimate

foundation for the selected approach providing a greater knowledge base for techniques selected.

It has been suggested that this framework is directed by a certain set of beliefs (Guba, 1990) categorised as ontology, epistemology and methodology (Denzin & Lincoln, 2005; Easterby-Smith et al., 2006). This idea was popularized by Kuhn (1962), but it is important to note that it was simply a general concept linked by similarity in rational amongst researchers. Therefore the belief of a research paradigm is not strictly limited to ontology, epistemology and methodology but this construction of philosophical concepts will assist and influence the way knowledge is studied and interpreted (Mertens, 2005).

Ontology is described as the study of existence or the nature of existence (Lawson et al., 2013). Despite its complexity, it has been argued that it is valuable for a researcher to interrogate this to understand why they have chosen a specific subject and its relevance and importance (Jankowicz, 2005). Saunders et al. (2009) suggest that ontology questions assumptions that researchers have regarding how the world operates; Similarly Jankowicz (2005) questions whether individuals see the world as consisting of people or processes.

On the one hand objectivism is described by Cameron & Price (2009) as a researcher believing that there is an objective reality. An advantage to this ontological approach is that the researcher will firmly follow research goals arriving at an unbiased conclusion using a robust scientific approach allowing for higher levels of reliability (Balsley, 1970). It is suggested that this approach allows the researcher to minimise or eliminate their own judgment and overall the approach is reliable and valid, which is consistent with Cassell & Symon (1994). Objectivity has been scrutinised for its lack of depth into research, which is why this research takes a subjectivist perspective which is said to place emphasis on discovering and highlighting the connotation of phenomena and reasoning (Easterby-Smith et al., 1994), in this case of Lean.

A subjective approach is where there are said to be multiple realities (Morgan & Smircich: 1980), and is depicted by Gergen (2001) as a researcher who does not

apprehend a world beyond individualism because there are multiple realities and answers. Despite this, subjectivism however is not without its critics: Hughes & Sharrock (1997) explain that the most condemning flaw of the subjective approach is its inability to replace objectivism with a more effective approach.

It is argued that ontology naturally precedes epistemology (Kuhn, 1962). Epistemology, as characterised by Fox (1999), is the study of knowledge. Jankowicz (2005) defines what epistemology is and explains how it provides a way in which evidence and proof are established. In relation to research epistemology is the relationship between the research and the researcher. On the one hand, interpretivism relies on the participants and recognises their own impact on the research (Creswell, 2013). Generally, an interpretivist would avoid searching for one truth, unlike a positivist would, and focus on finding a socially agreed understanding in order to comprehend phenomena. The epistemological approach of the interpretivist would be detailed, in depth and qualitative in order to understand knowledge. On the other hand, positivism assumes that the world is fragmented so it lacks the detailed explanation of the research phenomena (Saunders et al. 2009). This is where interpretivism or phenomenology provides a different approach to research.

For the purpose of this research the author believes that there is an organisational reality that everyone shares, and Lean was a part of that reality. However, it was recognised that people perceive Lean in different ways based on their experiences. Therefore the researcher maintains an ontological objectivism (there is a real world that exists independently of our perceptions, theories, and constructions) while also accepting a form of epistemological interpretivism (our understanding of this world is inevitably a construction from our own perspectives and standpoint). Bearing this in mind, interviews were selected as the primary method of data collection in order to create a rich body of evidence from which we can better understand perceptions of individuals, and how they are connected in reality. The best way to then understand this was through thematic analysis, which is explained in the following sections.

3.3 Research Approach: Quantitative versus Qualitative

In this section, the appropriate research approach will be selected, bearing in mind the nature of the study and the constraints associated with this thesis. However, before deciding on the appropriate research strategy, this section provides a brief overview of major research strategies. The discussion about research approach revolves round two major strategies: quantitative and qualitative. These two strategies are based on entirely different assumptions. For example, Bryman (2008) indicates that quantitative research strategies are more inclined towards the deductive approach, whereas qualitative aim towards the inductive approach from the perspective of theory and research. He further argues that quantitative strategies assume the norms and practices of a scientific model; they follow the norms of positivism.

In this approach, social reality is considered as objective and external. It emphasises the quantification of data. Similarly, Neuman & Benz (1998) argues that quantitative researchers follow a linear research path and speak a language of hypothesis. They emphasise precisely measuring variables and testing hypotheses that are linked to general causal explanations. This approach is often used by researchers informed by an HRM or operations management theoretical framework, as described in Chapter One.

On the other hand, a qualitative approach is one in which the inquirer often proposes knowledge claims primarily on a constructivist perspective (Creswell, 2013). Creswell (2013) further mentions that narratives, phenomenology, ethnographies, grounded theory studies or case studies are used in this method as strategies of inquiry. Within the labour process and Lean fields, this appears to be the most common approach to research strategy: researchers create a narrative in order to understand the complex labour process. Neuman & Benz (1998) also argue that qualitative researchers often rely on interpretative or critical social science; they apply logic in practice and follow a nonlinear research path.

This approach enables the researcher to study social processes and phenomenon (Gray, 2009) through the exploration of meaning and context, with Creswell (2013: 48) indicating that researchers should use qualitative research when they want to

"empower individuals" in order to understand their perspective. However, qualitative researchers generally do not follow structured and predetermined formats, so there are problems in the generalisation of findings from qualitative research. The author does not intend to make generalisations about this study: instead they are interested in exploring broader issues.

The above discussion indicates that quantitative and qualitative strategies both have strengths and weaknesses. This thesis is based on qualitative data collected through the use of semi-structured interviews and documentary evidence at multiple case study sites. Specifically with regards to Lean, Biazzo & Pannizzolo (2000) assert that there is a need for in-depth qualitative research in order to understand the structures and organisation of work under Lean in more detail. Moreover, the author has identified a trend in current research that uses either a quantitative approach, or a mixed methodology approach to data collection (discussed in Chapter One). Consequently there is an opportunity that exists to use an in-depth qualitative strategy to meet the calls to go beyond the simple description. As the aim for this research is exploratory in its nature, and requires the interpretation of meaning and context, this also offers support for the choice of approach.

3.4 Methods of Data Collection

This study is based on an in-depth exploratory case-study approach of four organisations known to be implementing Lean-type methodologies and whose organisational context is different to manufacturing. The broad aim of the research was to examine the way in which the organisations implement and manage Lean, in particular seeking to examine the worker experiences of implementation.

Accordingly, the methods employed within this study revolve around the experiences, views and perceptions of workers involved in that implementation including senior managers and HR. As Yin (2003) has argued, case study methodology is well suited to studying such 'complex phenomena'. In addition it also allows the author to examine the impact of key contextual factors (Bryman, 2008). Consequently, this research had two main elements:

- In-depth interviews with employees who have experienced Lean including senior managers, operational managers, shop floor workers, Lean facilitators, professionals and HR practitioners;
- Examination of documentation regarding Lean training programmes, the strategic and tactical dimensions of Lean and feedback from training events, among others.

A common strategy for data collection within the LPT field of Lean is to approach it from an ethnographic point of view. An ethnographic approach involves the researcher immersing themselves in the organisation or context that they wish to study and interpreting the perspectives of those within; needless to say a large majority of labour process and Lean studies have been conducted this way. Braveman's study, for example, used this approach to collecting data. More recent than that was Grahams (1995) narrative of life working on the Subaru Isuzu production line as well as Rhinehart et al. (1997). This thesis was restricted by a number of factors such as time limits and budgets; therefore an ethnographic approach was not suitable or viable for the researcher. Next, this section goes on to discuss each of these methods in turn.

3.4.1 Case Studies

Case studies facilitate the exploration of one particular area in great depth such as an individual or group of people, an organisation, event or location. Bryman (1989) argues that this is a valuable approach particularly if the subject is familiar to the researcher, allowing them to draw more meaningful conclusions. However there is some disagreement about whether this method, particularly a single case, leads to findings being over generalised. For this reason commentators such as Yin (2003) argue that multiple case studies are preferable. On the one hand Yin (2003) suggests that between six and ten cases, on the other hand Eisenhardt (1989) states anywhere in between four and ten work well.

For this study evidence is drawn from four case organisations in non-manufacturing settings. The challenge was to identify industries with on-going Lean programmes and so although the four organisations emerge from different historical contexts, which may influence the approach each adopts, this is not intended as a comparative study.

Moreover, the aim was to identify cases in which the setting of that organisation is new to Lean. A multiple case study design which was used in order to limit the overreliance on one single case and allow a broader understanding of the implementation and worker experiences of Lean.

It is important to note that a case study "is not a methodological choice but a choice of what is to be studied" according to Denzin & Lincoln (2005: 119). Yin (2003) provides the most common definition of a case study, that being an "empirical inquiry that investigates a contemporary phenomenon within its real-life context, especially when the boundaries between phenomenon and context are not clearly evident" (p. 13). In essence, the approach is about people, events, processes and capturing these in a way which represents an overall picture of the situation. It offers researchers the opportunity to conduct an empirical inquiry to investigate a contemporary phenomenon within its real-life context when boundaries between phenomenon and context are not clearly evident. In this sense multiple sources and stakeholders can be used.

The choice of cases here was dictated by the accessibility available to the researcher: while Yin (2003) suggests that choosing a case study organisation is a rather logical and sequential process, Stake (1995) acknowledges that the process may be less linear and be designed around access to organisations and sites. Cases for this study were approached at different times and an emergent approach was adopted. Although the organisations stated they were happy for the researcher to use their name, it was decided to keep this anonymous in order to protect the identity of participants. Therefore, they are referred to throughout this thesis by their pseudonyms of OldUni, NewUni, RDA and PharmaCo.

OldUni and NewUni were the first to be identified as a result of a conference on Lean in non-production settings. Two individuals delivered presentations which the author attended and had an informal discussion about their PhD thesis. Therefore, a gatekeeper was used in both these cases: at OldUni this was a Lean facilitator and at NewUni this was a senior manager. While this could be seen as a limitation of the research, it did

allow the researcher to initially gain entry to the organisations which otherwise may have taken a long time (Feldman et al., 2003).

RDA and PharmaCo were approached following letters (Appendix 1 Invitation to participate in Research) sent to local non-production organisations who were publically noted, through internet research, to be implementing Lean-type methodologies. This search was primarily conducted via the Manufacturing Advisory Service (MAS), and as a result 10 letters were sent to individual organisations that were considered by the researcher to be 'unique' in terms of their characteristics (i.e. they were not automotive manufacturing, produced a mix of tangible and intangible services and employed both knowledge and low skilled workers). Thus, an emergent approach to design was used (Simons, 2009).

The use of gatekeepers to gain access to each of the cases does present limitations and, potentially, methodological questions. Creswell (2013) states that it is important for researchers to make clear the steps taken to enter and secure permissions to study in the organisations as these are the individuals who 'control access' to the organisation. The researcher asked the organisations' gatekeepers if they would be prepared to participate in the research, and sent an information sheet (see *Appendix 2 Research Project Information Sheet*). The gatekeepers were asked for interviews with staff that would be prepared to discuss their experiences of Lean. The researcher did not state an ideal number of respondents in order to be as flexible as possible with the organisations. Consequently the number of participants was dictated by the gatekeepers, determined by who was willing to participate in the research. **Error! Reference source not found.** shows the steps taken to access each of the cases, ith three requiring a report at the end of the data collection process in order to secure access. Although it could be argued that the data was directed towards this, the gatekeepers did not provide a brief as to the area they required the report to be on. Moreover, gatekeepers were provided the thesis aims and objectives beforehand and were happy for the end report to be based on this, i.e. there were no restrictions on what could be asked and hence included in the report.

Table 2 Steps taken to access case organisations

Case Organisation	Industry	Gatekeeper	Steps to entry	What did the Gatekeeper gain?
OldUni	Higher Education	YES Lean Team	Informal chat at a conference followed by a telephone call with Lean Team.	Report of findings
NewUni	Higher Education	YES Dean via Personal Assistant to Dean	Informal chat at a conference followed by an email exchange with a senior manager.	Nothing required
RDA	Public Services	YES Head of Org. Development	Speculative letter	Report of findings
PharmaCo	Pharmaceutical	YES Director of HR	Speculative letter	Report of findings

Source: Compiled by author

Each case organisation had been engaged with Lean Thinking and practice for similar lengths of time, and all claimed to adopt a 'soft approach' to implementation in the first instance at least. A summary of the principal contextual issues for each case organisation is provided in *Appendix 3 Summary of Approaches to Lean in the Case Organisations*. Following identification of the four case study organisations, interviews were the primary source of data collection for this research, supplemented by documental evidence.

3.4.2 Interviews

Interviews are perhaps one of the most commonly used qualitative techniques within business research (Gray, 2009). Simons (2009: 43) suggests interviews are the key to revealing "events that cannot be observed" which is also the main reason why direct observation was not used, as it is likely experiences of Lean extend beyond what can be observed at any specific time. In this research a total of 54 semi-structured interviews were conducted with individuals who have experienced Lean in their respective organisations. These were located across functional areas and drawn from several sites (in the case of PharmaCo).

As Horn (2012) points out different types of interviews can be classified in many ways, however he offers a useful model by explaining the differences across two main

dimensions: structure and size. Structured interviews are easier to prepare for and administer and as Saunders et al. (2009) explain lend themselves to situations where the research problem is well defined and theoretically understood.

As each of the cases were using very different version of Lean, this approach was considered by the researcher difficult to achieve. This study therefore uses the semi-structured approach as it allows the respondent more opportunity to talk freely, as well as helping the researcher establish an understanding of Lean from their experience. Care was needed not impose a particular ideological standpoint into the questioning as this could cause tensions, as they may conflict with participants' world views (Woodward & Chisholm, 1981; Limerick & O'Leary, 2006). Hence questions were based on available interview schedules designed around existing research topics, and built on what the individual was describing. Planned and administered correctly this approach allowed the interviewees room to 'tell their story' in a personal and free flowing way and permitted the author to probe and build on responses where appropriate.

The aim of the interviews, and reflected in their design (see *Appendix 4 Interview Schedule*) was to explore how Lean is implemented and respondents experience Lean Thinking. The aim was not to impose explanations from the literature on how Lean can be understood and implemented, but to explore what is happening in the organisations. The interviews were semi structured but based around a broad topic guide that highlighted key issues for discussion as follows:

- Background – role in the organisation and nature of workplace;
- Defining Lean – personal understanding and involvement;
- Experience/training involvement;
- Perceptions as to main purpose of a) Lean to the organisation b) Lean to their individual role;
- Nature and extent of individual involvement in Lean activities;
- Implementation and impact of Lean – involvement, communication, teamwork;
- Organizational readiness - Inputs and Outputs of Lean;
- Role played by HR practitioners.

It is assumed in this study that each respondent has a unique perception about the implementation of Lean and their experiences, the issues faced by themselves and level of the use of tools and techniques. **Error! Reference source not found.** shows the number of espondents in each case, with further detail on coding available in *Appendix 5 Interview Coding and Characteristics*.

Table 3 Number of Interviews

Case	Number	Location
OldUni	22	On-site
NewUni	12	On-site
RDA	12	On-site
PharmaCo	8	Multiple sites via telephone
TOTAL	**54**	

Source: Compiled by author

The majority of the interviews (46) were conducted in person on-site, however 8 interviews were conducted via telephone for logistical reasons. Interviews lasted between 35 minutes and 90 minutes, with most lasting for approximately one hour. All respondents were assured anonymity and were required to sign a consent form (*Appendix 6 Interview Consent Form*). Interviews were transcribed and returned to respondents for approval and amended if requested: the consent form also served to gather basic demographic data.

When identifying respondents it is worth bearing in mind that every respondent was able to offer a view from different perspectives as a result of their involvement in the Lean process. Thus, the approach to sampling was entirely purposive in that respondents were identified and approached by an intermediary (a gatekeeper as in Table 2). Eligibility criteria set by the gatekeepers was that individuals were to have received and/or participated in (some form of) Lean activities, therefore there were no individuals interviewed within this study who had no involvement at all. While it might be argued that having a gatekeeper arrange the interviews is a weakness of this study (Gray, 2007; Simons, 2009) it did allow the researcher to ask specific questions about their involvement which might not have been possible if they had no involvement.

As stated, some interviews were conducted via the telephone: the telephone interview is the least common method of interviewing for qualitative research according to Norvick (2008). Opdenakker (2006) states that this strategy allows much greater access to participants especially to closed sites. This was particularly important for this thesis as access to PharmaCo was restricted as a result of restricted access to pharmaceutical sites more generally. Although not impossible, the practicalities as well as geographical location made the telephone interviewing the most appropriate strategy of choice for the PharmaCo case.

A study by Chapple (1999) suggests that despite initial reservations over the use of telephone interviews, the data she received at the end was "unexpectedly rich" (p.91). This view is also supported by Carr (1999) who also suggests that despite concerns about quality, the strategy worked well in terms of the quality of the end data. That said it is important to acknowledge the limitations of this choice of strategy; not only does it result in potential inconsistencies in the research strategy, but telephone interviews make it impossible to observe social aspects such as body language. From the face-to-face interviews this was often an important part of the interview and illustrated many aspects of the respondent and their perception of Lean.

3.4.3 Documental evidence

Case studies require the use of multiple sources of evidence (Gray, 2007) with secondary data collection a common method in qualitative approaches. This involves the use of data or information that was either gathered by someone else or for some other purpose than the one currently being considered. Existing documentation regarding the aims of Lean and how Lean activities have been implemented were examined. Initially, this included policies and procedures relating to the strategic goals of Lean. However it became clear that the management of Lean training was an important issue, therefore the training policies and feedback were also studied in detail.

Secondary data can be used to inform the context and add depth to the case (Simons, 2009: 63) however generally "has not been fully exploited" from this point of view. For the purpose of this thesis the second step of the data collection was the reviewing thirty four different types of documental evidence (*Appendix 7 Overview of Documental*

Evidence) across the cases, comprising of around 316 pages. Each organisation was asked for documents to enable the researcher to gain an understanding of the case. These documents included annual reports, presentations, feedback on Lean training events, Lean training guides/schedules, reports detailing successes and were not all available publically. Only PharmaCo declined access to internal documents, therefore only three publically available documents were available to analyse.

The researcher used these documents to establish a background and history of Lean activity: this often complemented the interviews and facilitated analysis as the researcher often went back to existing documentary evidence as part of the data analysis. The documents were also used in order to show the thinking at the time, and pattern of development of Lean activities: this was especially so in terms of identifying the training events in each case. According to Simons (2009: 63) documents both in the public domain and otherwise are useful to use, suggesting "written documents may be searched for clues to understanding the culture of organisations, the values underlying policies and the beliefs and attitudes of the writer". All collected documents were checked against Scott's (1990) quality criteria, namely authenticity, credibility, representativeness and meaning. This information was used to inform the context of the organisation, and to cross check with interview data (for example on Lean training events).

3.4 Data Analysis

Having explored data collection methods and design it is important to choose the right analysis tool for that data. Qualitative data can be analysed using a number of methods which can generally be categorised into *coding* methods and *sequential analysis* methods according to Flick (2009): the former is concerned with identifying categories and themes, the latter associated with "reconstructing the structure of the text and of the case" (p.306). Conversely, Ripley (2011) suggests there four approaches to analysing qualitative data: *framework* analysis, *thematic* analysis, *interpretive phenomenology* analysis and *constructivist* analysis. The most common of these, argues Ripley (2011: 276), is thematic analysis with the 'newcomer' being interpretive phenomenology analysis.

For analysis the researcher personally transcribed the digital recordings as they felt it was important to undertake analysis from a comprehensive record and to ensure that participants' views were accounted for. Following collection the data was analysed using an interpretative phenomenological approach (Silverman, 2011). This approach generally has seven steps which are shown in Appendix 8 Steps Taken to Analyse the Data, and are characterised by cross-checks between and among cases and categories. According to Flick (2009) this approach is useful for multi case analysis. It is important at this stage to discuss the issues which are raised by the coding process: Creswell (2013: 185) discusses the "pre-existing or priori codes" that exist which serve to facilitate the coding process. These are generally imposed codes which the author of this thesis did use to start the coding process. Appendix 8 illustrates this in more detail, whereby initial codes were based on the pre-existing ones which formed the basis for the interview schedule.

Following further analysis and clustering of themes these priori codes were replaced by new emerging codes driven by the data itself. Another issue to consider is the naming of codes which were both drawn from literature but for the most part were *in vivo codes* (Creswell, 2013: 185) created by words and descriptions used specifically by participants. A difficult but necessary part of the analysis was dealing with overlap in categories as some data fell under more than one heading, for example 'successes' as a sub-theme emerged in other categories such as 'empowerment'. To deal with this required lots of checking back and multiple reading of transcripts, and careful consideration to determine the correct coding. Overlap is inevitable, however the researcher attempted to reduce this as far as possible.

From the sub-themes a table was created with each sub-theme as a column and each transcript as a row identified by code. Further readings of all the transcripts enabled the researcher to systematically analyse whether these themes were repeated throughout the data by looking for examples of these themes and copied or summarised any evidence from the transcripts such as quotations from interviews. This systematic method of analysing the data also encouraged the researcher to check if there were any contradictory examples in the transcripts.

Throughout the process the research aim was re-evaluated and made more specific taking into consideration the data and findings. It is important to clarify that this thesis was not testing hypotheses therefore there were no cases of 'negative instances' as such, rather there were sometimes differences in responses and will be presented and explained in the analytical chapters i.e. roles within the Lean process versus hierarchical roles. When looking at worker experiences this required a degree of interpretation.

QSR NVIVO9 was chosen to facilitate analysis as it is a useful data management tool which enabled the author to clearly see the different codes and to generate new ones. Although there are many critics of the use of technology in qualitative research (Crowley et al., 2002) the author chose to use this program to generate and manage some of the codes created. The advantages of using NVIVO are presented by Bazeley (2007) who discusses five main uses of the programme which include the ability to manage data, manage ideas, to query data, to model and to report from the data. Although the researcher acknowledges that NVIVO can be used more extensively for analysis it was decided that the software would be used only to facilitate the analysis with some of the examination being conducted manually.

Bazeley (2007) also suggests that although there is a perception that computer technology can increase the rigour of the analysis process, this is not always necessarily the case. He argues that the software is merely a tool to help facilitate the coding process (Flick, 2009) and can be used simply as that, which was how the author of this thesis used it. Appendix 8 shows when and how NVIVO was used, with the author often switching between manual coding and computer aided coding. This follows Bazeley's (2007) experience that each researcher can use NVIVO to find ways in which it best supports their own work. Flick (2009) furthermore suggests that research must make clear the entire analysis process if they are using computer aided software in order to clearly explain the data analysis and the role of the software. For this reason, the author has provided this detail.

3.4.1 Documentary data analysis

Stake (1995) states that almost every piece of research requires document analysis of some sort, therefore researchers must bear in mind the type of document they are

analysing, who wrote it and the reasons for it initially being written (Bryman & Bell, 2007). This is especially so when using internet sources. Much of the documents used to inform the background of the cases in this thesis were produced by the organisation themselves, therefore there is the potential for this to be subjective. The researcher closely read the sources, using a form of content analysis in order to look for key words and ideas. Generally this included information on the following specifically:

- what Lean (or otherwise named) is defined as by the organisation;
- what motives for implementation were cited;
- what were the impacts/results of Lean activities according to the organisation;
- what training was available.

This was in order to provide a context and to facilitate understanding of the Lean programme as each of the case studies were at different stages of Lean implementation and used diverse strategies for their training in particular.

3.6 Ethical Considerations

There are many ethical issues which must be considered both prior and during qualitative data collection. Horn (2012) provides a useful fundamental guiding principle for research involving human participants that it should 'do no harm' to those involved. Saunders el al. (2009) explain that ethics in the business research process concern the appropriateness of the researchers behaviour in relation to the rights of the participants and those affected by the process. They also highlight a number of stages where ethical issues can arise during a research process, many of which are referenced in the various codes of practice on ethics available. The three that have particular relevance to this thesis are: confidentiality of data, informed consent and anonymity.

The researcher considers that sourcing participants via gatekeepers and their personal networks established high levels of trust from the outset, and proved invaluable when subsequently building and maintaining rapport. The relationship with all the gatekeepers was built up over time (Feldman et al., 2003) especially with regards to the two higher education institutions whereby the researcher often met the gatekeepers at conferences throughout the thesis period. The relationship between the researcher and

the gatekeeper allowed access to a wider variety of interviewees, demonstrated through the number of interviews conducted at both these case organisations as a result of a build-up of trust (Simons, 2009).

Additionally, Creswell (2013) presents a framework to help identify these challenges and considerations illustrating the six phases of research, the type of ethical issue and how to address ethical issues. The researcher used this framework to help guide them through the process, although acknowledges there are many other frameworks which could also be used. Creswell provides a comprehensive structure for considering these at different stages of the research project. Appendix 9 Ethical Issues in Qualitative Research illustrates these considerations and how the researcher addressed them.

It is also important to consider the role of gatekeepers. Gatekeepers are those individuals who provide access to research sites and facilitate that access (Okumus et al., 2007, Simons, 2009). Buchanan et al. (1988: 56) assert that such goodwill often "creates risks that are beyond the control of the researcher and which are difficult to predict or avoid". Thus access can very quickly be retracted, according to Gummesson (2000) when that access may be offered on the basis of the production of a report. The author does not believe that this is the case here, as no brief was given by the gatekeepers on this report.

3.7 Summary

This chapter presented the methodology used in this study, which enabled the author to study the experiences of workers, as opposed to testing an existing theory. Informed by the theoretical perspectives of subjectivism and interpretivism, a qualitative methodology was selected for this study. This chapter has established that there are a number of different and contrasting perspectives on how data is collected by researchers.

The data collection methods were selected in view of constraints such as cost, time, and the nature of the study. The methods chosen here enabled the researcher access to 54 worker experiences of the Lean implementation across 4 case study organisations operating in non-manufacturing settings. In addition to this 34 documents were

collected in order to inform the context and to establish background and context in each of the cases. Thus, a multi informant study was adopted in order to gain understanding of workers and their experience of Lean. In addition, the data was then analysed using a thematic analysis (for the primary data) and content analysis (for the documental evidence). The conceptual framework of labour process theory allowed for the realities of workers in Lean organisations to be presented throughout the following empirical chapters.

Chapter Four Implementing Lean Thinking

4.1 Introduction

This chapter presents the Findings from the data, specifically focusing on how the case organisations are implementing Lean. The Literature Review established gaps in existing research with regards to how organisations understand and implement Lean. The methodology outlined in the previous chapter enabled the researcher to explore how the four cases here understand Lean with documental data helping establish what the Lean programmes are within the cases.

The data gathered for the present study covered a wide range of issues connected with the implementation of Lean Thinking in UK contexts and so for the purposes of this thesis an inductive approach was adopted for analysing the evidence and establishing the overarching themes for discussion. The eventual themes are prefigured in the assessment of the theoretical background to the research but this should not cloud the fact that fundamentally they arose from the issues prioritised by the respondents.

The themes also reflect a number of important factors associated with various conceptualisations of HRM including: soft (cultural) versus hard (process) philosophies of HR; the rhetoric used in the selling and delivery of Lean; the strategic role for HR professionals (Storey, 1992); 'Real Lean' versus 'Fake Lean' (Emiliani, 2012) and the application of 'one approach fits all' training strategy to a diverse workforce. Specifically this chapter covers: what programmes are being implemented; the approaches to implementation; employee experiences of Lean training events; leading and managing Lean; and the role of the human resource (HR) function.

4.2 Lean Programmes

In order to establish a background and history of Lean activity in the four cases the author consulted documental evidence (*Appendix 7 Overview of Documental Evidence*). These documents show help to establish the background and history of Lean activity in the case study organisations, as well as the thinking at the time and patterns of development. These are from the organisation perspective. This was especially useful in terms of identifying the training events in each case. *Appendix 3 Summary of Approaches*

to Lean in the Case Organisations provides the key points with regards to the programme of events that each case had established, and shows that while there was a degree of similarity across the cases with regards to the tools and techniques they use their training approach, facilitation mechanisms and use of the HR department differed the most. In summary only OldUni have a dedicated Lean Team to coordinate their Lean activities, and only in PharmaCo and RDA were the HR department actively involved in leading and sponsoring Lean activities. In each of the cases the primary way in which they introduced Lean to staff was through participation in Lean training events (LTEs): this was seen as a softer approach, and also because Lean was not yet strategically integrated in any of the organisations at the time of data collection.

Appendix 3 also illustrates the broad range of approaches to Lean between the organisations, as well as showing the scope of the projects indicating that Lean is not extensively being applied in each organisation currently. What is interesting to note is that while each case is using a different approaches to Lean, each is using 'Kaizen type' events in order to train their staff and to diffuse Lean throughout their organisations. This indicates some similarities with Radnor et al.'s (2006) suggestion that most organisations not in manufacturing appear to use this type of approach. This section presents the evidence gathered from documentation, senior management and facilitators on a case by case basis in order to understand the context, in addition to the summary information in Appendix 3.

4.2.1 Case: OldUni

OldUni are a Russell Group and Times Higher Education Top 10 University. They have been implementing Lean, named *Lean University*, since 2007 across the institutions' administrative and support services. Initially Lean was sponsored by the Finance Director who set up the Lean Team[7] to facilitate Lean activities. The organisation consists of circa 9,000 people: around 2,000 of those are staff, and of those staff approximately half are academics and half are located within support or administrative services. The Lean Team were cited as claiming that academics are drawn from all over

[7] The Lean Team are three full-time dedicated members of staff who have responsibility for identifying process improvements and running Lean Training Events. They are essentially change consultants who work for the Finance Director. The team sit within the Business Improvement unit of the university, and operate at strategic (inter-unit) level.

the world "with their heads in the clouds" but support staff had "their feet firmly on the ground" (Source Q). Source B (2009) states the aims and pillars of *Lean University* are:

- Culture Change to create a drive and appetite for continuous improvement;
- Effectiveness to ensure that all business processes meet existing and emerging needs;
- Efficiency to maximise the use of all resources in the delivery of services.

Lean University have been operating in a number of areas, although these have largely remained within the remit of support and administrative services and have not been introduced to academic processes. Source C states in 2009 the Finance unit had the largest amount of staff involved in Lean projects of any unit within the organisation, closely followed by the Registry unit. In contrast the units with the least engagement were the Student Association, Deans Office and academic schools. Some impacts of *Lean University* cited by Source C (2009) include:

- Damages in Residences – the implementation of a standardized, consistent process for all;
- Student Elections - a redesigned of frontline operations on Election Day, through to the underlying policies and rules guiding candidates;
- Library Re-shelving – freeing up shelf space and a quicker turnaround of books and collections in order to resolve the problem of overcrowded shelves;
- Student Status Letters – the Student Status Confirmation Letter production process was redesigned, shortening the response time from two weeks to two days.

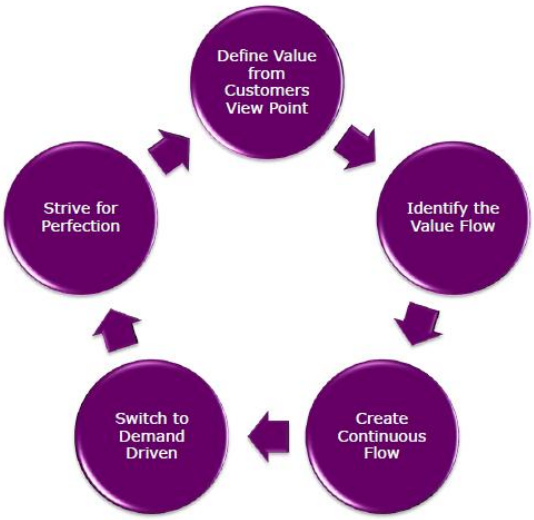
At a strategic level the aim of *Lean University* is to "change the way things are done" (Source D, 2008) in an organisation senior management believe to be inherently complicated and characterised by "messy processes and organisational silos". Projects are initiated by individuals (or units) who approach the Lean Team and undergo training. A Lean project is then established, through a partnership between staff and the Lean Team: the team itself determines which staff take part in the process improvement. While the team have a number of tools, techniques and approaches which

they use (see Appendix 3) the focus is on the use of a standard eight step project format (*Appendix 10 Eight Step Approach to Lean Implementation*) which they developed, but is based on the Six Sigma approach.

4.2.2 Case: NewUni

NewUni are a post-1992 Times Higher Education Top 20 Institution who are implementing a Lean programme within a single academic school, the third largest school within the university, referred to as *Lean Operating System* (Figure 1). Source R (2014) claims that the introduction of Lean was to "constantly and consistently improve performance" and that Lean is "the label for internal operating systems which has helped transformation". The school maintain that they "lead the way by showing how [they] apply Lean to innovate and give higher value to its students, customers, and clients". Although they have some support from higher levels of the institution, other schools are currently not implementing *Lean Operating System*.

Figure 1 Lean Operating System at NewUni



Source: Source R (2014)

The head of school, the sponsor, defines Lean as "the relentless endeavour for satisfying customers' needs and wants using the minimum of energy by maximising value and minimising waste" (Source R, 2014), while the Executive Board[8] are responsible for *Lean Operating System* projects under the direction of the Dean and Associate Dean.

[8] The Executive Board are a team of 10 senior members, both academic and support staff.

This board meet on a weekly basis to discuss Lean on a traffic light system[9]. Each member of the Board is directly responsible for a project under their jurisdiction which is illustrated on an A3 (Source F, 2010) and a board which is displayed in the reception of the department. *Lean Operating System* is applied in three areas (Source G, 2010):

1. Culture by added value, lean leadership, collective engagement, communication and gold standard customer service;
2. Methods through leadership pull, training, common agenda, CI and Kaizen, visual management and innovation;
3. Tools using balanced scorecard, A3 Reporting, master schedule, waste walks, Kaizen and value stream mapping.

NewUni introduced *Lean Operating System* as a result of the prior experience of their Head of School, who had previously worked with Lean in the automotive industry. After identifying areas of waste and improvement within the department, he implemented the philosophy with the support of the Vice Chancellor of the university; Source R (2014) and Figure 1 show the approach taken directly mimics Womack & Jones (2006) principles of Lean Thinking discussed in Section *2.3.3 Lean Production to Lean Thinking* Source R (2014) identifies the following six 'components' which make up Lean:

1. 'NewUni' Blue Sky - Shared Understanding of Vision and Mission;
2. Data and Information Driven;
3. Balanced Scorecard and Project A3s and Master Schedule;
4. Discipline and Cadence of Reviews;
5. Tools and Techniques;
6. Transparency.

The individual responsible for the promotion of Lean (sponsor) suggests (Source G, 2010) that the Lean programme is helping the organisation in nine key areas, although they were not able to present evidence of this:

[9] The traffic light system is also referred to as 'kanban' which uses a three light system to monitor progress of projects: red, amber and green. Green means the project/process is on time, amber means there are some potential issues and red means the project/process is behind schedule. This is incorporated into visual management designed to support individuals in decision making processes.

1. Prioritising of the vision;
2. Change is now opinion, not data, driven;
3. Maximised value to students, clients and customers;
4. A release of creativity to meet students' needs;
5. Common language identified;
6. Seeing things differently to before;
7. Enhanced process flow;
8. Improved quality and costs;
9. Reduced time elapse from system.

4.2.3 Case: RDA

RDA are a regional development agency offering professional knowledge sharing, help, advice and skills to local businesses in addition to providing funding opportunities. RDA work closely with Nissan Motor Manufacturing (UK) and regularly use their training programme to develop members of their staff, as well as their clients. The Lean programme, referred to as *Continuous Improvement*, was introduced in 2005. The programme consists of a number of work streams, one of which is 'Improving the Agency' (Source I, 2008) and has two objectives:

1. Learning from Experience by introducing a cross cutting activity designed to improve evidence base through the systematic use of evaluation;
2. Single Improved Corporate Culture covering six work streams (1) Vision and Values (2) Customer Service (3) Project Working (4) Business Process Review (5) Investors in Excellence and (6) Individual Performance Review.

At the time of interviewing in 2010, RDA were aware that they were due to close by March 2012 so it must therefore be acknowledged that this could have influenced the perceptions of respondents, especially considering the aim of Lean at that time was to facilitate the closure of the agency. Thus, the aims of Lean at the time of data collection were not the original aims as envisaged by the sponsors, or documented in the secondary evidence.

Despite this RDA had been implementing *Continuous Improvement* the longest, and it emerged as a direct response to the results of several surveys including a staff survey, a stakeholder survey and Investors in Excellence Beta+ assessments against the externally recognised EFQM[10] criteria. These criteria allowed the pillars of 'integrating people' and 'leadership' to be established, which formed the basis for later strategy of *Continuous Improvement*.

RDA believed that in order to help achieve the EFQM criteria, they needed to pursue a Lean-type programme focused on getting the most out of their people. The aim of *Continuous Improvement* was to ensure collaboration between functional strategies and action plans. The second phase of implementation was the creation of a specific plan which was developed to identify, prioritise, monitor and report progress towards the organisational vision which was "to be the best economic regeneration agency in the UK". Operational and process indications which made up this strategy included (Source I, 2008):

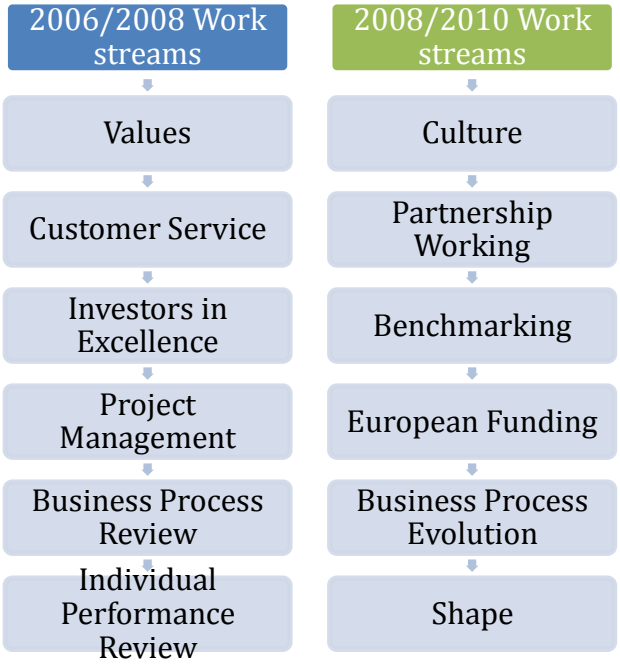
- Values to be explicit in everything the organisation do and embedded in all staff actions;
- A systematic strategic planning approach that identified priorities and is deployed to drive actions consistently throughout the Agency;
- Effective mechanisms in place to provide leadership on behalf of the region;
- Well-managed and optimised resources that are supported by quality decision making;
- Effective processes, systems and infrastructure which support the Agency's business and values;
- Appropriate measures and targets in place to monitor, manage and evaluate their operations and outcomes.

Specific works streams were set up in order to achieve the above, and these illustrate a change in focus over time. Figure 2 shows the change from initially focusing on values,

[10] The *European Foundation for Quality Management* or EFQM prescribe an "Excellence Model" which is used as a basis for self-assessment, an exercise in which an organisation grades itself against nine criteria. This exercise helps organisations to identify current strengths and areas for improvement against strategic goals. (http://www.efqm.org)

reviewing and project management to the later focus on culture, benchmarking and building on previous process improvements.

Figure 2 First and Second Phase Implementation



Source: Source J, n.d

4.2.4 Case: PharmaCo

PharmaCo are a small to medium sized pharmaceutical manufacturing company specialising in Active Pharmaceutical Ingredients in England. Currently one of the world leading contract manufacturers, they are both a developer and manufacturer (Source N, 2012). Contract manufactures are organizations that provide clients with comprehensive services from drug development through to manufacture. As a result, their business involves much more than manufacturing – they offer a professional service[11].

PharmaCo employ over seven hundred staff, split over four sites and a Head Office in England. The company's customers include top pharmaceutical companies, leading generics manufacturers and emerging pharmaceutical companies across the major

[11] Services include pre-formulation, formulation development, stability studies, method development, pre-clinical and Phase I clinical trial materials, late-stage clinical trial materials, registration batches and commercial production as well as offering consultancy.

pharmaceutical markets: Japan, Europe and North America. The company is one of the UK's fastest growing companies, according to Source O (2012), with an annual turnover in the region of £100 million. PharmaCo are currently involved in a period of significant expansion both in the UK and across America, where they have recently opened new offices in San Diego and New York. Since 2005, PharmaCo have periodically acquired various research and development sites to add to their growing portfolio, thus there was a need identified by senior managers to create a standardised set of processes.

PharmaCo are implementing a Lean programme, referred to as *Culture Change*, across multiple sites. Of these sites, half of them have been taken over in the past 2-5 years and have very different cultures, practices and processes in place. The initial aim was to develop standardised procedures, systems and behaviours across all sites in the company, therefore creating a 'one way' best practice. Lean is used by PharmaCo to "set a benchmark for the European pharmaceutical industry" according to the HR Director, with the HR department leading the change throughout the sites. Although not directly a result of Lean, the company has more than tripled both sales and employee figures since its formation in 2004 and is now one of the fastest growing companies within the sector (Source O, 2011).

While Lean manufacturing is prevalent within the industry, it has been noted that "pharma manufacturing is poorly competitive compared to other industries and there are significant opportunities for improvement using Lean techniques" (Source P, 2008). Despite the rhetoric, there generally is a lack of evidence to suggest that any company is "adopting Lean techniques to any extent". The Chemicals and Pharmaceutical Advisory Board (Source P, 2008) suggest three strategies are needed to secure the future of pharma production in the UK:

- A 'Factory of the Future' which must be flexible in terms of production runs and product change;
- The employment of a highly skilled workforce and operate to Lean principles;
- More comprehensive data analysis to demonstrate that such a plant could compete successfully against global competition.

By using Lean, PharmaCo aspire to set a benchmark for the European pharmaceutical industry and to meet the needs of the highly competitive, yet highly regulated industry. To date pharmaceutical companies have not adopted Lean techniques to any great deal, seen by many to be due to the strict regulatory requirements and product availability the industry faces. Continuous Improvement Teams (CITs) are set up periodically to evaluate current processes, undergo training and improve existing processes although CITs are not yet widespread throughout the organisation. The Chief Executive Officer states "our customers are looking to their suppliers as a catalyst for innovation. Strategic partnerships are clearly the way to go, as the silo approach is not conducive with Lean, value-adding collaborative working" (Source N, 2012).

4.3 Approaches to Lean Implementation

The previous section presented an overview of the Lean programmes which are being implemented by each of the case organisations, and shows that the approaches are very different. This could be due to several reasons such as the aims (intentions) of the programme; the remit of the activities; the size of the organisation or the context. This section presents the findings on what approaches were being used and why, as well as discussing the perceived intentions of the activities.

4.3.1 What is Lean?

The motives and drivers for implementing Lean differed according to each case, although generally *what* respondents understood Lean to be was similar across the cases. *Appendix 11 How respondents understood Lean* shows the terms that respondents used in order to define Lean, which was analysed through a content analysis approach and indicates that generally respondents were positive. However, what respondents understood by Lean was not necessarily linked to what senior managers at the cases hoped to achieve. Whilst using different words, the focus of the many respondents was very similar. Generally this was different to the aims of the organisation and what they hoped to achieve, although there was an understanding that Lean was about creating and embedding a new culture to become more effective and efficient.

Many of the respondents at PharmaCo used the term 'adding value' in their definition, as well 'reducing waste' and Lean perceived to have a 'customer' focus. This is in line with the original Womack et al. (1990) definition of Lean production. Perhaps not surprising, those at OldUni and NewUni found it difficult to state who their customer was or what 'waste' looked like. The term 'process' was also widely used by respondents. There was an emphasis at RDA on the improvement of processes as it was recognised that a lot of respondents' work involved multiple processes, thus improving productivity and quality became important. Despite this there were also concerns from a range of respondents over the term 'Lean', with one respondent elaborating:

> We don't call it 'Lean' we would generally call it 'process improvement' because that is how we apply it. It is about improving processes holistically across the organisation.
>
> [035, RDA]

A number of respondents stated that it was difficult to define what Lean was, with one at NewUni claiming that they were unable to provide a definition as a result of their lack of involvement in Lean training to date (although they had been involved with Lean as a result of their role on the Executive Board). This was not the only respondent who indicated they might be better able to define the concept if they had participated in the training: another stated "*I am aware of what the concept is, but in terms of defining it I haven't been on the course*" [024, NewUni].

Although this implies that understanding Lean, and participation in training, might be linked, a respondent stated that while they had not been on the training they were aware of the principle and could define it [032, NewUni]. Some at NewUni understood Lean to involve metrics, visual management and productivity, although it was unclear on what exactly they meant by 'productivity' in a higher education context. Two respondents at PharmaCo also suggested that Lean was simply another technique which does not necessarily change processes or culture when implemented, and is no different to the other techniques with a similar name such as TQM or BPR.

Some respondents at OldUni described the Lean programme as some form of participatory process improvement emphasising the Lean principles of value stream, waste elimination and flow as well as employee empowerment: "*I've done BPR and all*

that kind of stuff before. I think the difference with Lean is that it's the people working in the process making the change" [010, OldUni].

In general respondents understood their Lean programme to be about (1) processes, (2) efficiency, (3) tools and techniques (including visual management and metrics), (4) waste reduction (including time) and (5) people perspective (including culture change, respect for people and empowerment). One respondent explicitly stated at Lean was a change in mindset, while another viewed it to be method of change management linked to process reengineering. The focus of understanding on Lean being a change is perhaps not surprising since all of the cases here appear to have initially implemented a Lean programme in order to facilitate some form of change. Three respondents at OldUni stated that Lean had been introduced in their organisation in order to cut costs, eliminate processes and one implied it was to control individuals.

Significantly, individuals with a strong sense of self-identity (such as professionals) were able generally to provide definitions of Lean that aligned quite closely with Womack's original conceptualisation, perhaps because they had experience of Lean utilisation in other roles and organisations or, in some instances, having taught on the subject (in the case of academics specifically). Despite this many could not (or would not) understand how it applied to their present role, claiming that it was inappropriate for their context and that it encroached on their autonomy and creativity. One academic suggested "*Lean is a typical example of large organisations not trusting the Departments*" [012, OldUni]. Ironically, although maybe not surprisingly, non-professional staff often struggled to define Lean but possessed a much clearer understanding of the part it could play in their roles.

While relatively few respondents explicitly suggested that Lean would only work in the automotive sector, a number suggested the principles need adapting significantly in order to be implemented within their context. Further exploration of respondents' reflections on their experience of Lean implied that there is a mismatch between their understanding, and their willingness to implement the philosophy. This will be explored throughout this and the next chapter.

4.3.2 Communicating the intentions of Lean

Evidence gathered from documentation and senior managers in the cases indicates that the desire was to introduce Lean Thinking as a means of establishing not only systems changes but also 'culture change'. Managers, in keeping with the notion of 'thinking', viewed the intention to move from inefficient bureaucracy to efficient administration as involving a shift in individual attitudes and behaviours, as well as adapting policies and procedures. Specifically within PharmaCo this was extended to the development of a single set of policies and procedures to be used over multiple sites. Culture change and so-called soft elements of Lean, often closely associated with the management of people, were advocated. A facilitator at OldUni emphasized that Lean is about "*a focus on customer service, quality and efficiency… We also want to embed Lean as how we do things around here; make it everyone's job to improve everything and for staff to take responsibility*".

A senior manager at NewUni gave expression to this in the following terms: "*You need to create a [Lean] framework and you need to create the leadership that goes with it. You need to train the people; you need to operate it for people to get used to it and to see the benefits*". While some senior managers and sponsors of the Lean programmes acknowledged that financial savings might be a long term result of the activities, this should not be the main driver:

> We have put the focus on Lean more on enabling things to happen better, which automatically reduces costs. We don't have cost reduction as a main focus; we have cost reduction as a result of doing things better. Finances are important to us, but they are not our prime driver. They are a result of the good things that we do.
>
> [032, NewUni]

On the other hand, the respondents that were the recipients of Lean, whilst acknowledging that Lean raised issues such as personal respect and empowerment, tended to overlook the broader people perspective and view it as primarily being concerned with processes, tools and techniques (including visual management and metrics), waste reduction (including time) and general efficiency savings. An administrative manager at OldUni saw Lean as "*process reengineering, or mapping, using a set of tools to reduce so-called waste*" whereas an academic at NewUni understood Lean to be about "*measuring everything in order to improve processes*". Thus, there was

often a gap between what senior management understood Lean to be and what was communicated to other respondents.

In part the multifarious interpretations of Lean Thinking in such contexts arose from problematic communication. By all accounts the delivery of the Lean 'message' in each case study lacked consistency. This arose since delivery was generally left to leaders and managers, and so the clarity and quality of the message became a function of individual traits where, unsurprisingly, as a facilitator at OldUni put it "*some are better than others*". The content of the message varied because, as already discussed, there was uncertainty about what Lean Thinking actually constitutes (intra-variation) and differences between managers in their interpretation (inter-variation). The style by which the Lean message was delivered was also variable.

The most obvious distinction was whether managers and leaders chose to 'tell' or 'sell' the Lean philosophy. Professionals especially recognised the importance of 'selling' the philosophy to their colleagues in order to gain their support, with a head of department at NewUni suggesting that "*you have got to sell the idea to get people on board*". 'Selling', however, may demand a level of knowledge and conviction regarding Lean Thinking that many did not appear to possess with some professionals (specifically academics) admitting to either not applying Lean rigorously within their area (diluting implementation of Lean tools and techniques) or altering it according to what they saw as the real needs of their team. Ultimately this may well have a direct effect on what subordinates understand Lean to be.

Those in charge of facilitating Lean at each case organisation highlighted the importance of semantics in both communication and getting people to buy in to the initiatives. It was also claimed that resistance could develop if the terminology was not adapted to take account of the ideals of the context. Furthermore, and somewhat paradoxically, even academics at OldUni and NewUni that appeared comfortable with commercialism in universities objected to Lean. The same head of department at NewUni said, "*I know that my group will be a little bit cynical about what Lean means, but if I don't use the word 'Lean' and use other [business] terms then they will be quite happy with it*". Indeed, other respondents tended to view support from colleagues for Lean initiatives as being

stronger where communication did not involve directly the use of the term 'Lean' because they seemed to believe that Lean was only appropriate in the environment in which it was conceived.

Evidently Lean Thinking has an image problem specifically within the case organisations here, as it does in much of the public sector. This is perhaps not surprising given the historical context and development of this type of work organisation, as discussed in Section *2.2 History of Work Organisation*. However, this was not so evident in PharmaCo, where employees stated that they were familiar with a toolbox of business improvement techniques and their associating terminology. The issue identified by respondents in this case was not a question over the methodology (or concept) but more with the perception that the organisation failed to 'stick' with and commit to one methodology for any length of time.

All four cases stated that developing new ways of working was a key aspect of their Lean programmes, and that it was important to communicate to staff the importance of taking ownership and responsibility for their own projects. This supports some of the earlier discussion in Sections *2.2.3 New Paradigms of Work* and *2.4.4 From Responsible Autonomy to Controlled Participation* whereby proponents claim that systems such as Lean create the opportunity for responsible autonomy and empowerment (Freidman, 1977) for employees. To help with this, the Finance Director at OldUni provided facilitators with a dedicated budget and hoped that Lean implementation would provide a way of responding to the growing need to deliver more, while consuming less. One facilitator stated that, while initially the aim was simply to experiment to see if Lean worked in a Higher Education context, this soon became a strategic priority written into the objectives of the organization as a whole:

> The university's strategic objective is excellence in teaching and research – Lean is the third pillar that extends that to the administration. There was the mission statement, which set the objective to become a Lean university where we deliver the best possible experience for students and where people feel they could come up with ideas. The message we've always been able to push over is: "*It isn't about taking people out of the process. It's about taking out the rubbish to free up these people to do valuable work.*"
>
> [022, OldUni]

This links to the ideas regarding shifting control from management to the worker, although in reality Beynon et al. (2002) propose that this translates to the harnessing of employee skills. Moreover, a lack of communication of early 'success stories' was cited by some senior managers as resulting in a negative attitude and response by some staff. Although the Lean programme is in its fifth year at NewUni, senior managers admitted they were not where they hoped they would be, primarily as a result of a lack of early success stories communicated to the rest of the university and a strong desire for some managers within the institution to retain control. Facilitators at OldUni also emphasized the importance of communicating a holistic approach to Lean, and that Lean is not just about support processes but also non-traditional processes such as teaching and research:

> We want to work with all Units to focus on customer service, quality and efficiency. We want schools to focus on Teaching and Research and students on Learning. We also want to embed Lean as how we do things around here; make it everyone's job to improve everything and for staff to take responsibility.
>
> [022, OldUni]

The communication of Lean Thinking at both NewUni and PharmaCo heavily relies on tools, such as visual management and A3's, whereas at RDA it is about establishing a framework for enabling continuous improvement. Each case acknowledged that their Lean programme would become a longer term strategic plan, and that it must be communicated as so. The sponsor at NewUni ultimately viewed Lean to be a five year plan which requires leadership and training in order to be fully implemented and embedded:

> We are in the phase [year] 3 where we have created training - we have trained quite a lot of people, not everybody yet, so there is more to do there. Now we have got used to the terminology and we all know how the A3s work and how some of the tools work. We are in the process of releasing the full power of the tools, and applying those a bit more aggressively. You have to make that the custom and practice for everyone.
>
> [032, NewUni]

Making new ways of working 'custom and practice for everyone' was seen as being potentially difficult at RDA, where respondents reported diverse methods of working within the organisation as a result of the range of previous industry experience. This lack of 'one way' of working was seen to make it challenging to introduce culture change and Lean. One respondent claimed that this was a potential weakness of the organisation who "*do not have a strong corporate identity but silos in each division*" [037,

RDA]. The organisation hoped that through its various different work streams, processes could be more streamlined to create a more integrated culture - similar to the message communicated by PharmaCo.

At PharmaCo, the HR department aimed to convey to employees was that of a change to the culture. While OldUni state on their website that "*the universities change management [programme] creates a culture of continuous improvement and respect for people*" this was not the message that staff received. The cultures at each of the cases were complex, whether this be between departments or between individuals and their way of working. At PharmaCo this challenge was a geographical one issue arising from a number of different cultures between sites resulting in difficulties for the sponsor to communicate a clear and simple message.

The HR director at PharmaCo aims to standardise these different processes and management systems in order to create a uniform way of working - 'The PharmaCo Way' which is a little like The Toyota Way, or the Nissan Way. The idea is that through the use of data analysis and developing a highly skilled workforce the company would continue to grow and avoid competition from cheaper producing countries such as China, thus emphasizing value adding and waste elimination. While contextually different, a senior manager at NewUni stated that Lean would help to differentiate the School from other Schools in the UK, thus emphasising value added and a stronger brand identity.

Lean training events (LTEs) are the primary way in which Lean Thinking is communicated and implemented in each of the cases, and the point at which employees first experience Lean. OldUni, NewUni and RDA use Rapid Improvement Events (RIEs) as the main way of communicating Lean and improving processes, while PharmaCo use designated Continuous Improvement Teams (CITs) set up to target specific process improvements and disseminate Lean Thinking throughout their areas. The link between employees' understanding of Lean and how it is communicated through LTEs was emphasised by one respondent who claimed "*Lean [events] created an understanding of the whole process, of what the other units involved were exactly doing and which inputs they needed to improve their work. These events provide you with a truly*

cross-functional and comprehensive understanding of the process" [016, OldUni]. The role, design and delivery of LTEs emerged from the interviews as being an important part of the Lean approach. The proceeding sections discuss LTEs specifically as a way to implement Lean in each of the cases.

4.3.3 Lean Training Events

Each case approached their Lean activities very differently, and while in one sense they differed in design and delivery, there appeared to be a common understanding in each case (by senior managers and sponsors) that the most appropriate way to implement Lean was through the use of LTEs. A discussion regarding different approaches often dominates the literature, and suggests a move towards kaizen type approaches, tools and techniques (Radnor et al., 2006) to suit the needs of the organisation - a 'fit' approach. Moreover, evidence in Section *2.4.3 Skills under Lean* explored the importance of both skills and training. The approach to LTEs used at OldUni indicates a methodology more associated with quality management where the Lean Team follow a robust methodology of PDCA[12] to apply all processes aimed at improvement (Source A). This involves a weeks' RIE or 'blitz' whereby a project team is removed from the workplace, typically for 5 days, chosen by the Lean Team in partnership with the Finance Director.

A review of some of the feedback by participants following an LTE in 2010 (Source E, 2010) suggests they generally enjoy the team-working and collaboration aspects of the training, and the opportunity to discuss projects. However, evidence from interviews indicates that respondents often feel that the facilitators and sponsor instruct staff which events to take part in, rather than reflecting any potential for them to play a role in deciding and shaping the processes to be reformed themselves.

There appears to be overtones with some of the discussion in the Literature Review which proposed that the work and skill requirements under Lean are linked to Lean *systems* of work and defined by the *requirements* of Lean i.e. 'doing more with less'

[12] Plan Do Check Act methodology, also known as the Deming cycle, is a four stage methodology for improving business processes and implementing continuous improvement.

(Rhinehart et al., and Delbridge, 1995). In the cases here, respondents perceived there to be a level of management control evident as a result) some claimed that they had no choice other than to participate in a particular LTE as a result of pressure from management. This raises the debate over whether Lean shifts 'control' from 'responsible autonomy' (as described by Freidman, 1977) towards 'controlled participation' as senior managers were seen by some of the respondents here as managing the involvement of workers in the system. One participant recalls how they had little opportunity to not be involved in LTEs:

> I don't feel to any degree that I have an influence on the redesign or whether I can attend or not. The facilitators decide which processes they think need redesigning and we get sent to a Blitz, and taken off our day job for a week to do that. I don't think they take into consideration who actually needs to be involved. Problems then happen later down the line because the right people have not been involved from the start.
>
> [010, OldUni]

While this does not indicate deskilling, per se, it does suggest that, as Worthington & Hodgson (2005) point out, 'control' is different in non-automotive settings. That said, NewUni take an approach which mirrors the automotive industry and takes the form of 'away days' at an automotive plant. The training typically involves academics taking part in building a car. Training is not compulsory, although the Dean hopes it will become so in the future while also expressing his wish that at least all of the Executive Board attend the training within the first three years. The Lean Training Academy[13] delivers the training and teach Lean leadership skills and techniques, with delegates learning how to use the tools to eliminate waste and continuously improve. Training also takes the form of 'Lean Immersion' days which are 1 day intensive programmes.

There is currently no training for individual processes within the department which are led by members of the Executive Board who have not necessarily been trained in Lean techniques as a result of the non-compulsory nature. This approach has mixed views by participants - while some feel that there ought to be mandatory training for those involved in leading redesign processes and projects, it is felt by others that it should be left to the individual to decide on their involvement.

[13] Modules covered include communication, driving change, policy deployment tools, Kaizen, Quality Mapping, Value Stream Mapping, Lean Leadership (Source H, 2012).

One-off training events are also used by RDA, however these are delivered in house with the facilitation of the HR department. At management and leadership level training is provided for those who take part in Lean, as well as those that do not specifically lead a Lean project. Those participating in process improvements are also trained in the tools for that specific process, and training is delivered by local consultants, Nissan Motor Manufacturing (UK) and the sponsor (Source L, 2010).

Participants are taken from their work for three or four days to be trained on three tools which, the facilitator believes, best suit the specific process. This indicates a 'blitz' type approach similar to that used by OldUni, and participants then use the tool they believe to be the most appropriate by working in collaboration with each other to improve the process. In contrast to the approach taken by OldUni these decisions *are* devolved to staff involved in the LTE, including the choice of tools and approach to redesign.

This implies a level of empowerment and responsible autonomy (Freidman, 1977) which is not seen by respondents in other cases. Moreover, RDA supports this with coaching which focuses on leadership skills and behaviour. The aim, according to the organisation, is to support individuals through learning, with a focus on developing desirable behaviours and competencies for their Lean programme. Coaches are usually individuals within the organisations who have more experience and expertise of Lean and process improvement.

The approach taken by PharmaCo differs significantly as training takes place both off site (away days) and in company (through CITs). External consultants are employed to train on the specific principles of Lean and are usually affiliated with industry leaders such as Nissan Motor Manufacturing (UK), as well as other pharmaceutical manufacturers. CITs, set up for the purpose of specific projects and generally responsible for their own training, consist of a number of workers across the organisation and typically include the following:

- 1 x Production worker
- 1 x Technical worker

- 1 x Process Engineer
- 1 x Chemist
- 1 x Quality Control inspector
- Office Based worker(s)
- Operator(s) (where the process improvement involves changing their working patterns)

The evidence indicates that while a range of approaches is used, this is in line with literature on Lean approaches beyond manufacturing (Radnor et al., 2006). What is interesting is that questions emerge with regards to a move from responsible autonomy towards management participation (Dohse et al., 1985), and a number of the issues raised in Section *2.4.4 From Responsible Autonomy to Controlled Participation*. The next section explores respondents' experiences of LTEs in more detail in order to understand the issues further.

4.4 Employee Experiences of Lean Training

The previous section showed that in each of the cases the most common approach to introducing Lean was through training events, and respondents reflected on their experiences of training by highlighting key themes such as: the intentions of training; focus of delivery; responses to training. The evidence here provides some support for the conclusions drawn by Allan & Sinha (2013) that internal training mainly dominates Lean in non-automotive settings.

It was interesting to note that respondents in each of the cases were expected to participate in LTEs in addition to their daily roles and responsibilities. This implies a form of managerial control, with evidence for what Baines (2004) suggests as limited opportunities available for staff to participate in training. Here it appears to be as a result of a lack of participation in the decision making process. This section explores respondents' reflections on training.

4.4.1 Intentions of Lean Training

While the approaches to training differed across cases generally the intentions of it were to (1) increase awareness of Lean more generally, (2) to encourage staff to

challenge behaviours and attitudes and in some cases (3) to train managers to implement Lean. This indicates a mix of what Shah & Ward (2004) refer to as a philosophical focus and a practical focus, as well as providing support for Hines et al.'s (2004) assertion that Lean has shifted from being operationally focused to strategic focused. LTEs at OldUni and NewUni are designed around a focus on the philosophical (or 'soft) aspects of Lean and are designed in order to communicate and increase awareness of Lean, according to the facilitators. Thus, training was the primary means by which participants would be involved in Lean and introduced to the philosophy, providing a starting point for activities. Such 'awareness training' consisted of an overview of Lean concepts and application in a specific environment and often included topics such as the history, roles and responsibilities, quick-wins (or success stories in the case of OldUni), methods, metrics, and change.

Many senior managers and facilitators saw this as a way of providing staff with an introduction to the Lean programme and how it could be applied to their work, their space and department to cut costs and increase efficiency, as well as to move away from the perception that Lean was only applicable to manufacturing contexts. One facilitator commented:

> We get people involved and show them some of our success stores. We don't just sit them and bore them with the philosophy. We try and relate it to their environment. Get the right people together, in the same room, with the right data. Question why things are done until the status quo is understood. Then, challenge the status quo. It's all about raising that awareness and letting people know what we are doing. That way it makes it much easier to implement Lean process improvement.
>
> [022, OldUni]

The intentions at OldUni and NewUni of the training approach was to increase awareness of how Lean applies to non-manufacturing contexts, however the experiences of those involved does not support this view. One respondent reflected on their experiences as follows:

> The training wasn't what Lean management [here] is. I went to a car factory and I saw how people could take something that was less efficient and maybe make it into something that was more efficient. It told me how you can run things in that kind of environment, but Higher Education is not the same as building a car.
>
> [031, NewUni].

This raises questions about the appropriateness of the training itself, as much as the suitability of Lean to the context. Both RDA and PharmaCo claimed they did not

explicitly use LTEs to increase awareness of Lean but more to challenge existing behaviours in order to encourage staff to be more accountable, visible and productive. This indicates a more practical perspective (Shah & Ward, 2004) and supports Alvesson & Willmott (2002: 8) who point out training, which can be seen as a method of organisational control, is not always seen by employees as being appropriate, useful or fit for purpose (Graham, 1995).

A level of awareness with regard to Lean philosophy and its implementation was therefore assumed, with PharmaCo focusing their training on skills and behaviours specifically at leader and line manager level. Through LTEs participants were encouraged to challenge their existing attitudes and behaviours: attitudes were seen as being personal and internal and therefore were unlikely to be changed through intensive training, according to the sponsor at RDA. On the other hand, behaviours were seen as being external and more observable therefore involving staff in LTEs was seen by all sponsors as being important in getting employees to change their mind-set.

Training was used by some senior managers and facilitators to challenge some of the deeply rooted traditions and attitudes of workers (OldUni), attitudes linked to the type of job (NewUni and RDA) and the age of some employees (PharmaCo). Institutionalism, attitude and age were all seen as being a barrier to Lean by more senior staff at the cases, as well as the assumption by many senior managers that professionals were less likely to want to engage with LTEs. A senior manager at NewUni stated LTEs help their organisation to question the attitudes of employees, a view supported by many line manager respondents at PharmaCo who claimed many staff displayed a 'this is the way things are done around here' attitude. Therefore LTEs could be used to educate staff with the new Lean direction and question them on what they currently do. The outcome, according to the sponsor at NewUni, would be a willingness to implement Lean:

> Part of our training is about familiarisation with the people about the full on mission of the school. Where is it going? What are the key metrics? Once they get to see that in detail and they see how it works [and] are generally positive about it. I would even say that they are keen to get it applied.
>
> [023, NewUni]

There was a clear distinction between managers and facilitators, and front line respondents with regards to LTEs. Many of the latter claimed the intensiveness of the training undervalued it and weakened its impact. Some staff at RDA suggested a softer approach, such as coaching, to be a more suitable method to help develop and challenge existing attitudes and behaviours. Coaching was used by both RDA and PharmaCo to support individuals in the organisation, while learning to achieve the specific aims of Lean – an approach claimed to help encourage certain behaviours. This was seen as a more useful tool than classroom training, as one Lean facilitator articulates:

> What we used to use was Lean techniques to be able to deliver the change: "*I'll get everybody into a room and I'll train you for the seventh time that I have trained you on this and somehow expect that this time you are magically going to go back and do everything perfectly*". Over the seven years we have worked with the organisation to learn that coaching is a hugely important and powerful tool that can be used. Training has its place but it's not the be all and end all.
>
> [036, RDA]

This follows a more 'organic' approach to Lean by advocating "*experience rather than training*" to guide employees to "*help them make their own mind up*" with regard Lean [036, RDA]. This soft, developmental approach was developed from the extensive experience of the individual driving the change. Interestingly at PharmaCo, current attitudes of LTEs within the organisation were guided by past experiences, and a lack of questioning of processes by employees.

Thus, LTEs were aimed to develop these soft skills, such as participation in decisions making and problem solving skills, with one manager stating "*just because we have done it that way before doesn't mean we have to keep doing it that way*" [048, PharmaCo] – implying a 'responsible autonomy' approach (Freidman, 1977). The quest for a 'can-do' attitude was promoted within PharmaCo in order to help the business to improve. One manager explained its importance:

> Anyone can do 'can-do' in a fire fighting situation and I think that it is about showing all of those 'can-do' attitudes and spirits. We need to improve the attitudes of staff because the business needs them to improve.
>
> [048, PharmaCo]

A similar view was taken by facilitators at OldUni who claimed it was important that they constantly question the "yes and no's" through the training process, and to encourage change. Those directly involved within the Finance unit at OldUni appeared to be more accepting of Lean in their attitude, than other departments. One facilitator

surmised that this was partly a result of the Finance Director being the main sponsor of the programme, thus indicating some degree of pressure to participate. As the unit had been involved in Lean activities the longest, and all respondents interviewed within this area displayed a positive attitude, respondents in other units saw these colleagues as 'subscribing' more to Lean. According to a facilitator, early success stories have helped develop this positive attitude:

> The most mature part of the organisation that has been doing Lean for the longest is Finance, and I think certainly in areas of Finance you can see an attitude which is much more accepting of change, much more understanding of the customer because our biggest sponsor is the Head of Finance so they [the department] saw some early wins.
>
> [001, OldUni]

None of the four cases were actively collecting data on a possible change in attitudes or responses following participation. Line managers (LMs) were seen as being an important influence on culture and therefore it was recognised at all cases that training these individuals into eventual 'Lean champion' roles was crucial. A number of senior managers across the cases claimed those who were working with LTE facilitators and sponsors were displayed the right behaviours, thus 'championing' Lean. This was seen as a positive behaviour by those higher in the organisations, whereas ambivalence or choosing to not actively engage with LTEs was seen as displaying the wrong behaviours.

4.4.2 Focus of Training

Where the delivery method for the training was questioned by respondents, there is certain to be concomitant doubts with the focus of that training. The focus was on what some respondents saw as 'Lean skills training' or 'Lean training'. 'Lean training' was seen as being linked to the philosophy of Lean, whereas 'Lean skills training' was linked to the specific skills associated with process improvement. That is to say the difference between storytelling, i.e. where Lean has come from, and process specific skills such as problem solving, kanban, visual management.

The sponsor at NewUni suggested that they "*have some way to go*" in getting everybody that is needed to be involved in Lean to be trained, therefore resulting in only a small group of staff currently trained in the required skills. A lack of investment in the right type and focus of training has, at times, led to what some claimed was a lack of enthusiasm to support Lean. Those senior in the organisation suggested skills training

does play a vital role in the training agenda: "*I think what Lean is at the moment is the facilitation of skills for changing business processes*" [021, OldUni] however many administrative and support staff working with the process improvements identified a lack of sufficient ongoing training post-LTEs.

Experiences of those who have participated in LTEs suggests some felt they required more understanding and training on how to deal with change, as opposed to Lean training. Participants at PharmaCo identified such skills as problem solving, brainstorming, and cause and effect diagrams as being crucial to their everyday jobs but unidentified by their facilitators, the HR department. Although they have already identified the need for these skills, some of the respondents suggested they personally lack the knowledge of how to translate these skills into process improvements. While many traditional Lean skills are associated with automotive manufacturing, there is the acknowledgement that they are also needed beyond this context. Most importantly, one respondent identified the need for training to be embedded in the culture in order to be successful:

> When you look at Toyota they always seem to have more time to train their people. I would say we should concentrate not necessarily on 'Lean training' but giving people certain 'Lean skills'. Skills such as brainstorming, basic process training and backup knowledge, so that the process they are operating on they become more knowledgeable on. When they are more knowledgeable, they become better able to contribute.
>
> [050, PharmaCo]

Many respondents explicitly stated they appreciate this skills development aspect (when it is available) claiming when the focus was on tools and techniques they were able to apply these more than when the focus was on Lean philosophy. Although training on actual Lean principles is somewhat limited at RDA, the facilitator saw the devolution of the ability to choose the skills needed as being vital to Lean:

> The skills made available to [LTE participants] are dependent on what the problem is. So rather than training being a Lean event, our staff have Lean training so that they are getting the Lean tools and techniques that they need to see them through the improvement. I probably use what I feel are the most appropriate tools and techniques and we identify what feels like the best tool for to use to help us analyse a particular problem and to find a solution to that.
>
> [036, Facilitator, RDA]

This perception was supported by other respondents at RDA who had participated in the LTEs. The picture at OldUni, NewUni and PharmaCo appears a little different; there

was a general recognition by the change agents and LTE facilitators that skills are important and "*a big part of Lean from a people point of view*". This was supported by the HR Manager at PharmaCo who suggested that their job as facilitator is "*making sure that people have got the skills".*

On analysis, the evidence indicates that LTE participants here do not feel they are being adequately training in multiple skills, although it is too simplistic to assume that this is deskilling as identified in Section *2.4.3 Skills under Lean*. If we consider that skill has, traditionally, determined how control is exercised and that in Section *2.2.2 The Emergence of Mass Production* we saw how under Fordist and Taylorist systems workers are seen as being deskilled in order for management to maintain control over the labour process. This is not the same as is evidence here, however it does suggest a narrowing of skills in a controlled manner supporting Dohse et al. (1985) in that some skills appear to the respondents here to be restricted and threatened. Garrahan & Stewart (1992) propose that employees who see themselves as not being developed in a wide range of skills could consider themselves being deskilled.

4.4.3 Developing Line Manager Skills

LMs were seen by all respondents as playing a pivotal role in implementing Lean, and senior managers often viewed a purpose of LTEs as being to develop these individuals. However, while this was the rhetoric, only PharmaCo actively invested in developing LM skills as part of their training. It was felt by many in OldUni and NewUni that this specific aspect was needed; some respondents suggested their LMs did not have the right skills to be able to support or facilitate implementation of Lean. A number of those involved in Lean expressed negative experiences of their LMs often criticising them for lacking the most basic people skills, let alone Lean-related skills. This was not seen as the case within RDA and PharmaCo where LMs were trained in skills which may be required to implement Lean.

It was perhaps this theme which highlighted the most diversity in the approaches between the cases; the sponsors at both PharmaCo and RDA expressed the need to integrate LM leadership development into their Lean activities in order to create an atmosphere with which to motivate staff and to ensure change for the organization.

PharmaCo actively involved these LMs in implementation through developing support. Development activities are integrated into Lean process changes through training, CITs and communication regularly on Lean. According to the sponsor the aim was to focus on the development of leadership competencies, specifically change management, which the HR department hoped would be assessed in the future through an integrated and targeted performance management system, therefore indicating an incentive for LMs at PharmaCo to engage in developmental activities.

A similar approach was favoured by RDA, although their focus was on the comprehensive use of coaching to target personal development. Courses at RDA often introduced general change management concepts to enable leaders to understood how to implement process change or improvement and how this impacted their employees. This was seen by some LM respondents as providing them with a forum to discuss Lean, before then participating in a focused process improvement with their team. Longer term support was then provided through the technique of coaching to target behaviours and attitudes.

It was seen by the majority of respondents at OldUni and NewUni that specifically developing LM skills through LTEs would be problematic. LMs, more generally, were seen as being 'difficult' largely as a result of their perceived sense of self-identity. However sponsors and senior managers often recognised the need to develop a certain type of leader to 'enable' Lean and this could be done through training. This was especially important to a LM at OldUni:

> Even if you have a good set of [managers] who can do things and think the right way, the manager is in a position to suffocate it. It is about the environment, and it is about enabling and supporting. But we are all different, and therefore we can't standardise that. It's not a process!
>
> [013, OldUni]

Other than loosely using the term 'enabling leader' there were no other indications of what exactly was meant by this other than leading by example and guiding staff. The HR Manager at PharmaCo claimed they "*sort of have specific courses that we would put various supervisors, team leaders, managers on*", but could not list any specific management development courses available to LMs (Lean skills courses aside). Similarly, the facilitators and sponsor at OldUni did not seen leadership development

activities being associated with Lean, although they have since introduced a Lean Leadership development course which was not offered at the time of data collection for this thesis. Notwithstanding these arguments LMs, as much as staff, felt the pressure to participate in training. The evidence indicates that, as Thompson (1989) identifies, respondents who were LMs had limited choices regarding their involvement due to the power inequalities between themselves and sponsors of Lean. This is similar to the inequalities experienced between workers and LMs, and implies that LMs managers are caught up in the system of managed participation as much as their staff.

4.4.4 Responses to Training

Respondents across the cases reflected in detail on their experiences of LTEs, indicating many of the tools and techniques they were presented with during training were hard to work within in their context. Interestingly, one LM suggested that such tools have "*allowed me to make more explicit what [my team] are doing and what is required of them*" [030, NewUni]. However, one LM asserted that a balance is needed between the use of these forms of control and visual management, and the experiences and knowledge of staff:

> If I bring an example of a new undergraduate programme the market data [produced by Lean tools and metrics] might suggest that is absolutely the right subject to be bringing in. It might say "*go, go, go*" but I am also happy to say *"Stop! Six tenths of this is not right!*" You have to defend that, and I am more than happy to do that, but it is finding that balance of how you use those metrics. If you use it to say "*well actually, no, it doesn't matter the data says this!*" then it doesn't work. [026, NewUni]

This is one examples of what might be seen as an academic defending their frontiers of control (Section *2.4.2 Defending Frontiers of Control*). There is some support, in this case, of respondents who felt that not only was there involvement restricted and managed (Bach et al., 2005) but that they sometimes encouraged each other to resist Lean interventions into the frontiers of control they define and develop themselves (Taylor & Moore, 2015). This 'approach-avoidance' tactic (Sincoff, 1990) was sometimes seen by facilitators and sponsors, specifically at OldUni and NewUni, as being unconstructive.

One sponsor judged such individuals to be "*luddites*" [015, OldUni], but it raises questions over how some of the respondents used their sense of professional self-identity to defend frontiers of control and limit their engagement with Lean. This is in

contrast to some of the discussion in Section *2.2 History of Work Organisation* which implies that workers do not necessarily have the opportunity to engage in this type of resistance. The respondent above was referring to those staff who were "*stuck in their ways*", "*unwilling*" to change their current behaviours and often chose not to participate fully in LTEs.

This raised the issue of institutionalism, specifically within OldUni and NewUni but also present within PharmaCo. Further analysis implies that each of these cases have a long history and strong sense of self- identity and subjectivity within professional respondents[14], and was seen by sponsors and facilitators as having their own way of doing things and unwilling to change.

Ironically a number of other respondents also shared this view, but in terms of their management. At OldUni sponsors were referred to by some professionals as "*lunatics*" who had haphazardly implemented Lean in an environment without thinking: one respondent stated "*the lunatics [sponsors and facilitators] have taken over the asylum*" [015, OldUni].

Far from the negative view portrayed by senior respondents, a number of interviewees suggested they had valid reasons for being unable or unwilling to participate fully in training. These included: Lean not being fit for purpose, individuals not being provided with the skills, not enough time 'back at the office' to implement these changes, the extra effort required to carry out new responsibilities and a stressful working environment. Additionally, some felt the type of training was simply not appropriate to contexts such as their own:

> [The training] told me how you can run things in that [typical] kind of environment. I look at Lean and think "*Well within this environment I can see exactly what needs to be done!*" … It is not the same as building a car! Sometimes people say that and it's perceived as the person being negative, and so people don't say that anymore. But the fact is that it is not the same as building a car.
>
> [031, NewUni]

This reflection is further supported by another respondent, an academic, who claimed not to be pessimistic to Lean *per se* but had difficulties in understanding its application

[14] Professionals at OldUni and NewUni were classed as the academics, PharmaCo as the pharmacists and researchers, and RDA as the consultants.

to their context:

> I think my impressions of the training were "*golly that was interesting! Do we really think we can apply this wholeheartedly to our organisation successfully? That'll be a challenge!*" [Laughs] A challenge that might be a challenge too far, I think!
>
> [033, NewUni]

These responses were more apparent in OldUni and NewUni where, arguably, professional self-identity (in this case UK academics) and subjectivity was strong. There is some support for the conclusions drawn by Willmott (2004) in that some academic respondents perceived degradation of self-identity to result as a consequence of the introduction of Lean. This was felt to go beyond the simply breaches of control, and established effort-bargain between management and workers.

In contrast, experiences in RDA and PharmaCo did not support this trend although they did have a number of professionals within their organisations. These professionals appeared to more readily and easily accept their new roles and responsibilities, and at PharmaCo LTEs were seen to be 'part of the job' and a part of their bargain effort.

The issue within the two universities appears to be the issues that Giddens (1991) discusses in that these workers retained a significant amount of discretion and distance from managerial control in general, and this was mirrored in their perceptions and experiences of Lean. By choosing not to engage with Lean activities, these some of these respondents felt they were able to "keep a particular narrative [of self] going" (idem: 54). This narrative rests on the possession of superior knowledge and understanding, and by preserving this workers can outwit and outsmart management efforts to control their work and the labour process.

4.6 Leading and Managing Lean Implementation

In each of the four cases the responsibility for leading and managing Lean was with LMs, whereas the role of senior managers was to be seen to support Lean activities at a higher level: only in PharmaCo and OldUni was a member of senior management a sponsor of Lean. Moreover, in most cases, LMs were expected to take on Lean activities in addition to their existing roles. This section explores the data on how Lean is managed and led in the cases with reference to the main themes which emerged such as

the role of the LM, management style; LM commitment; senior managers' role; and the HR department.

4.6.1 The Role of Line Managers

In each of the cases there was evidence that Lean activities were changing (sometimes significantly) the ways in which LMs carried out their work, and so not surprising a key theme with regards to leading and managing Lean-type activities was the role of the LM. A number of senior managers specifically referred to this role as that of a 'champion' or a 'facilitator' of Lean, with additional responsibilities. Although sometimes resistant to this role, many LMs did see their task as being one of leading and facilitating at a team level in order to guide staff in identifying and implementing process improvements.

Many also realised the importance of their own skills and behaviour, even if they did not necessarily want to lead Lean. Thus, some LMs chose to consent to Lean (Thompson, 1989) and comply with it, while at the same time displaying some resistance in terms of how they implemented it (this will be discussed in more detail in Section 5.3.2 Line Manager Resistance).

Specifically at RDA and PharmaCo LMs were seen as 'facilitators' who would ultimately become 'change agents', as envisioned by proponents of Lean such as manager Womack & Jones (1996), Radnor et al. (2006) and Grove et al. (2010). A number of LM respondents felt the need to comply with this image of their role in order to be seen as behaving correctly (supporting Scheeres & Rhodes, 2006). According to one LM, they "*must use Lean to set parameters by which authority and behaviour is challenged*" [021, OldUni] indicating that some respondents understood their role to include a level of control and authority over their staff.

This is similar to Bunting's (2004) 'willing slaves' and implies an approach not that dissimilar to manufacturing (discussed in Section *2.2 History of Work Organisation*). Most LMs interviewed believed that their actions and behaviours were likely to influence their staff, with evidence indicating that where LMs did not necessarily comply with Lean, some of their team also did not embrace it. This was summarised by a number of LMs at PharmaCo as being the task of "*displaying the right behaviours*".

The HR director stated that "*displaying behaviours is a vital part of their [LMs] role and they must encourage their staff through doing this*". Evidence from other respondents also emphasises the perception of using LM behaviour as a means of "*getting [people] on-board…a fundamental role at every stage of the Lean process, because without their support it would fall down*" [030, RDA]. Many LM respondents themselves suggested that without their support and facilitation often initiatives would fail. This role was emphasised by one respondent at NewUni:

> I see [my role] as a facilitating role…identifying ways in which we can measure change, where one person might be sitting on a body of knowledge without letting everybody else know and someone else might be sitting on another body of knowledge and its making sure those people not only talk to each other but also share it.
>
> [029, NewUni]

This was certainly the role that sponsors and senior managers envisaged LMs taking on. Similarly nearly all the facilitators interviewed regarded the success of Lean as being linked to the leadership, management and facilitation ability of LMs also suggesting where they believed where LMs did not integrate Lean into their roles, staff were less likely to do so as a consequence. This view was supported by a respondent who claimed "*it is important that [LMs] are seen to buy-in to it, as well and start using it in how they communicate with us [shop floor]*" [041, RDA].

LMs themselves viewed their role as being broad but including communication, motivation, facilitation, selling, leading and behaving in a way which 'fits' with Lean. None of the cases had inbuilt these aspects into LMs job roles and responsibility; rather it was assumed by them. Two LMs gave expression to this in the following terms:

> It is my job to bridge the gap between sponsors and my staff. I suppose it's getting people to buy into it and making them understand that.
>
> [014, OldUni]

> I see my role in terms of not telling them what it is but sort of sharing that with them and building that into their daily roles and building it into their everyday role.
>
> [024, NewUni]

Perhaps, therefore, there is room to suggest that LMs can play a developmental role within Lean implementation for their staff. An additional role that emerged as being important for LMs to take on was that of involving staff. This was especially within OldUni and NewUni where LM respondents themselves acknowledged that buy-in from

team members and colleagues has not been easy. Maintaining the focus of their staff, encouraging engagement with activities and motivating were especially important to one LM:

> I think my role was making saying "*let's not be negative here. We've got to believe in it. We've got to give it a chance. We know that it's been proven in the past that people have had success with the Lean technique.*" You've got to be acceptable to change; we have got to have people who are forward thinking. We know that we have cumbersome processes here, and this is the way that we have got to tackle them…my role was really trying to keep people motivated and focused.
>
> [003, OldUni]

It is clear that in each of the cases LMs were expected to take on additional roles post-Lean that they perhaps might not have done beforehand. OldUni and NewUni operate in what we might term a 'strong' culture (O'Reilly, 1989) which appears to have had the ability to manage the effort that employees give, thus LM respondents appear to have taken on these extra responsibilities despite not being rewarded for them. It is therefore interesting to note that the LMs in this research appear to consent to Lean, and the extra work required helping facilitate the management and leadership of it, without much question.

As we will see in the next chapter, while a number of professional respondents outwardly 'consented' to their new role, the reality was often ambivalence and organisational misbehaviour (Ackroyd & Thompson, 1999), or through what Roy (1952) defines as 'making out'. This is where some of the (professional) respondents in this study, admittedly, cheated the system and applied the amount of effort that they felt they could get away. This, obviously, had consequences on their team when they were in an LM position.

4.6.2 Management Style

Management style was a theme which emerged from each of the cases, and was seen to either help or hinder Lean implementation. Interestingly one of the biggest differences between the cases emerged with regards to these issues with more diverse styles considered to be present at OldUni, NewUni and RDA than at PharmaCo. This diversity was seen by a number of respondents at different levels to be problematic. LMs in the former three cases were perceived by both senior managers and their staff as being more openly resistant to change than managers within PharmaCo. Where some

respondents claimed one style should be used to encourage the leadership and management of Lean, i.e. an enabling leader, others suggested diverse personal styles should be used to 'fit' with Lean. One senior manager elaborates on the differences within NewUni:

> [LMs] don't all need to have the same management style. They can all have different styles, but, we need to work with them to incorporate that sort of Lean Thinking and Lean process management into what they do and the way that they feel comfortable communicating things. So, if they feel a part of the process and they can sign up to it in a way that they feel comfortable and that they think is believable, then that is going to translate much better to the people that they are with.
>
> [031, NewUni]

At PharmaCo one LM believed that Lean requires "*a certain style that generates success*" [049, PharmaCo] thus indicating universalism, although he was not able to articulate precisely what that style should be. In contrast the facilitator at NewUni claimed that each personal style should be encouraged in order to get LMs sign up to it in "*a way that they feel comfortable with*" [029, NewUni] thus indicating an adaptive style. Adaptive styles were more likely to be encouraged in the cases that contained a higher number of professionals who had diverse ways of doing things. These respondents were sometimes perceived by their colleagues as being "*control freaks*" [021, OldUni] with an over-controlling management style whereby they attempted to intensify their influence over staff as soon as Lean approached their area of work, in order to avoid engaging with it.

Management style was an important consideration for the sponsor at RDA who claimed that there was very carefully considered by herself and the HR department before choosing to invest in Lean-type activities at an organisational level. The reason for this was the diverse styles present in the knowledge-based environment, although one respondent did wonder whether implementation "*would be a lot easier if everyone shared the same management style*" [041, RDA]. Thus, the debate which emerges is between an adaptive style of management and leadership, as used by OldUni, NewUni and RDA, and a prescriptive style of management, as used in PharmaCo. However, the precise elements of that prescription are not known.

While some respondents at PharmaCo explicitly claimed that a specific style of management was associated with the success of Lean, none could illustrate the precise elements of this 'Lean leadership style' other than referring to the 'right behaviours', which it was claimed could be taught to LMs through leadership development and LTEs. This perhaps presents a number of complexities, specifically when implementing Lean to organisational contexts where there is no 'one best way'. Such management behaviours, claimed one respondent, must not be driven by the top of the organisation in order to succeed:

> I think the behaviours have to be displayed from the top down, and then you expect the response to come from the bottom up. You have to display those and that's where we have barriers. Behaviour has to be displayed from the top and without that it will not succeed.
>
> [050, PharmaCo]

It could be implied that the difference here is not just an issue of approach to leadership and management, but more to do with the fact that LMs at PharmaCo considered Lean to be part of their job and therefore inbuilt this into their management style. The repetition within interviews by LM respondents of the term 'displaying the right behaviours' indicates that this is what has been communicated to them, and they regularly exceeded the effort bargain in order to fulfil what they believed to be correct for their role.

It could be argued that this forms part of managements' attempts to standardize and routinize work. However this research suggests that, in contrast, Lean is being used in the cases here as a way to control workers through a managed process (Dohse et al., 1985). What is starting to emerge from the discussion in the sections above is that a new form of both 'control' and 'empowerment' exist (Adler, 1995).

4.6.3 Line Manager Commitment towards Lean

From the interviews with LMs there was evidence to indicate that number of them felt pressure to support Lean, as implied above. This was either as a result of the culture and hierarchy, or due to a sponsor or senior manager approaching them. Some also indicated that it was their role as a LM to be committed to Lean, which suggests a level of 'responsible control' (Friedman, 1977) whereby some senior managers (most notably in OldUni) used a number of methods to extract more labour from LMs. This did appear

to be subtle and in a way that encouraged the worker to manage themselves in the desired direction.

This type of 'control' often involves raising skill levels, which was achieved by LMs being encouraged to participate in training, in a managed way (Dohse et al., 1985). To some extent this was also seen at NewUni for academic respondents, in common with Thompson's (1989) assertion that this type of control is associated with both highly skilled (academics at NewUni) and central workers (support staff at OldUni) whom management rely more heavily upon for their continued and flexible participation (Thompson, 1989). Reinforcing the findings of Vidal (2007) it would appear that such control is not intrinsically based on an intensification of work but more of limited worker discretion.

In some instances this pressure was through a lack of choice, for example at NewUni all members of the Executive Board were LMs and automatically assumed the roles of 'Lean champions', all being charged with leading and managing specific projects. Each respondent here claimed they had no choice other than to be seen to support Lean, with the sponsor acknowledging that this was the reality. Two respondents reflect on this pressure below:

> As part of the Executive here we share a commitment to some of the core principles of Lean management techniques and philosophy. It is very much driven by [the sponsor] and, of course, his passion.
>
> [028, NewUni]

> I suppose being part of the Executive Team you feel you do have an obligation to try and make sure that you can implement it. If we are not trying, then there is no hope for anyone else. So, I think there is an element whereby people want to try and make it work, and try and make the best from it.
>
> [026, NewUni]

This was in contrast to LMs at RDA and PharmaCo who did not indicate they felt pressure to commit to Lean, but felt it was a part of their role. Specifically in PharmaCo Lean was seen by all LMs interviewed as inbuilt into their jobs: the HR department were at the time of data collection designing a performance management system that would support this.

A different pressure to commit to Lean was evident at OldUni. As the Finance Director was the sponsor, or the "*purse string*" as some respondents articulated it, some LMs felt the need to engage with Lean in order to have positive outcomes for their unit. As one respondent asserted "*there are a lot of politics within the organisation because we know that Lean is coming out of our Finance Office*" [014, OldUni]. The Finance Director himself acknowledged that some staff involved in Lean might feel a pressure from him, yet did not see a problem with this, suggesting those LMs who "*are not strong enough to stand up [and do Lean] … are not the right people in the job!*" [015, OldUni] which perhaps implies a level of 'direct control' (Friedman, 1977) linked more to traditional work organisation literature discussed in 2.2 History of Work Organisation.

One LM, who works under this Finance Director, was interviewed for this research and he himself admitted that he felt pressure to commit to Lean as the unit was known across the organisation as an *"exemplar"*. Documentary evidence has already revealed that the Finance unit at OldUni has engaged in the most processes to date, with the respondent claiming he felt "*under some pressure*" [003, OldUni] to commit to and support the concept as a result. The sponsor, the Finance Director, saw this pressure as being positive for Lean:

> Am I worried if a unit feels under pressure by me to embrace Lean? Not at all! Why? Two things! One - I can't always be everybody's pal. Two - resources are finite and I'm responsible for making best use of our resources. So, do I want them to be able to demonstrate to me that they are using their money well? *Absolutely*! Do I want them to feel under pressure for that? *Absolutely*! Should they be frightened of falling out with me*? Absolutely not* and I would hope that they know that!
>
> [015, OldUni]

4.6.4 The Role of Senior Management

Senior management were not involved in Lean implementation in each case. While at OldUni, NewUni and PharmaCo the organisation generally had at least one member of senior management supporting activities, albeit indirectly, at RDA they did not have a sponsor who was sat at board level supporting Lean. While the sponsor claimed that senior managers were supportive, it was believed that they were unlikely to ever take on the role of sponsor. More broadly respondents across the cases indicated that senior managers, whether sponsors or not, theoretically have an important role in supporting,

encouraging and implementing Lean as well as overseeing the leadership and management of it. This would also include sponsoring Lean, top down, in order to provide "*leadership and direction*" [047, PharmaCo] and to set an example to workers. Implementation must, however, be bottom up according to respondents.

Striking such a balance between a top down and a bottom up approach was considered to be problematic, especially in PharmaCo where different sites within the organisation are given different levels of autonomy. The HR director, both a senior manager and a sponsor, saw his role as advising the HR department - the implementers - on introducing, managing and leading Lean in the rest of the organisation. Despite this the respondent admitted that out of the Executive Board, a total of six members, he was the only member who was fully supportive of Lean. This was seen as a barrier to Lean implementation, as it was believed fellow senior managers were required in order to dedicate the right time and resources to Lean in the future if the culture was to change. A view shared by other respondents in PharmaCo, for example:

> I hope Lean does get taken on board by the company as a whole and that they realise how good a tool it can be and hopefully we will continue it and make it a proper continuous improvement and Lean company.
>
> [047, PharmaCo]

Differences between sites has sometimes resulted in senior management saying one thing, yet LMs doing another, therefore indicating that senior management have little autonomy over some areas of the organisation. This has resulted in a lack of consistency and continuity of decisions across the organisation, and identified by LMs as needing a top down approach:

> I would say we need top down approaches but I think at the moment, from what I can see, a decision can be made but then it can possibly be changed again. That can cause disruption. People then say, "*well, what is the point?"* basically, "*it doesn't matter what I say because it will just get overridden*".
>
> [049, PharmaCo]

The need for full organisational support was a theme at the other cases too: one senior manager at OldUni stated without full institutional support for the concept there would likely be resistance as a result of a lack of sponsorship from higher levels. Sponsors at NewUni and RDA were seen as being more symbolic than being actively involved in supporting the Lean projects and activities. As one respondent recognised, senior management made it clear from the start that Lean was not their responsibility, or

under their jurisdiction. They did, however, agree to put their names on some of the projects in order to create the image of commitment:

> We have sponsorship at senior level, now that might be superficial sponsorship but it is still nonetheless seen as being sponsorship. Each director sponsored one by put their name to say "*I am in charge of this project; I will lend my support and my voice to it whenever you need me to, but equally I will stay out of it*".
>
> [036, RDA]

This is somewhat a similar experience to NewUni where senior management presence is not yet established other than the Head of School being the sponsor. While the sponsor claims that senior management within the organisation as a whole do support Lean, they have no desire at this stage to become project sponsors. Respondents have indicated that this has not necessarily been problematic, until the times when they are required to work cross-school and experience staff and LMs who are not using, or supporting, Lean.

4.6.5 The Human Resource Function

In each of the cases there were signs that Lean initiatives were changing (sometimes significantly in the case of LMs) the ways in which employees carried out their work and so it was surprising to many respondents that the HR function was not involved in the implementation of any aspects of the introduction of Lean specifically in OldUni and NewUni. Experiences within RDA are somewhat different as a result of a member of staff who sits within the HR function being responsibly for sponsoring the initiatives, and at PharmaCo where the initiative is driven by the HR department themselves.

Where roles had been altered as a consequence of Lean the incumbents expressed the view that there was certainly a need for their HR department to be participating in the events taking place because at OldUni, for example, there was disagreement regarding interpretations of how Lean Thinking fitted with an existing public sector framework agreement. The experience of a Lean facilitator helps to illustrate the issue:

> When approaching academics it was very much all about the public sector framework agreement. [The academic said] "*In my role it does not say that I must apply continuous improvement to my post. So, I'm not prepared to go with this any further*".
>
> [001, OldUni]

The response was always to retreat to relatively fixed positions whereas the optimal position would be to have HR specialists resolve any inconsistencies in advance.

However, despite their surprise and acknowledgement of the potential importance of HR issues, the evidence from respondents at both OldUni and NewUni indicates that there were two related reasons for the absence of their respective HR functions in the implementation of Lean Thinking.

First, many HR policies and practices, such as training and development (independent of LTEs), performance management and job evaluation, were viewed by facilitators as barriers or, at least, hindrances to Lean implementation. Only at PharmaCo were the HR department engaged in actively redesigning their HR policy and practices to help support Lean implementation. Ironically, there were widely held views that those very same systems were themselves in need of streamlining but the preferred option appeared to be to bypass rather than confront HR process limitations. An academic at NewUni thought the following:

> A lot of the elements [of HR related to] Lean are stifled by university processes, so rewards for e.g. there is a Performance Development Contribution Review Process and there is the contribution policy which you are only rewarded financially if you are able to undertake this process and it is linked to the PDR. So, I think the duality of the two approaches isn't particularly helpful. Again I think that goes back to the fact the university hasn't bought into Lean. It is still the Business School and to a certain extent Social Sciences.
>
> [028, NewUni]

This was supported by a senior manager at NewUni who suggested the rewards system (among others) does need changing to facilitate Lean but "*a lot of the [HR] elements related to Lean are stifled by University processes so, for example, in the case of rewards there is a Performance Review Process where the reward is for enacting the process rather than delivering performance…I think that goes against the fact that the University [as a whole] hasn't bought into Lean. It is still the School and to a certain extent Social Sciences*" [023, NewUni]. This was supported by a senior manager at NewUni who acknowledged "*we operate in a HR system within the University [as a whole] with some conducive HR processes and some which are not so it is important for us to engage with the rest of the University to move us all forward in the same direction*" [025, NewUni].

The decisions to avoid HR systems may stem from the second reason for the absence HR function participation – the perceived lack of ability among each university's HR professionals, a senior manager at OldUni claiming "*Human Resources are incapable of*

implementing Lean" [015, OldUni]. In both cases senior and other managers intimated that their HR department colleagues failed to adopt strategic roles, were unable to accommodate new ways of thinking and were 'incapable' of applying Lean Thinking. In contrast to this is the opinion of the role of the HR function within RDA and PharmaCo. Specifically in the latter was the idea among respondents that the function created value, and that HR staff would need to be involved in any changes to culture, whether this is a championing role or an advisory/facilitative role.

The experiences at RDA are somewhat in between these two ideals; on the one hand the HR function played a strategic role and this can be seen through the secondary evidence indicating a number of the Lean-activity work streams require the involvement of the HR function. On the other hand the function suffered from similar fates to those in OldUni and NewUni in terms of the perceived lack of value added senior managers perceived the department to have. As all members of the HR function at RDA had vast amounts of experience of Lean within the private sector, it was perhaps not as pronounced as in the two university cases. The perception of the HR function in both universities was somewhat negative in relation to Lean implementation at least.

Nevertheless, there is some indication that responsibility for the absence of HR considerations from the implementation of Lean may not lay entirely at the door of the HR departments. For instance, one respondent at OldUni justified their distrust by saying "*Human Resources is probably the department that needs Lean Thinking the most*" [005, OldUni] which is to miss the point rather. Here is evidence of the 'kaizen-type' implementation of Lean that Radnor & Osborne (2013) identified as being 'one off' measures that are not embedded in the fabric of the organisation and the complete reliance of OldUni on LTEs to try to establish pervasive Lean Thinking reinforces that evidence.

This is somewhat in contrast to the approach taken by PharmaCo who have a strategically integrated HR function who are positioned in a way which allows them to implement and drive initiatives such as training and leadership development. Although process improvement specifically is under the jurisdiction of the individual continuous improvement team, any training and workload allocation or redesign is managed by the

department. The HR department at PharmaCo have the most strategic role of all the cases, in part a result of the sponsor being the Director. The HR team at PharmaCo is relatively small: there is one manager and three senior specialists who are self-managed and who have almost complete autonomy. Those within the team act as training facilitators, although do not wish to present their roles as that to staff. This is because they want staff to take ownership for Lean implementation themselves; therefore the sponsor claimed that their role within Lean implementation often varied:

> At points [our role] is really creating an environment and a climate, to the other extreme where it is making the change happen. My job is to create the environment organisationally, and to create the conditions, that allow individual managers to do what they need to do. Somewhere in between [our role] is about facilitating sessions.
>
> [036, RDA]

At OldUni there also appeared to be a quasi-political dimension to the exclusion of the HR function, with a senior academic there saying, "*if Human Resources is the driver it is easy for staff to see the agenda as being about staffing. However, if something called 'Business Improvements' is the driver, it's easier for staff to see what this is about i.e. improving the business*" [012, OldUni]. Some academic staff at NewUni echoed this type of assessment; the implication being that if the HR function is involved then Lean, rightly or wrongly, will be associated instantly with staffing upheaval and reductions.

The rhetoric of 'business improvement' over concern for changes to work design and employment conditions (real or imagined) is a central issue here. Notwithstanding this view evidence from both RDA and PharmaCo contrast this perception as neither of the cases had a Business Improvement unit within their organisations and both of their HR functions were vocal in stating if Lean was to become embedded in the culture then the function needs to be involved. At PharmaCo whenever work design and employment conditions are to be changed the HR department automatically take a leading role in whatever change is being implemented. This applies not just to Lean activities, but to a wider range of change management initiatives. Similarly at RDA where work steams involve 'people' there is the perspective that the HR function must be involved at least to advise and facilitate the delivery of the process improvement.

However, there was scepticism across the board regarding the capability of HR professionals to carry Lean through and some respondents went as far as to say they

would consider it detrimental if the HR function was to become involved. Interestingly, and perhaps worryingly from an HRM perspective, respondents presented no prima facie evidence to support their impression, rather it was based on a pervasive sense that HR employees are simply not up to the job.

This reflects a widely held view of the profession across sectors that have persisted for some years now (Storey, 2007). While the HR function manage and lead Lean-type activities at PharmaCo many of their LMs claimed that they "*never see it as being delivered by the Human Resource department*" [048, PharmaCo]. While the HR department suggest that their involvement is minimal their focus is entirely on soft elements, leaving the harder element of Lean implementation to their continuous improvement teams. One respondent within the HR function explains her involvement:

> We facilitate communication and involvement of employees through our Staff Councils. I think that a big part of Lean from a people point of view is communication, involvement and making sure that people have got the skills. So the training that they need to adopt the Lean practices in the workplace.
> [053, PharmaCo]

This particular department are involved the most of all the cases by offering leadership training for managers (non-Lean specific) they do not facilitate in any LTEs directly. The experiences and views of respondents in both PharmaCo and RDA indicate that their believe that their HR function is capable of being able to drive and implement Lean-type activities but the lack of senior management sponsorship in both cases is an apparent barrier and has thus far limited what Human Resources can do.

Regardless of the rhetoric Lean Thinking and HRM appear to be tied like an intricate knot and the intricacies of their relationship may be more pronounced in the public sector where there are layers of accountability that are rarely found in the private sector. An academic from NewUni, whose role oversaw commercial activities, remarked that: "*The problem with an academic institution is that you have an awful lot of bureaucracy, you have an awful lot of quality assurance and you have got it all wrapped up in this human resource blanket that sometime protects employees and stops us being able to do what we need to do*" [026, NewUni]. Although there was no direct evidence to support the notion that human resource 'bureaucracy' was responsible for hampering

the introduction of Lean it was a view that was shared elsewhere, as the following statement from a head of school at OldUni demonstrates:

> In the private sector I can really see [the Human Resource department being strategic] and working well. You have the ability to fire people and it is baffling that the public sector does not have that ability. The issue with it is - if I went to Lean our office and discover that I have two too many staff - could I make them redundant? I could, maybe! But it would be a seriously hard process.
>
> [012, OldUni]

Such a view is in danger of perpetuating the widely held (but in theory mistaken) belief that Lean initiatives inevitably result in downsizing although, for the record, none of the cases used in this research had made redundancies as part of their application of Lean, or otherwise, at the time of data collection. While PharmaCo had made redundancies this appeared to be the result of changes in production and recent take-overs – it is almost impossible to link these to Lean because Lean was introduced to the organisation very recently. Of course, correlating the application of Lean Thinking with job losses is extremely tenuous under any circumstances. Lean facilitates change, but it always comes about as a consequence of change, so demonstrating cause and effect is impossible in practice.

The cases highlight a difference in perception and approach between industries with regards to culture change. It also perhaps indicates a difference between hard approaches to implementation versus a softer approach. As the HR Director at PharmaCo states "*culture change should be delivered by the HR department ideally*" and it was felt strongly by the function that using the HR department to introduce changes to working practices gave the change programme more substance and as such the organisation more strategically used the department at a number of levels.

Therefore, while the evidence so far has indicated that there is perhaps a difference in implementation between manufacturing and non-manufacturing contexts in terms of Lean implementation, the role of the HR function is perhaps better characterised by the inherent issues raised over the role of HR professionals in the public sector and in the private sector. This specific issue would probably require further research in its own right, and was not in the remit of this particular thesis.

4.8 Summary

This chapter has presented the evidence from both primary and secondary data with regards to how Lean Thinking is understood, approached and implemented. In the first instance it must be acknowledged that the four cases adopted different approaches to both managing their resources and implementing Lean Thinking. This is especially true with regard to the approach to training and skills development. For instance, OldUni required participants who were involved in the 'radical redesign' of processes touched by Lean to attend a 5-day 'blitz' by applying the Plan Do Check Act method to all practices, thus drawing from the tradition of TQM. For each LTE, conducted by in-house Lean facilitators, a project team was identified and isolated from their normal work environment for the duration. That approach contrasts with NewUni where training in Lean techniques was optional for affected staff. The training that did take place generally involved away days to an automotive manufacturing plant where participants took part in building a car.

The consequence of a voluntary approach was that Lean Thinking was being introduced into divisions being led by senior staff that had not necessarily been trained in Lean techniques. Moreover, the approach taken by RDA was more indicative of the EFQM Excellence Model for Performance Improvement, although the aim of the initiative was stated to be Lean culture change. At the other end of the spectrum PharmaCo were in the process of acquisitions and mergers whereby senior management aimed to introduce Lean to facilitate standardisation of (specifically) HR policy and practice. Nevertheless, despite the different approaches to implementation, the outcomes of the initiatives in the four cases were quite similar. Likewise, the ramifications for HRM and Lean implementation in the cases were also similar. Thus, the approach to Lean appears to be somewhat dictated by the approach the organisations have taken to Lean training. Further general themes emerged

All of which indicate that the evidence from the four cases here does not necessarily support the traditional LPT research on Lean. Superficially, the data highlighted that a new form of control appears to be present in these cases: controlled participation. This is based on the ideas first presented by Dohse et al. (1985) who used the term 'managed

participation', and is both in terms of the design and focus of the LTEs and how these respondents have experienced them. Evidence here suggests that Lean can, and often is, implemented and managed under the guise of 'ownership', 'participation' or 'empowerment' as well as 'control'. By choosing to term this 'controlled participation', this illustrates a difference from the traditional LPT perspective of [direct] control within manufacturing, The next section will explore in more detail how employees in this study experienced work changes under Lean.

Chapter Five Working under Lean: Employee Experiences

5.1 Introduction

The previous chapter showed what the Lean programme in each of the cases looked like, and revealed that while different approaches are being used there was generally a lack of conceptual clarity on what Lean was within their contexts. This is in addition to the presumption that Lean can be applied through training, on a managed participation basis: participation in Lean was restricted to certain individuals (and processes), and this was often controlled by managers or sponsors.

This chapter presents the data with regards to how respondents experienced Lean and reflected on it. Firstly, there is a discussion on the limits to Lean Thinking in the non-manufacturing organisational settings here, and shows that as a result of the contexts here the depth of Lean is often limited. Secondly, resistance to Lean implementation is discussed with a specific focus on resistance from line managers (LMs) and professionals. This manifests itself in several ways – from ambivalence and misbehaviour through to distancing themselves and overly refusing to engage.

Finally, this chapter explores the potential new ways of working with the data indicated that respondents felt little had changed. This perhaps could be a result of the lack of understanding of Lean in contexts other than manufacturing, or a lack of application of what Emiliani (2012) would term 'Real Lean'.

5.2 Limits to Lean in Atypical Organisational Settings

In each of the cases Lean had limited breadth of application, in terms of coverage across functions and activities, and limited depth of application, in terms of demonstrating changes to working practices and measurable outcomes. A number of issues emerged from the reflections of respondents which raise questions over the extent to which Lean is universally applicable as claimed in *The Machine that Changed the World.*

5.2.1 Extensiveness of Lean

It was noted earlier (Section *4.2.1 Case: OldUni*) that OldUni confined its implementation of Lean to non-academic departments, and even its coverage of those was partial: the most notable omission being the HR function. The cited reason for excluding academic departments was that lecturing and research staff (professionals) would 'not tolerate' the introduction of Lean. This also raised interesting questions among respondents themselves as to whether their organisation was practicing 'Lean in Higher Education' or 'Lean Service in Higher Education' with a number of interviewees suggesting that Lean is 'easier' to apply in service-type areas of the university than traditional academic areas. These are perceived as more difficult to see where Lean activities can apply:

> Certainly our focus has been on working through non-academic processes initially. There is the interesting question of are doing 'Lean' or 'Lean service'? I think that we do 'Lean' in that we do look at areas which are unique to Higher Education like sickness absence, student visas, and the library. I think the combination of different processes we have looked at is what makes it 'Lean'.
>
> [001, OldUni]

The obvious question that this raises, but for which no convincing justification is forthcoming, is how is it defensible to introduce Lean Thinking into an organisation where the core 'business', and the people management systems that surround it, is left untouched? This appears to go against what the proponents of Lean, Womack et al. (1990), envisioned implementation to be. While the sponsor at NewUni suggested that 'all processes' within the academic department were subject to Lean, evidence from secondary data and other responses indicates this was not the case. This was especially so as the department, themselves, were not responsible for core business (and people) processes. This is similar to OldUni: while some claimed that the university were implementing Lean, an analysis of the documentary evidence specifically on which processes are being redesigned did indicate that 'Lean Service' is more appropriate to define the type of application, as most processes were generally limited to high transactional areas.

Section *4.2 Lean Programmes* presents some of the 'improvements', but to reiterate they tend to be linked to 'harder' measurable processes such as introducing a standard process for reporting damages within residences, streamlining the library re-shelving processes and shortening the time in which the university responds to confirming

student places through letters. These areas are, evidently, more service-like and 'tangible transactions'. So why were academic activities not touched? One respondent suggested that while it would not be impossible to apply Lean to academic activities, it would be a challenge:

> Lean works particularly well in the high volume transactional areas like the Library where you're dealing with purchasing 10,000 books a year, returning books to shelves of enormous amounts. That's because it's similar; it's quite a transactional high volume process. I think when you deal with every process as different, special and unique…less transactional [processes] and more involving human judgement, people are more challenged to think that there might be some way that they can standardise this or make it efficient.
>
> [001, OldUni]

This lack of widespread implementation of Lean at OldUni was received by some respondents as little change occurring. Although this does not indicate *per se* that Lean cannot be applied to teaching and learning, it does suggest that there is a perception by many of those involved that it is more difficult. A senior manager, a sponsor, proposed that a different approach is needed when dealing with different areas of the university – for example administration staff and easiet to encourage and to be involved, whereas "*I would never like to tell an academic what they should be doing*" [015, OldUni].

This indicates two things, although they are intrinsically linked. Firstly, the academics at OldUni were seen by senior managers to hold a certain conditions and power relations within their organisation (Collinson, 1994) which they, themselves, were unwilling to encroach upon. Secondly, as we shall see in later sections, academics used this as a reason to 'justify' their distancing from changes to working practices. While a NewUni academic processes were, in theory, included in their Lean initiatives; in practice the remit was exclusively administrative processes that fell within its scope. This is despite the claim of Emiliani (2004) that Lean can affect frontline education by improving lectures, assignment content, management of student time and overall student satisfaction.

The general view was that the intangible nature of delivering a 'knowledge service' whereby administrative processes have a "*clear process with regard to requirements*" and output, whereas teaching does not always [027, NewUni]. The absence of educational outputs that are legitimately under the control of academics, and the

personality characteristics of a 'typical' academic, all militate against the application of Lean Thinking in the teaching realm. This 'typical' academic is discussed by Gabriel (2010) and idealized by certain expectations of what it is to be an academic and this certainly appeared to be the case here.

Additionally, one academic from NewUni pointed out that faults or issues in the frontline delivery of education may not become apparent for some considerable time and only become manifest in say, student failure rates, by which time it is too late and the root problem may no longer be relevant [026, NewUni]. Another academic objected to predetermined models of working saying that academics are "*people who are attracted to the notion of being autonomous teachers and researchers and bring with them several models of working*" [033, NewUni].

This largely supports Willmott (1997) who talks of workers who have invested in, and subscribe to, a particular ideology. It also implies that the academic above feels that Lean would reduce their autonomy. Arguably, this makes traditional 'direct control' difficult to implement in this type of environment, and suggests that tight surveillance as a method of control (Thomson, 2003) under Lean is much more difficult to achieve here.

Lean implementation at RDA extended across the organisation and filtered through a number of work streams. It was seen by respondents as being relatively extensive. Unlike the previous two cases RDA introduced their Lean Thinking by integrating Lean activities throughout a number of streams of work, Section *4.2.3 Case: RDA*, which led to the perception that it was more embedded throughout of the organisation. This approach was seen by respondents as being useful, especially considering the organisations' imminent closure. At the point of data collection, Lean was being used to facilitate closure and therefore the aims were different to the original intentions of Lean. The sponsor reflected on the current importance of Lean:

> We are going to be working the organisation with 40-60 less staff, and then another 100 …and these staff won't get replaced. So [we say] "*well you are going to have to pick up their job too*". Therefore we have got a case to say "*let's find a way that we can do this the smartest that we possibly can, the best that we possibly*

can, the least hassle for you that we possibly can, so that what you are not having to do is work 48 hour days."

[036, RDA]

It is therefore difficult to subjectively analyse the extensiveness of Lean application at RDA without taking into consideration the fact that the goals posts have changed, and Lean may not have been applied as much before the organisation learned of its closure. However a similar approach to integrating Lean across functions and areas was used by PharmaCo. The organisation was involved in the redesign of policies and practices which incorporated Lean Thinking across the organisation. Nevertheless, a number of respondents expression caution over how extensively Lean could be applied, implying that tough regulatory requirements placed on the industry meant that 'doing more with less' was not always possible nor desirable.

At PharmaCo, the aspiration of efficiency and effectiveness were often sought - customers are willing to pay a premium for the service that they needed, based on the professional knowledge PharmaCo had accumulated over the years. This questions the original intentions of Lean, which according to Womack et al. (1990) are based on organisations aspiring for a reduction of waste and more cost effective working, and while PharmaCo have an aspect of production within their business this case does show that the aims are different to those in automotive manufacturing.

5.2.2 Applying Process Improvements

In addition to the lack of extensiveness experienced by respondents, a large number also reflected on an apparent gap between their individual participation in training (i.e. Lean) and their ability to apply those skills and knowledge to improvements. This led to what was seen by respondents as difficulties in applying tools and techniques, as well as a reduction in autonomy control (Spenner, 1990). Respondents experienced a number of issues which they believed restricted their application of Lean including an inability of LMs; a lack of understanding of the practical application of Lean tools; and the expectation that once participants had finished their training they were to continue with their day jobs.

Despite being involved in LTEs, many respondents felt this was wasted as they

experienced little opportunity to change processes or working practices when they returned from that training. This implies a limited chance to exercise discretion on individual decisions and to exercise judgement in their work (Felstead et al., 2004). Some, such as Spenner (1990) would argue that this reduction in the level of discretion that workers can exercise is a version of deskilling, however on the other hand this may be linked to the issues and ideas expressed in Section *2.4.4 From Responsible Autonomy to Controlled Participation* and are a way in which the organisations are approaching Lean.

Where respondents were required to work across units with workers not involved in Lean, this was seen as a restriction. The reason for this is likely the lack of holistic application across the cases: in one example at OldUni respondents who had been involved in specific improvement were told by senior management to spend a whole week working inter (and intra) department in order to create a new system focusing on the staff holiday process. During the improvement they identified the process required a new information technology system, however the IT department appeared negative towards Lean as it did not apply to their unit. The result was that the improvement was dropped and never applied. The same respondent suggested that their view was that "*Lean would work fine if it didn't involve the use of information technology processes for the majority of improvements*" [008, OldUni].

Beyond issues of resistance (discussed Section *5.3 Resistance to Lean*) there were also problems of coherence and coordination in all cases. Many elements of what OldUni and NewUni deliver draw on participation from a variety of functions across the institution and, on occasions, Lean Thinking was viewed as counterproductive when administrative staff found that they were struggling to adopt Lean principles and practice in their own work environment and then have to abandon them when operating outside of it. A member of the administrative staff at NewUni suggested:

> The difficulty in the university structure is that the administrators may know about [Lean] but they are managed by the university, they are managed by college management teams so it is not the same. None of the administrative teams really own any of the Lean projects but they may be part of a team ...and while the university is very positive about it and supportive about it and is keen to integrate it into various parts of their work, but at the same time there is

> inertia in the systems and not everybody knows how to deal with some of the process changes that are required.
>
> [027, NewUni]

The most apparent examples of this were referred to earlier – where HR systems impinge upon the application of Lean. There was also a cultural issue apparent, according to one respondent who suggested that "*the single biggest barrier [to applying Lean] is that we do not have the culture to embrace training*" [050, PharmaCo]. A lack of integrated approach to 'soft' elements, such as training, was seen as being problematic at OldUni, NewUni and PharmaCo. One respondent concluded that until the organisation acknowledged the importance of *applying* changes, then the *impact* of the training is somewhat limited:

> My experience has been that [the training] is all very well, but getting things to actually change and getting things done is hard work. There is a follow-up that is required, to allow the change to happen.
>
> [021, OldUni]

This implies one-off kaizen type approach as identified by Radnor et al. (2006), although other respondents claimed that other issues restricted the application of Lean. Where LMs saw the 'imposition' of Lean as "*a criticism of the way that we do things*" [015, OldUni] they were less likely to apply it. The data emphasized LMs often defended the frontier of control against managerial incursions, supporting evidence by Taylor & Moore (2015). LMs often appeared reluctant to question their current way of doing things, or to propose improvements.

'Time@ also emerged as a theme, especially when Lean was not seen as being part of a respondents' job. This was also true for time taken out to participate in training. In each case respondents had been removed from their day job if they had been involved in an LTE. Often this was at challenging times when work flow was at its heaviest – the result was an increased workload:

> I think that on the whole it [the training] is a good idea but sometimes it's not thought through as to the implications if they remove you from your day-to-day job. Obviously you are away, and nobody is doing your job back at the desk.
>
> [010, OldUni]

There is a distinction that can be made between 'time' and 'timing', i.e. some respondents claimed that they do not have the *time* to participate in Lean events and activities where they are taken away from their day job, and that the *timing* of the events which often came at busy periods of the work calendar. For example, at PharmaCo the

timing issue was cited by all respondents as being a concern in so much that production plans were the driving force behind all activities at plant level in order to ensure that customers acquired their products at their specified times. Improvement activities had to be secondary to production schedules, despite the same respondents also claiming that Lean was a part of their role. Therefore there is some substance to suggest that they had the 'time' to apply Lean, but it did not always come at the right 'timing'.

5.2.3 Depth of application

The issues raised above led to what many respondents felt was change that was superficial and limited. Lean implementation was believed to have had little effect on working practices, individual roles or organisational efficiency. Additionally, there appeared no measured consequences to substantiate this view although the author has to rely on the perceptions of those affected by Lean.

Nevertheless, given the fact that some outcomes such as culture change are very difficult if not impossible to quantify, others such as process redesign are experienced directly by respondents. It is therefore not too bold to suggest that their opinions and experiences on the depth of Lean application are important and will inform their future engagement with Lean initiatives. A number of respondents claimed issues with regards to what they saw as inherent public sector characteristics specifically - these were apparent in interviews with respondents in RDA, OldUni and NewUni. Such characteristics were cited as tall hierarchies (resulting in slow change); bureaucracy (resulting in many improvements either being completely abandoned or implemented in a more superficial way for speed); and a silo mentality ("the way things are doing is fine").

A silo mentality was experienced in each case, although was more evident in OldUni and NewUni. As identified by Rumelt (1995), the impression by some was that things were fine the way they were and this is an example of inertia. This was both in terms of individual units (or divisions) and also academics themselves working in a way which was rather individualist. This 'mentality' was seen as being an attitude or sets of behaviours which was accepted to be the norm in some departments or units, where

they do not want to share information or knowledge with other individuals within the institution.

An example of this was in NewUni where one respondent (a programme leader for Finance courses) highlighted that while she and her department were ultimately part of the school as a whole, the reality was they were in competition with other departments. This was in terms of student targets, recruitment and experience as well as group knowledge and know-how. Often this led to competition between different subject groups, which arguably reduce efficiency and limited the ability for change to penetrate deep. Competing interests were identified in the Literature Review by Waddell & Sohal (1998), and was illustrated by a respondent:

> While there are people working in a Marketing division and others working in a Finance division, you never speak to other lecturers. There is also a real cultural divide between the support staff and the lecturers. Lecturers don't communicate across divisions and lecturers don't communicate to support staff and vice versa. It's all very isolated and it doesn't feel like we are all working together.
>
> [032, NewUni]

The existence of a blame culture was claimed to be an impediment to the depth of Lean application and change at both universities. Colleagues, as a result, often saw Lean as personal criticism and therefore put up their defences and chose not to engage with Lean. This supports Bouchenooghe's (2010) proposition that individual attitudes can lead to resistance. However, we cannot generalise this as a public sector issue (or culture) as this was not apparent at RDA.

Despite the general cynicism regarding the effectiveness of Lean Thinking and its application there was acknowledgement that *some* operational changes had occurred, although questions remained over whether they represented genuine improvements and whether they were sustainable. With regard to the stated aspiration of achieving culture change the equivocation of a senior manager at NewUni is, perhaps, most discerning:

> Operationally there will be changes, and changes have already occurred. These are slower, transitional changes. In terms of the culture, I don't think that will ever change. You have got too many people who have been here for a very long time. They are academics! The number embracing it will gain momentum and

> maybe you will get cultural change, but culture doesn't shift overnight. You are talking 5 to 10 years before you see any real effects.
>
> [023, NewUni]

It was acknowledged that while it is difficult to measure any culture change there had been noticeable changes in, for example, vocabulary. A number had experienced changes to the language that LMs used, and while this cannot be considered a 'culture change' it is a superficial change. One respondent reflected that "*Lean is achieving its outputs, but whether that has affected the culture I'm not so convinced no*" [023, RDA].

An issue raised by respondents at PharmaCo was the constantly changing vocabulary used by senior managers – over the years this had changed from TQM, BPR and, now, Lean. Senior management here were perceived as going through stages of embracing these concepts, but not embedding them. The Literature Review identified that this often happens, both in manufacturing and beyond, and was also experienced at OldUni. On respondent suggested that Vice Principals (senior managers, in this context) "*all get together at their annual meeting and they come back and go "Hey! There's this great idea! We're gonna do that!" Leaving things doesn't look like you're doing anything, but it can be the absolute best thing to do*" [012, OldUni]. Contextual setting was identified by one respondent at PharmaCo as limiting any potential depth of Lean, claiming that "*you have to be very brave to want to change anything in the pharma industry, because the possibility of getting it wrong is very expensive*" [048, PharmaCo].

5.3 Resistance to Lean

There was evidence to indicate compliance to, consent to and resistance to Lean working practices (as Thompson, 1989, identifies). Despite traditional LPT research claiming that Lean is difficult, if not impossible, to resist, the evidence here indicates that some respondents openly resisted implementation. Other respondents, as McGivern & Ferlie (2007) put it, played 'tick box' games in order to satisfy new systems. Considering the context, and the themes within the existing literature, it is not surprising that a large degree of resistance within the case organisations here was present. Specifically, the following themes emerged: opposing Lean by defending

frontiers of control, self-identity and subjectivity as a means to resist Lean and consent through compliance.

5.3.1 Opposing Lean Thinking

Resistance to Lean was apparent in all four cases, although it did not focus on aspects such as terms and conditions or attempts at deskilling, in contrast to the claims of Thompson (1989). In many instances, resistance was unique to both the organisational context, and the nature of the respondents. Evidence indicates both active and passive as well as concertive (Barker, 1993) which included informal group activities (Callaghan & Thompson, 2001; Taylor & Bain 2003). Importantly, and an issue presumably unique to universities, 'academic freedom' was regarded as *the* most significant barrier to Lean implementation, and a tool which academic respondents claimed they used to oppose Lean.

Academics viewed their professional autonomy as the *sine qua non* of their occupation i.e. the principle reason why they became lecturers and researchers. This led to what Giddens (1991) describes as the ontology of subjectivity, whereby the academics in this study had very clearly developed an attachment to their work. Evidence indicates that, as a result of Lean, academics felt a disruption to their self, which results in a level of 'ontological insecurity' (Gidden, 1991). Academics often expressed how they were upset with the changes Lean was supposed to achieve, and openly refused to engage in activities by defending frontiers of control. Any perceived attack on their freedom went to the heart of their *raison d'etre*. This fundamental objection to Lean was accompanied by a more straightforward concern regarding the likelihood of work intensification, although there was no apparent evidence that frontline education roles had been intensified. That said, evidence from respondents in support roles specifically at OldUni did indicate that Lean activities had somewhat intensified some aspects of their work, but this was mainly as a consequence of attending LTEs.

Unsurprisingly then, the main resistance to Lean across the four cases came from academics at OldUni and NewUni. While professionals were interviewed at both RDA and PharmaCo this type of opposition was either not experienced by respondents, or not discussed during the interviews. Each academic interviewed singled this issue out to

the researcher, and while they appeared to understand the rationale behind the introduction of Lean Thinking to their institutions, they had a reluctance to change their working practices. This was indicative of their ambivalence. An academic at NewUni suggested the reason why academics are more critical of Lean is:

> Because they are academics! That is what they are paid to do and also because it is a very emotive thing, teaching. It is about showing your personality and getting ideas across, and you engaging with people. So, the idea of 'Leaning' that process is alien to a lot of the academics.
>
> [032, NewUni]

Evidence also indicated that academics were not passive recipients of the discourse associated with Lean, as identified by Thomas & Davies (2005). One academic stated that they did not 'tolerate' Lean due to its over emphasis on what they believed to be measurements "I've no problem with Lean, but what I do have a problem with is the fact that not everything is measurable. Lean is just obsessed with having a task measurement! So, some of the measurements that are sitting there are completely made up, which is counterproductive" [031, NewUni]. Taylor & Bain (2001) identified reluctance to challenge management's definitions of the 'frontier of control', however evidence here clearly implies that academic were willing to, and did, challenge this imposition often. Such dynamics and tensions must be considered within the specific context of Higher Education.

The over reliance on measurements, perhaps a new control, were felt by some respondents are being imposed and a version of self-surveillance similar to what was expressed by Thompson (2003). This approach was also noted to require an entirely new way of thinking for academics, and one which often caused opposition and resistance to. Exposure to outside competition and capitalism, and the need for greater efficiency, leading to the introduction of Lean in Higher Education was perhaps too novel and imposing for academics:

> The plain reality is that many [academics] are not accustomed to educational management in this mode; having objectives defined for them or a quantitative target…There might be a degree of doubt on some people's part that actually you can evolve according to a very clear strategic plan [as Lean requires] and underpinned by a clear set of targets, objectives, goals and metrics. [Each academic] approach [es] their task from a very different starting point and not all are would be naturally inclined towards a Lean philosophy or a Lean approach.
>
> [030, NewUni]

This individual was suggesting that because of the focused approach on strategy,

academics are likely to fear Lean approaches as they are not familiar with the amount of targets and metrics (controls) imposed on them. These controls are not the same as the surveillance as described by Delbridge et al. (1992), nor the three types of control outlined by with Edwards (1979).

This discussion implies that the introduction of 'hard' systems at the expense of 'soft' approaches might cause concern for many academics resulting in them defending the frontiers of control. This obvious disjuncture between the content of Lean training and the context of its application is difficult to comprehend, and the author can only speculate as to whether the absence of input from the HR function contributed to the situation. When reviewing the responses from PharmaCo, where the HR department were involved in the training there could be a suggestion made that there was less resistance. However, it is not clear as to whether that is due to the departments' input, or whether it is due to other issues around the nature of the job roles in PharmaCo. Some LMs at PharmaCo also indicated that a lack of training is restricting Lean and potentially building-up opposition.

Resistance also became manifest in more passive forms. For instance, some respondents at OldUni and NewUni openly admitted that they told their senior managers that they were using Lean when they were not (most likely resorting to previous tried and tested methods). Worthington & Hodgson (2005) describe how academics often distance themselves from such initiatives, with Giddens (1991) indicating that professionals want to retain a significant amount of discretion and distance from imposed control systems. One academic at NewUni was candid in admitting, "*I will say to [the senior management sponsor] that I am doing Lean and implementing it in my division. Am I really doing that? No! Not at all! But I am seen to be implementing it and that's the main thing*" [033, NewUni].

On the one hand, this appeared to be driven in part by the subjectivity argument expressed by Knights & Willmott (1999), and in part by Roys (1952) arguing which portrays workers who cheat the system in order to protect the status quo. This indicates some level of ambivalence characterised by 'approach-avoidance' tendencies (Sincoff, 1990) suggesting academics had 'mixed feelings' about Lean, and were tactical in how

they applied their effort.

Familiarity with what had gone before was also identified at PharmaCo, when a team leader suggested that a familiarity with current systems has caused resistance from their experience. This individual evidenced this through staff members who insist on holding on to vital knowledge, and not being willing to change the way that they do things. Senior management, as previous discussed, viewed such behaviour as negative (if we recall the 'luddites' mentioned in the previous chapter), one LM appeared sympathetic:

> These individuals seem to be the people that actually dig their heels in because they have been working for lots of years in the same way, and they are almost stuck in a rut. But, those kinds of people have got the vast knowledge and the experience; when you eventually get them on your side. When they start opening up they are valuable - as valuable as the younger generation.
>
> [050, PharmaCo]

This raises the apparent question over length of service and resistance: a number of line and senior managers implied that there was a link between age and opposition to Lean, in addition to length of service. One respondent suggested long serving employees can be "*bit resistant to change*" [049, PharmaCo] and that this was not necessarily in response to resistance of Lean *per se*, but rather opposition to changing what they have previously done for a number of years.

There were similar conclusions drawn at OldUni, NewUni and RDA whereby those who had worked in the organisations longer were sometimes seen as being more hesitant to change. Synonymous with this was the suggestion that older workers are less likely to accept Lean, with one respondent claiming "*senior [older] colleagues are more of an issue*" [016, OldUni]. Another LM claimed that older members of staff were "*a little more staid, little bit more grooved in terms of what they do*" [017, OldUni] therefore were cynical as a result. The HR department at PharmaCo encouraged caution at this, though:

> What makes people more resistant or less resistant? That's hard to tell because you don't want to take an entirely ageist approach of "*Old dogs find it harder to learn new tricks*", but there is a little bit of truth to the acronym.
>
> [049, PharmaCo]

Character and personality also emerged as a theme: one respondent suggested "*it's not an age thing; I think that it is a personality thing*" [030, NewUni]. A degree of strategic thinking and innovation on the part of workers is needed, according to one respondent:

"*Staff who are more strategic in thinking are likely to be more responsive to Lean than those with a classical public services or educational background*" [030, NewUni]. There was limited evidence from the interviews of resistance from employees at RDA; however the author is aware that the context in which the data was collected might be an influence on that.

5.3.2 Line Manager Resistance

Considering the role that LMs play in Lean implementation, discussed in Section *4.6.1 The Role of Line Managers*, it is perhaps not surprising then to find out that it was these respondents who were seen to resist Lean the most. This was the experiences of both LMs themselves, many of whom admitted they resisted, and of senior managers. A number of broad themes emerged with regards to LM resistance.

Firstly, there was a misunderstanding of what Lean was, i.e. some managers felt Lean was introduced to reduce their control and influence. Some respondents at OldUni specifically stated their concerns over this and saw the 'imposition' of Lean as a direct criticism of the way they did things, thus went on to resist by defending what already exists (Taylor & Moore, 2015). Often Lean was 'sold' to LMs with the assumption that they have a choice to participate or not, however in reality there was no choice (Buraway, 1979; Dohse et al., 1985). Secondly, there was an apparent fear of change resulting in the introduction of new processes. The requirement to learn new skills was something that many long standing respondents at OldUni and NewUni felt was beyond their job roles and job descriptions. Thirdly, there was an unwillingness to be involved in any Lean activity, i.e. some LMs just did not want to participate in Lean therefore they resisted. There is therefore a distinction here between two different types of resistance - active resistance and passive resistance.

'Active resistance' was seen to be when LMs persistently decided not to engage in Lean activities, more prevalent at OldUni and NewUni. One sponsor termed such resistors 'luddites' who would constantly question what senior management did and had expectations that were too high. Such 'luddites' were, claimed some senior managers, displaying similar behaviours to the original luddites in the 19th century – usually LMs. Additionally, some senior respondents believed that these members of staff incorrectly

considered themselves skill-less under Lean and their quality of working conditions would degrade under Lean. Much like the luddite movement of the 19th century, these individuals, within OldUni, were seen as causing widespread unrest within their organisation and teams often holding academic positions and using their collective identity as a reason for protesting.

Referring to Knights & Willmott (1990), there was clear concern from academics who perceived the introduction of Lean to directly question "*who am I, and what do I do?*". LMs themselves obviously disagreed with this view portrayed of them, instead claiming their resistance was based on the belief that Lean would not work in the context. As one LM, an academic, illustrates:

> …my reservation about things like Lean in a very heterogeneous environment like this is that creating processes are an imposition for some departments and it is not necessarily in their best interests. That is not resistance to the process *per se*…it is anti-centralisation attitude in general! [Laughs]
>
> [012, OldUni]

The perception of LMs who resist as being 'luddites' is incorrect, and perhaps indicates how senior management in OldUni view the labour process and employment relationship, and chimes with early accounts of the manager-worker relationship under LPT discussed in Section *2.2 History of Work Organisation*. LMs claimed that they were in a difficult position, and that if Lean did lead to more efficiency then they would be interested:

> While I think the concept of Lean is not particularly radical, there is an assumption that we [LMs] are not interested in saving time. It is just not true - we are desperately keen to reduce the burden all the time. I see my job as Head of School as trying to reduce the burden for my staff. Academics do not want to do administration, so I need to try to move that administration to people who are more confident to do it…I see one of my roles as this constant battle between the amounts of administration that is imposed from outside.
>
> [012, OldUni]

Thus, these reflections from LMs from the data indicate that there are a number of institutional pressures that have restricted them from applying Lean, and that this is not necessarily opposition of the concept. Undoubtedly, the perception of LM respondents at OldUni and NewUni is the belief that Lean will eventually result in a reduction of necessary labour inputs. Consequently, if universities (in this case) embrace Lean Thinking, quality and employment conditions may suffer.

'Passive resistance' as also identified, and was characterised by unresponsive reactions towards Lean and 'misbehaving' (Ackroyd & Thompson, 1999). One LM suggested that fear of the unknown may cause this level of opposition:

> I think initially it is a factor of Lean being unknown. In a lot of knowledge based organisations people have heard about Lean normally through the manufacturing plant and they associate it with the manufacturing plant. Therefore the initial reaction would be "*well this is not for us!"* however I think when most people get to know about it a little bit, depending on how you organise it, they do take to it quite well.
>
> [023, NewUni]

This indicates that time is needed to engage workers. A number of LM respondents suggested that Lean makes them think they are doing something wrong – perhaps a result of the blame culture identified earlier. One senior manager concluded that trying to get their LMs on board "*should be less difficult than it is proving to be" as "there isn't anything in this Lean agenda that, actually, deep down people wouldn't look at and say "no, no that's a good idea*" [031, NewUni]. Such resistance as often inactive, as opposed to assertive, and a version of concertive resistance as illustrated by Barker (1993). One LM reflected on their feelings below: A

> First off there was "*this is a criticism of the way that we do things*" and "*this will mean job losses*". Then simply not having anything to do with Lean or engaging. Active resistance was saying that it was rubbish and 'no', passive was not responding. The majority of the resistance has not been from the coal face workers but from the people who have something to lose from it, the middle unit management level who have seen it as a challenge to their authority as their autonomy.
>
> [021, OldUni]

Interestingly, the traditional LPT literature highlights that the 'coal faced worker' is most likely to resist change, however in this thesis it would appear that LMs and those in a professional position are more likely than their colleagues. This resulted in Lean, in many cases, being implemented to a much lesser degree than senior management and sponsors hoped it would be. This indicates an existence of resistance which is hidden from the view of management (Fleming & Sewell 2002; Timmons 2003). The questioning nature of knowledge workers was also claimed to result in passive resistance, or a 'battlefield' to use Reay & Hining's (2005) phrase. One respondent illustrates why LMs see initiatives such as Lean as a threat:

> I think in the public sector people think that there are hidden agendas in things like Lean. So, for example, if we want to do things quicker that means we want to

> do things with less people. The biggest challenge to change is peoples' behaviours and cultures, particularly because they see it [Lean] as a threat. [037, RDA]

Passive resistance was more commonly identified at PharmaCo, where respondents did not state experience of the active type. This could be a result of the relative power position of LM respondents within their organisation, although production plans and production deadlines nearly always took priority over Lean. Additionally there was a justification in the sense that "*the industry is a highly regulated industry; you have got very strict rules and guidelines and directives to follow to enable you to remain in business*" [048, PharmaCo]. This was used by a number of LMs to counteract arguments of implementing Lean, and indicates the different nature of resistance.

The author of this thesis identified in the Literature Review the need to specifically research professionals and how they may or may not resist Lean. The evidence here clearly supports the likes of Powers (1997) and Townley (2002), both of whom indicate that such individuals can both continue to perform as normal and overly fight to maintain the old logic. This can result in opportunities to exploit the system. Evince here indicates instances when professionals are performing their tasks as they believe they should (being seen to do Lean) while openly admitting they do not. Importantly, there is a distinction which can be made between people resistance (OldUni, NewUni and RDA) and process resistance (PharmaCo).

5.3.3 Consent, Compliance or Control?

The above discussion can challenge the ideal of the 'soft' side of HRM (and Lean), instead indicating experiences in some of the cases here of the 'hard' side of Lean (and HRM), i.e. the calculative approach. In 'soft' HRM the LM is the key driver of change, having autonomy and empowerment over operational issues, labour utilisation and performance (among other aspects). With the exception of LMs at PharmaCo, none of the cases here indicate that this has been an outcome of Lean. However, there was evidence to indicate that consent and compliance did exist, along with enhanced control although this can be seen as 'controlled participation' as opposed to traditional direct control. Although the term 'work intensification' was not used, there was evidence if a new type of surveillance, in some instances (Sewell & Wilkinson, 1992) although this is very different to what it looks like it automotive manufacturing.

While 'respect for people' is one of the foundations of Lean, according to Womack et al. (1990) and Ohno (1979), it was interesting to note that a number of respondents claimed that "*the people side of [Lean] does not always come through*" [002, OldUni] and that at times this often becomes 'muddled' with the operational efficiency aspects. A perhaps more worrying theme was revealed to the researcher almost immediately after starting interviews at OldUni, which was that of bullying. One LM explicitly acknowledged that they had, in the past, moved some of their staff on if they did not embrace Lean or were not 'capable' of being in roles which required Lean Thinking. There are overtones here with what was discussed in Section *2.2.2 The Emergence of Mass Production* whereby work is often controlled directly by management. Another LM openly discussed their experiences of an employee who questioned the impacts of Lean within their unit. The result was that they were redeployed to another (non-Lean) role within university:

> We did have two colleagues that were, shall we say, less on board with Lean. So, I started working with them: I gave them one-to-one meetings to try and change their understanding of their role and how I wanted things to be, how things could be, and how they could 'let go'. I consulted someone at senior management level and asked "*what do you do if somebody really does resist you?"* The answer? "*Well at the end of the day they got to go if they keep resisting me, because it's either got to be me or them!*" Let's just say these two colleagues don't work here [in this unit] anymore.
>
> [013, OldUni]

This was the strongest indication so far of a form of direct control evident, although it must be reiterated that such 'hard' approaches being adopted did not appear common or consistent throughout the cases. The example does show, however, that in some instances LMs still hold the balance of power and control. Another LM, also at OldUni, conceded "*you either have people capable of doing the job or you don't. Lean helps you identify the people who are not capable*" [009, OldUni]. This seems to indicate a form of Taylorism whereby management enhance their control, thus removing employees by reducing their negotiating power and making them easily replaceable (Braverman, 1974; Thompson, 1989).

Although not common in the data, there was further evidence to support early LPT research on Lean, for example the term "*Gestapo*" [002, OldUni] was stated by one respondent when describing their LM and senior mangers who they felt watched their

moves and daily routine. This is an example of despotic control (Buraway, 1985) this respondent felt that their LM used coercion as a direct, personal form of control to manage the workplace or enhanced surveillance (Sewell & Wilkinson, 1992). In addition to aiming for standard work processes, there was evidence to imply that some senior managers aspired to standardise workers. They believed that team of 'yes people' would help diffuse Lean throughout the organisation:

> I want people to behave in a 'yes' way. We will have to remove them [if they do not] or replace them with other people, or change their behaviours so that they are adding positively to the agenda.
>
> [015, OldUni]

The three forms of control identified by Graham (1995) were also evidence in this data. For example control through compliance i.e. the use of self-discipline as a powerful method of control was evidenced through the introduction of what we may term panoptic control (Thompson, 2003). The examples above also highlight this at team level. Additionally, there was some evidence of peer pressure, i.e. when colleagues fail to keep up. This was evidenced through LMs exerting pressure on their employees, although not to the extent as described by Worthington & Hodgson (2005) and arguably did not go so far as peer exploitation. Finally, there was kaizen i.e. constantly introducing new ideas to threaten stability and thus not resting on laurels. This was evidenced in PharmaCo where goalposts and terminology changed constantly, and has already been discussed. As we can see, we can summarised that these controls are present in this data, although it is clear that they look very different to manufacturing.

A number of LMs saw their role as transmitting downwards in the hierarchy norms and targets, so that for all they might be an appeal to 'hearts and minds' there was also the familiar imperative of employee compliance to management instruction. An interesting, and powerful, quote came from one respondent who had been involved in two Lean projects to date who indicated that his experiences of Lean were very much about complying with what the "*purse strings*" and what senior management wanted:

> Lean says 'continuous improvement' and we should be working forwards. All I can see is a very Soviet looking poster with farmers and fields and tractors [laughs]. It doesn't happen because of the nature of work. Senior management say "*right, we will improve this process*" but at the expense of something further down the line. That doesn't solve the problem; it just moves it to somewhere else unfortunately. I'm disillusioned now, very disillusioned.
>
> [002, OldUni]

The same respondent also highlighted that during one of the LTEs they were involved in, participants were united against the common enemy, i.e. that of senior management and facilitators. There is evidence of 'mutual support' (Graham, 1995) where LTE members cooperated as they saw themselves as a 'victim' of the system. These particular participants provided support for one another *"…only because we had a common enemy [laughs] in the facilitators. For the first week I was very anti-Lean training: all I got out of it was an extra person, a white board and a lot more statistics to gather [laughs]*" [002, OldUni]. This supports Taylor & Moore (2015) who describe how employees can encourage each other to resist, evidenced in the quote above with the 'common enemy' feeling.

While work does not appear to have been intensified to any great degree at OldUni, NewUni or RDA, evidence specifically from PharmaCo implies an increased pressure following the introduction of Lean in the form of enhanced surveillance and managed participation (Dohse et al., 1985). A number of respondents stated that following the takeover of their site by PharmaCo, the pressures to perform and meet more targets were much higher. The result was perceived as an increase in the presence of bureaucratic and technical control (Edwards, 1979) through visual management and specific targets in order to monitor the workers - much like those in the HMRC example cited by Carter et al. (2012). One respondent reflected on this:

> Since [PharmaCo] took over we have gone Lean by shedding a lot of labour. People who are still in their job are doing a lot more than they used to. Now as a result we are running around working really hard, quite stressed at some times. However, we are not necessarily having the time to have those conversations where you can actually say: "*right, why are you are running around like a headless chicken doing one thing?" "I am running around like a headless chicken doing another".* Yet, we never actually sit down together to say *"what is the best way to be a headless chicken around here?""* [Laughs]
>
> [048, PharmaCo]

Downsizing was only experienced by respondents at PharmaCo, although the HR Director was keen to point out that this was not a result of Lean. Notwithstanding this the perceptions of some respondents was that "*Lean is mean*" [052, PharmaCo] and "*while I think we set out with good intentions of being Lean encouraging flexibility, we have actually gone 'Lean and mean' in terms of numbers. We have not in terms of skills and experience, and we don't have the skills and experience to operate a Lean system ideally*" [052, PharmaCo]. This perhaps opens the question up as to whether HRM and

Lean, with its powerful rhetoric of shared interests and mutual gains, served at PharmaCo to mask capitalist restructuring. The perception of a unitarist façade and the high-skill high-commitment rhetoric, remained fundamental to market imperatives such as cost minimization, growing labour market flexibility, downsizing and redundancy. One LM expands on this:

> We had a number of redundancies after a lost product. At the time they cut staffing levels, but those who are left have been given more and more products. So, the production has kept going but they haven't actually increased staffing levels. Because of that everybody has been expected to take that step up, take more responsibility and do a lot more work.
>
> [048, PharmaCo]

While there was no direct evidence to suggest that stress or workload have increased at OldUni, one respondent (an academic) did suggest that "*freeing up staff time [through Lean] often involves just abandoning those processes*" [012, OldUni] although their personal experience of being involved with a Lean event was that the process expanded post-Lean. Another respondent questioned the outcome of Lean which it was claimed by facilitators had an outcome of "*greatly reduced the amount of processes involved in their work*". The experience of one respondent involved in that project indicated something different:

> We spent a week examining processes, and actually as a result of that they identified the fact that we could save about 5 minutes, about 2.5hours throughout the year. There was very little "slack" in there, and it actually demonstrated that we were working as best we could. We were working at capacity.
>
> [002, OldUni]

Evidence of process improvements was limited at NewUni, although it has already previously been discussed that many academics felt that, at times, targets and measurements were simply made up. As opposed to increased work, many at NewUni simply became ambivalent and did not engage with Lean to any great degree (supporting Thompson, 2003 and Warhurst et al., 2008). Interestingly, one respondent raised concerns over the impact that Lean has had on their customers – the students:

> I think that the students are feeling over assessed and ultimately this quest for data is going to impact the data in a negative way. I think that it is detrimental to the service that we offer. It wouldn't be so essential if Lean wasn't being implemented.
>
> [026, NewUni]

The author has purposely chosen not to mention RDA in this section as their work has been intensified and downsizing was occurring at the time of the data collection, however this was a result of the pressures of closure which the organisation faced. It was felt that it was unfair to comment on work intensity considering the context and austerity measures taking place which would likely influence respondents views on their levels of work and stress.

5.3 New Ways of Working?

When processes are changed as a consequence of Lean there is certain to be concomitant changes to the roles and responsibilities of the employees affected, however whether this results in new ways of working largely depends on to what extent those roles and responsibilities have changed and the degree of empowerment employees have over their process changes. The evidence so far indicates that the depth and breadth of Lean implementation in the four case organisations has been limited, however this section discusses the changes to roles and responsibilities; ownership and contribution; whether employees have been empowered; and the impact of Lean on collaboration and team working. Finally there is a discussion as to whether a culture of continuous improvement has been established – an aspect cited by Emiliani (2012) as being the key principle in establishing a 'Real Lean' culture.

5.3.1 Roles and Responsibilities

The data captured some changes to individual roles and responsibilities as a result of new working practices and these changes were not exclusive to front line staff such as administrators, but also to LMs who were responsible for applying and being involved in Lean. A number of facilitators claimed that LMs should take on the role of Lean leaders, explaining that the role of the LM was likely to change following Lean to become more of a change agent, actively involved in the change process. This indicates a 'soft' HRM approach. The reality from LMs interviewed was, however, of a 'harder' approach where many LMs did not necessarily see Lean as a part of their job – rather they felt the extra pressure to be seen to be doing it.

Consequently, a number of LM respondents felt their role had changed to incorporate new responsibilities such as the collection of data. This was generally not coupled with

an increase in autonomy or empowerment to accompany this. This extra 'effort' was not well receive by respondents who were professionals, as many saw their role as being linked to their professional community and identity:

> When approaching academics [they said] "*In my role it does not say that I must apply continuous improvement to my post. So, I'm not prepared to go with this any further*." So in that instance the public face [the facilitators gave] of that was "*okay, not a problem that's absolutely fine, let's call it time for today. We'll go away, work out this conversation and find out where we can go from here.*"
>
> [001, OldUni]

While OldUni have had no success so far with academics, NewUni actively involved a number of these workers which has resulted in an expansion to their roles, specifically project sponsorship. However, when interviewed a number admitted that their role had not changed significantly:

> Am I doing anything differently? No! It hasn't changed what I do, it's just *another* thing.
>
> [024, NewUni]
>
> It has *influenced* it, yes, but I wouldn't say that it has *changed* it.
>
> [030, NewUni

These themes are similar to those suggested by Smith (2006) who claims there is a 'double indeterminacy' in the labour process as employees determine their own work effort within constraints, as well as having the ability to move around. There were very few academics who were interviewed that stated they were actively willing to increase their effort in order to include Lean in their roles. That said, managerial conflict with academics was generally avoided by senior managers (supporting Taylor & Bain, 2001).

Despite this, among the academic respondents there was an acknowledgement (albeit a superficial one) that contexts were changing and this required their universities to 'think and improve' much more. They also appeared defeated by suggesting that this would likely be inbuilt into their roles before long, although they were not willing to give up the fight now. However one particular respondent implied that these changes to the profession were not so much a result of Lean *per se,* but of the growing external pressures facing the sector. This academic inferred that the external environment has driven Lean and changes to the way academics do things, as opposed to the other way around:

> The government is calling on Institutions around the sector to use Lean to improve and enhance their efficiency. There has been a sort of clarion call to the sector to get smart and to get Lean. There was a degree of predication in that I think there was an assumption [when Lean started three years ago] that difficult times would hit the sector and those Institutions that were Lean in every respect would be the ones that would succeed in the new environment.
>
> [030, NewUni]

There was little evidence to suggest that respondents have taken on these new, more efficient ways of working. On the other hand some respondents who held administrative or support positions indicated that "*staff-time on a day-to-day basis has been freed up*" [007, OldUni]. Two respondents indicated that post-Lean their personal workload had increased resulting in more personal stress. However this does not appear to be to the extent of some of the research explored in concertive *2.4.1 The Age of Surveillance*:

> There are downsides to being leaned I think. As I say extra work, not just change processes, but additional work in our situation. Illness has gone up as a result of Lean.
>
> [002, OldUni]

The regulatory nature of the sector was claimed to be one of the main reasons why respondents at PharmaCo experienced very little change to their roles and responsibilities. Likewise, any changes at RDA appear to be more a result of the imminent closure of the agency as opposed to Lean directly although this is currently difficult to measure. Prior to the announcement of closure one respondent suggested that the culture was allowing individuals to use their own style of working: "*we've always done it this way so we are reluctant to change, no one has ever complained before so it's okay*" [040, RDA]. Overall there appears to be mixed evidence to support the claim that individual's had experienced changes to their roles and responsibilities beyond participation in LTEs.

5.3.2 Ownership and Contribution

Where individuals had experienced changes in their roles and responsibilities (whether they been small or large changes) a minority indicated that enhanced ownership of the change process was a new part of their role as a result of Lean. The most evident examples of increased staff ownership as a result of new ways of working were from respondents at PharmaCo and the Finance unit at OldUni. At PharmaCo encouraging ownership and contribution was regarded by the HR department as being a key aim of Lean activities through training and skills enhancement.

While one of the aims of Lean according to Womack et al. (1990) is to encourage employees to take ownership of the Lean process, as Lean was not being fully implemented in any of the cases here only a small minority of respondents claimed that Lean activities had this positive outcome. One respondent explicitly stated that they were happier in their role, although such outcomes were limited within the dataset:

> I'm getting more out of it and I'm feeling far more satisfied now that we are bringing Lean stuff in. We are all taking responsibility for what we are doing! We have ownership, and I think that's a huge thing.
>
> [011, OldUni]

Where individuals had experienced increased ownership at OldUni, NewUni and RDA this was inferred to be an unintended consequence of Lean, and that generally ownership for projects was within precise, pre-defined remits. Where individuals had received training, and had the capacity to apply new skills to their job, some respondents felt an increased level of empowerment and contribution. However, this sense of authority was only in terms of the specific process improvement they had been working on, i.e. the principle of continuous improvement (and thus empowerment through continuously suggesting improvements) was not felt to be inbuilt into the culture of any case here. One respondent indicated "*when staff are more knowledgeable they become better able to contribute*" [050, PharmaCo] which provided support for the desire of many of the respondents here, regardless of case, to participate in more appropriate Lean skills training.

There seemed to be a link that respondents made between training and empowerment: for example some felt that as a result of being better trained in 'soft' Lean skills they felt they could better contribute to their jobs. This was because they were able to identify inefficient processes and waste. While this gave them a feeling of being able to contribute, what was often lacking was the autonomy to change processes (Felstead et al., 2004). This was explained by one respondent at PharmaCo:

> I am realising that training to get our operators more knowledgeable on the processes would help, because they are then better able to contribute through being training on some basic Lean principles such as brainstorming. Then, they are better able to help, [although] you have got to give them the facilities to be able to help.
>
> [047, PharmaCo]

There was also evidence of managed (Doshe et al., 1985) or controlled participation, as

ownership and contribution here occurred within the controlled environment of the LTE in which the topics, goals, and approach were limited to and set by the interests of the sponsors. Dohse et al. (1985: 142) argue that this is an example of how to use the knowledge of the employees for purposes of rationalization. While one respondent [002, OldUni] suggested if they had more say in which processes and tools they engaged with in LTEs they would be more empowered, one senior manager claimed that the tools and techniques are largely irrelevant. The key is the ability to get staff to take individual ownership for their projects:

> We need to work with people on a more individual basis. It might be that we need to give ownership of those things by unit so that they feel like they own one component of the whole. Then they can actually manage and develop that component in a way that they see fit. You cannot hand something to somebody, or a group, and say, "*This is what you are going to do and this is how you are going to do it*" because they don't want to do it and they are not going to do it.
>
> [031, NewUni]

5.3.3 Empowerment

The claims of some proponents of Lean are that leaner ways of working require staff to have both a conceptual understanding of the process they are working within, as well as the analytical skills in order to identify problems and resolve them as they appear (MacDuffie, 1995). While the outcome should be the sense of empowerment, evidence from respondents here suggests that while some experienced increased empowerment it was not widespread. Where it was available, it was in a managed way (Dohse et al., 1985).

An icrease in the ability to contribute was linked to an increase in (perceived) sense of empowerment. At the same time true empowerment as seen as being limited and while some respondents felt they had a conceptual understanding of their processes, they were neither encouraged nor allowed take decisions. This is the criticism linked to skills and training identified in Section *2.4.3 Skills under Lean*. Additionally, this was seen as being partly due to the people involved in the process improvement, and a lack of task discretion:

> We are the people who deal with these processes every day, and have done for some time. We are quite capable of coming up with solutions to problems, but we

> are not allowed to. They won't listen! You have got to involve people who actually understand the processes and who come at it from two different.
>
> [002, OldUni]

Not surprisingly, a number of senior managers suggested if staff were involved in Lean, then by default they were empowered. This came hand-in-hand with the assumption that staff felt more motivated due to being empowered, as one senior manager discussed:

> One of the by-products is a far more motivated workforce. Partly because people feel empowered; they feel trusted, they feel valued, and they feel that their opinion is being listened to. I think the benefits of Lean, in addition to providing [process] improvements, is that it does actually improve morale. It improves team working and highlights problems in workforces.
>
> [015, OldUni]

Although some respondents in management positions claimed that morale and motivation had increased as a result of the so-called increase in empowerment, this was neither measured nor was it supported by other respondents who had participated in activities. Management style was also seen as a facilitator for empowerment, which was not necessarily a result of Lean but more a consequence of that particular LMs approach to leadership and management.

LTEs themselves were seen by a number of facilitators as being an environment where participants felt empowered, although the problem identified by respondents who had participated were the issues mentioned previously (such as management style and the gap between the training event and opportunity to apply this back at the desk). While one facilitator claimed "*the way that we do things round here is to get people involved in the process and give them ownership [through LTEs*]" [018, OldUni], a participant of the training indicated that as a result of the prescribed design of the training, and the lack of participant involvement in which process to Lean, this was not the reality. Not surprisingly a number of facilitators claimed that LTEs provide employees with the opportunity to "*walk away knowing that they have designed the process which gives them empowerment*" [022, OldUni]. Similarly RDA used specific tools such as coaching to encourage empowerment.

Organisational factors can also restrict empowerment, for example in PharmaCo one LM suggested that lengthy "*chains of commands*" [049, PharmaCo] often limited individuals

in assuming ownership. This was in addition to the highly regulatory nature of the business. Unlike automotive manufacturing when the production line can be stopped and employees are empowered to do so (Womack et al., 1990), within the pharmaceutical industry the presence of restrictions[15] often meaning that it is not feasible for individual line operators to be granted that authority. According to one respondent, however, this differed according to what role you have within the organisation:

> I think PharmaCo offer autonomy more from a manager type level. I do think there is autonomy there to kind of get on and do things. But I do think in some areas such as operations, there is too much control.
>
> [049, PharmaCo]

Not every employee desires empowerment, and one LM at OldUni reflected on experiences where their staff have not desired it as the fear it. At the same time, they discussed a situation when one employee took empowerment too far and reiterated that control is needed. This can be evidenced through the following example:

> The staff went very quickly from being given nothing to do, to having everything to do and some freedom. So, they got a bit giddy in one or two areas. They forgot to check back with the manager - that's the only thing that needs to be reined in slightly. It's like saying "*yes you are empowered, but run things by people*".
>
> [013, OldUni]

A balance is therefore required between control and empowerment as well as the use of both 'responsible autonomy' and 'direct control' (Friedman, 1977) perhaps legitimising the notion of 'controlled participation' (Dohse et al., 1985). In order for workers to feel empowered one respondent at NewUni claims they need to see Lean as part of their role, and that projects are released to them:

> I don't think there has been enough releasing of the projects that are owned by [staff]…It has to become a part of what people do. There are some projects that have got more traction through the Lean process, but I think that we still have a way to go in getting other people to buy into it, and act on them in terms of what they do.
>
> [026, NewUni]

Most importantly a theme which came across from all respondents was the need to look beyond LTEs: it is not enough to empower staff only during the event itself (in whatever

[15] For example, within pharmaceutical manufacturing there is regulatory legislation (both national and international), regulatory innovation comprising of adaptive licensing (for marketing authorisation) and The Early Access scheme (a UK scheme), as well as international agreements and drug laws to name a few.

form) but this must transcend and reach workers throughout the organisation post-event.

This was seen as a particular problem at PharmaCo where many respondents felt that while the CITs were effective during their formation – indeed they were granted a great level of empowerment and autonomy, however this needed to continue when individual members went back to their work stations into similar level of autonomy control (Spenner, 1990) and the ability to exercise judgement (Feltstead et al., 2004). The mixed experienced discussed here appear to imply to a lack of integrated, full approach to Lean, and that Lean is not a part of the culture of the cases yet.

5.3.4 Collaboration and Team-working

Team-working is a common discourse in Lean (Wickens, 1986; Womack et al., 1990), and surprisingly, despite the above discussion the success of Lean in the four cases here appears to be in terms of the amount of collaboration and teamwork post-Lean. While this was not necessarily linked to the concept of team-based working and problem solving, it was cited by the majority of respondents at PharmaCo, RDA and NewUni and indicates that both horizontal (teamworking) and vertical (interaction with other parts of the team) are perceived by respondents to be present. This supports the assumptions of Kenney & Florida (1993) in Section *2.2.3 New Paradigms of Work*.

Both inter and intra unit collaboration and teamwork were experienced in the cases here, although a number of respondents implied that the former was perhaps an unintended consequence of Lean. The documentary evidence (*Appendix 7 Overview of Documental Evidence*) does not indicate that any case aimed to enhance collaboration and teamwork through Lean, although a number of senior managers and facilitators acknowledged that they hoped collaboration would be an outcome of the LTEs. These events were, ideally, places where individuals could exchange ideas in a "*safe environment*" [002, OldUni] and provided interactive opportunities, and the possibility to network. While this might have been only for the duration the LTE itself it was still seen as positive. This was especially so in cases like OldUni where respondents in administrative positions felt very little inter-unit collaboration occurred outside LTEs.

Some explicitly stated that LTEs, in fact, provided them with the only opportunity to work in partnership with another unit.

The effectiveness of this partnership was judged by respondents to be determined by who was involved in the training. One respondent reflected on two different LTEs; according to them the first event did not involve the right mix of participants which limited its effectiveness. The second event had more impact, partly due to having the right mix:

> The second one, which I thought was more successful, has resulted in systemic changes just by three people talking. It resulted in an examination of the systems and us saying "*we can do this better".* It was a lot more successful, because in the first event one unit was examining itself with the help of facilitators who didn't know what we were doing - the gains were minimal. In the second event there were two different units, neither of whom knew what the other was doing, but they had some idea of the systems in place. Collaboration was the result, which led to improvement.
>
> [002, OldUni]

This collaboration benefited some respondents as it provided them with the opportunity to understand how another unit work. The result, one respondent claimed, was a better understanding of how the unit operates including the pressures it faces. That opportunity to liaise with other members of staff, enhanced understanding of other roles and less silo thinking:

> One of the spin offs has been that there has been evidence of better teamwork occurring. I think that sometimes the shop floor are very competitive between teams. This can be a block because sometimes they will say "*I've got my job here to do*". It is very much silo thinking. But, I do think overall there has been plenty of evidence where there are good examples of better teamwork thereafter, and in amongst the teams.
>
> [050, PharmaCo]

Where individuals have a shared interest in the results of any improvements, some senior managers and sponsors claimed that team-working would be an outcome. One sponsor suggested that teams are becoming "*tight knit as a unit and everyone is working together*" [023, NewUni], however, experiences from those he manages would not necessarily support this view.

Within the case of RDA and NewUni the most teamwork appeared to occur within individual groups; this was considered more of an offline team where respondents were

free to give their input to their LM rather than actively being involved in problem solving. This is an example of informal group activities (Callaghan & Thompson, 2001) as part of the labour process.

Interestingly, the issues surrounding academic respondents and their unwillingness to participate in team-working and collaboration emerged again. At NewUni academic respondents themselves admitted they were unlikely to want to collaborate, claiming that they typically do not work together with colleagues outside of their division or group. A number of academics claimed teamwork goes against many aspects of 'academic individuality' and questioned its relevance to their roles, which has previously been discussed.

While subjectivity and self-identity among professionals was evident in PharmaCo, there was little evidence to indicate respondents did not see the value in collaboration. Many concluded that staff are now more willing to work together to introduce a good system "*that works effectively in producing the results, but immediately improves the whole feel of the team*" [048, PharmaCo]. Although it was seen as easier to communicate 'intra-unit' than 'inter-unit', the HR department stated that they were happy with the progress. Still, they acknowledged that they have some way to go before sites collaborate effectively with each other. Until that knowledge sharing is embedded in the culture, the sponsor admits that competition is likely to still exist between sites. This may negatively affect the Lean agenda, with one LM cautioning that the initial benefits of team-working are often lost as a result of a lack of a full implementation approach, as discussed by Radnor et al. (2006):

> I think we have some very good examples on site of where we have put [Continuous Improvement] teams together and we have had some massive wins - good cost savings and increased capacity. But, at the same time, we have lost the benefits because of the lack of resource or the lack of focus. It's seen as 'just an initiative' instead of being built into your everyday culture.
>
> [051, PharmaCo]

Overall it would therefore appear that in some instances team-working and collaboration has changed as a result of organisations' activities, although this has in many cases been a by-product of the training that respondents have received. Crucially, team-working has not led to increased autonomy control or responsible autonomy in any of the cases here, and it would appear that all of the four cases have some way to go

before this culture is established.

5.3.5 Continuous Improvement

Continuous improvement is seen as an important pillar to Lean, and can make the difference between applying Lean or simply being seen to do it (Emiliani, 2012). All four cases claimed that one of their aims was to create a culture of continuous improvement, whereby employees feel they are able to contribute to the development and improvement of the organisation. All sponsors and facilitator also supported this aim, with one concluding "*if you understand Lean as applying continuous improvement, and using your people the best way you can, I can't think of any area where those principles don't apply*" [001, OldUni]. The experiences of some respondents, however, indicate that continuous improvement is not inbuilt into roles and responsibilities.

A number of respondents at PharmaCo acknowledged that continuously improving their job, and the processes that they work with, is an active part of their roles. Therefore they were willing to invest effort and time into developing continuous improvement behaviours, with the HR department intending (in the long term) to develop a strategy which facilitated and rewarded this. However, a focus on a piecemeal (Radnor et al., 2006) approach to implementation has led to frustration, with one respondent critically concluding that while their CITs had made progress while they were together "*at the end of the team, after 6 months of progress it basically stopped*" [048, PharmaCo]. The issue, according to the HR director and sponsor, was the lack of long term continuous improvement inbuilt into their culture (which was more reactive and short term looking).

Cultural barriers at PharmaCo also manifested themselves as a result of a number of very different and diverse cultures present within different sites. While not quite so pronounced, or geographical, similarities were experienced by respondents in the other three cases: different departments, units or divisions often had very different ways of doing things historically. This was seen as being a barrier to achieving the long term sustainability of continuous improvement.

In addition to organisational barriers, evidence from NewUni indicates that some of the academics were 'repulsed' by the thought of introducing continuous improvement to their roles. Their role, according to one academic respondent, was knowledge creation not suggesting improvements. Another academic, while appearing sympathetic to the Lean agenda, indicated that in order to encourage their academic colleagues to participate in Lean, the easiest answer would be to in-build it into their roles: "*that isn't quite as drastic as completely introducing new ways of working*" [032, NewUni]. Tensions were apparent with regards to what role academics, specifically, play in universities which was seen to restrict continuous improvement activities:

> Academics don't see continuous improvement as part of their daily work. You have got a professor, and I have one in my team who is our most published professor in terms of journals, and he is doing his research. He is publishing in the 4* journals, and he is bringing in income. Lean has nothing to do, in his view, with what he is doing.
>
> [026, NewUni]

This can be linked to discussion in Section *2.4.7 Subjectivity and Self-identity as a Barrier to Lean:* while some senior managers indicated that a lack of extra effort to embrace Lean was a form of resistance, one respondent admitted that it simply is "*not a resistance, it's just not part of what they do*" [026, NewUni], thus defending frontiers of control when those frontiers shift towards management (Bach et al., 2005).

This was illustrated by one academic who claimed "*as a lecturer, I don't think I do continuous improvement. That's the funny thing about the academic sector, it is very individual*" [034, NewUni]. A number of sponsors and senior managers concluded that it would be very difficult to in build these sorts of activities into the roles of staff unless HR processes were changed to facilitate this; indeed at PharmaCo it is the aim to in-build such activities into performance management and reward systems in a way which it is hoped will encourage staff to participate in changes and new ways of working.

Continuous improvement must be in-built into employees' roles and responsibilities, and a part of the culture of the organisation although in the cases here that is not evident. On the one hand, many experienced a lack of ownership and authority to in-build such activities whereas on the other hand some respondents clearly did not want to incorporate the activities. Only PharmaCo appear to be moving towards a new culture of continuous improvement, although this raises questions over how easily Lean

culture can be embedded in non-automotive industries, especially those experiencing some of the issues highlighted throughout these Findings chapters, as well as whether the organisations are able to implement true Lean if this principle is not embedded.

5.4 Summary

This chapter has presented the reflections of employees involved with Lean, and has identified a number of different experiences and thoughts. Firstly, it is evident that their exposure to new working practices largely depends on their role within Lean implementation, and their personal views on it. Those experiences also appear to be determined by whether the process improvement that they had been involved in had been successful or not, and the levels of collaboration, empowerment and ownership as a result.

Secondly, it is clear that Lean Thinking has obvious limits in organisational contexts that are not manufacturing based. This is evident even for organisations like PharmaCo, who have some aspects of manufacturing within their business activity. The pressures these cases face are different to what automotive manufacturing organisations are challenged by, therefore it seems very difficult to implement Lean production *per se*. While it might be concluded some of the organisations are implementing a version of Lean Thinking, if we take Radnor et al. (2006) and Emiliani (2012) illustrations of 'Real' and 'Fake' Lean, the absence of both 'respect for people' and 'continuous improvement' implies that the respondents here are not experiencing or working under Lean environments. As none of the organisations extensively applied Lean, this arguably reduced any potential impacts on new ways of working. The lack of conceptual clarity of Lean Thinking outside automotive is perhaps evidence and account must be taken of a particular situation or context.

Thirdly, and considering the previous point perhaps not surprisingly, resistance was apparent in each case and was both active and passive. Some of that resistance was linked to the subjectivity and self-identity argument whereby those in knowledge based professional occupations were seen as more likely resisting attempts to [direct] control activities that accompanied Lean, than their administrative based colleagues. This manifested instead by such respondents defending frontiers of control, and

experiencing ontological insecurity. In addition to this genuine organisational factors also restricted compliance such as silo mentality, blame cultures, hierarchy and a lack of clarity of what was expected. Some of these are not as apparent in the automotive manufacturing sector.

Fourthly, in interesting point has emerged and links to a number of issues in both this chapter and the previous – controlled participation. The literature in Chapter Two identified that Lean may well be a new form of control i.e. one that is based on both direct control and empowerment, driven by the interests of the organisation, the organisational context and the remit of Lean itself. The evidence in this chapter appears to support this, and indicates that the respondents here felt that their involvement in Lean activities was often managed and controlled by someone other than themselves. This not only impacts whether they can apply new ways of working, but also how they experience Lean more generally.

Finally it would appear that in reality very few new ways of working have transpired as a result of Lean. Of those new ways, many appear to be unintended outcomes of Lean-type activities such as empowerment and team working; these very much linked to the training events themselves as opposed to any specific improvements in processes and the way that things are done. The evidence indicates that each of the four organisations have some way to go before they can claim any changes have occurred.

While the literature has been consulted in the past two chapters, it is important to more closely discuss the findings and reflect on the issues that emerged in the literature review and through the data collection. Thus, the next chapter discusses and interprets the data in order to draw conclusions and themes which link to the literature in Chapter 2. The methodology has allowed the author to gain a great deal of understanding of the experiences and perceptions of workers, and to explore how the labour process has been affected by the introduction of Lean.

Chapter Six Discussion

6.1 Introduction

In this chapter, the findings of the study are discussed with relevance to the literature, in order to provide answers for the research objectives stated in Chapter One. The extent of Lean implementation in the case organisations is evaluated in Section 6.2, including how Lean has been implemented and transferred, along with a proposal for helping visualise respondents' experiences of Lean in the form of 'degrees of Leanness'. The working environment is discussed in Section 6.3, which is underpinned by the labour process perspective and an in-depth exploration of respondents' experiences. Specific reference and links are made to ideas expressed earlier in the Literature Review and such as controlled participation, frontiers of control, surveillance, and self-identity.

This thesis argues, given the evidence from four case organisations here in non-automotive organisational settings, indicates that Lean Thinking can suffer from the absence of clarity and engagement of respondents. Also, at least in part as a consequence of the exclusion of HR professionals from the implementation stage, the selection and application of Lean tools and techniques is managed poorly. As a result of this a number of respondents within this study have experienced some of the negative effects of Lean, such as an increase in control in the form of controlled participation which has, not surprisingly, led to resistance in the forms of misbehaviour and defence of frontiers of control.

The evidence from this study supports much of the existing research in that Lean is being used in non-automotive organisations; however it is not being used and transferred in its true form. Perhaps interestingly this study raises questions as to whether Lean can fulfil its potential in environments and contexts that contain an element of non-tangible service and knowledge, which have a number of highly skilled professionals in. Parallels can therefore be drawn between the cases used here and those in the literature which suggest a 'kaizen-type', or 'Fake Lean' is being implemented. The chapter also discusses how these Lean activities are being imposed on workers who often do not understand the rationale for implementation, and have

rather limited opportunity to influence the implementation process. That said some of the concerns identified in the critical literature on Lean approaches failed to materialise in this case.

6.2 The Extent of Lean Implementation

One of the main problems facing research into the Lean philosophy is inconsistency in the use of the terms used for this management approach, as shown by the varied definitions in both literature and practice identified in Section *2.3 Lean Production: Origins and Conceptualisation*. Data from the four cases here indicates that Lean has not yet been extensively applied across the businesses. While each of the cases are still in relatively early stages of their Lean journey, there appeared to be a number of difficulties with regards to conceptual clarity of Lean, and how Lean can be transferred. From this analysis the author proposes degrees of Leanness which are based on respondent experiences that help to visualise and understand how interviewees have experienced the implementation of Lean thus far.

6.2.1 Conceptualising Lean Thinking

While it has been argued that Lean is notoriously difficult to define as a result of its diverse application throughout time (Holweg, 2007), it is striking to note that there were many commonalities between respondents' and academic conceptualisations of Lean. The findings of this study indicate that while respondents perceive there to be a variation in the use and understanding of different tools and techniques between themselves and senior management, the majority indicated that their organisations focus on only a few of the tools and techniques and neglect, or do not have adequate awareness about, others. This supports the recent conclusions of Radnor & Osborne (2013) who indicate that non-automotive organisations are failing to use the full variety of tools available to them, and often have a lack of understanding in how (broadly) they can apply to their context.

In the first instance many of the respondents appeared to view Lean in terms of methods holistically linked to manufacturing, as opposed to *how* Lean should be applied, supporting the conclusions of Dahlgaard & Østergaard (2000). While there

appeared to be an elaborate understanding of how Lean can improve efficiency through process re-engineering, many respondents also understood Lean to help improve employee empowerment within their roles. Secondly, and as a consequence, Lean was seen more as a management concept than a facilitation approach. Similar results are reported by many other studies (Radnor et al., 2006; Bendell, 2006; Radnor & Bucci, 2011; Yorkstone, 2014). A number of respondents mentioned specific Lean tools and solutions, such as JIT or standardisation, as well as extensive discussions about different aspects of the change process, such as stakeholder involvement and the role of the Lean facilitation team. This is somewhat in line with the hard objective of culture change.

Interviews with managers, administrative staff and professionals revealed significantly different understandings of what Lean is, as well as how it could contribute to process improvement within a specific context. This lack of understanding among a number of respondents of how Lean can be holistically implemented across the organisations studied here is not unique: Lillrank (1995) argued that Lean has historically not seen great success in its implementation due to a lack of understanding of what the term actually means and how it applies to a specific context. Both Baker (2002) and Holweg (2007) comment on the lack of clarification and understanding of the Lean concept which can lead to the use of wrong tool to solve a problem, the use of single tool to solve all of the problem and use the same set of tools on each problem (Pavnaskar et al., 2003: 3077).

This study appears to support those assumptions by indicating that each of the cases here are still unsure of how Lean can be applied to their nonstandard, and rather unique, processes. The result has been, primarily, a focus on the use of a narrow set of tools throughout a number of process improvements. Hines et al. (2004) conclude that organisations implementing Lean are failing to take size, sector and other environmental factors into consideration when conceptualising Lean and it would appear from how respondents defined Lean in this study that this is the case here. More than this, senior management in this study appear to admit that Lean might not ever be able to be fully applied, as a result of the unique characteristics apparent. Therefore, we could question whether Lean can apply it its true form in non-automotive

manufacturing contexts, extending the debates in Section *2.5.1 Looking Beyond Manufacturing*.

From an organisational perspective the move to introduce Lean was not triggered by a critical incident (internal crisis) in any of the cases here, however most cited urgent environmental pressures (such as budget cuts or increasing competition) as being a driver. That said, in all of the four cases Lean was intended to improve services and pursue cultural change (Womack et al., 1990). While only one case had experienced cost cutting and head count reduction, it is difficult to determine whether this was a direct result of Lean or due to changes to organisational structure. What did emerge, however, was the important role that environmental pressures (specifically financial and competitive) have played on each of the cases which serves to underline the effect of the organisations' exposure to environmental pressures (Nordin et al., 2008).

Although such pressures have historically been considered to be low in the context of the four cases here, there is evidence to imply that this is changing. While literature recognises the relevance of environmental factors, it does not specify how they affect Lean implementation (Achanga et al. 2006). This study also indicates that the pressures identified by the four cases are somewhat unique, for example high regulatory requirements within PharmaCo, which have not been identified in existing literature. Further exploration is needed within such sectors before conclusions can be drawn.

The above discussion, therefore, suggests that Lean in the contexts researched here is less distinctive than Lean production; while the contingency perspective on Lean acknowledges that a direct transfer of the Lean production approach to other organisational settings is not possible (Hines et al., 2004), it is possible to see how Lean can be implemented in nonstandard environments but that these tools and techniques must be fit for purpose. The lack of new sector specific tools and techniques for Lean has not gone unnoticed (Radnor & Osborne, 2013) however Lean Thinking in the four cases here appears to better resemble conventional process analysis and optimisation approaches.

While respondents generally placed their emphasis on staff participation and reflective practice, evidence in this study indicates that Lean Thinking was understood by senior managers to be a way of reengineering complicated processes which were mainly transactional in nature, and by non-senior management as an additional role as part of their job. Anything outside the transactional remit was often considered to be too difficult to work with, and thus Lean was considered either problematic or inappropriate. There was no evidence in this research to suggest that Lean was implemented by management with the specific purpose of controlling or deskilling workers, although a new form of control certainly appeared to be *an* outcome.

6.2.2 Transferring Lean Thinking

While Lean proponents argue that any organisational setting can benefit from waste and cost reduction, and that the application of techniques can reduce turnaround times, this study highlights that cost factors (both financial and economic) can create unique demands. Waste and cost cutting are not always the primary aims of the organisations here, which have a high degree of intangible services that they offer. The critical questions raised earlier in Section *2.5 Lean as Universally Applicable* are around whether Lean, in any sector, is simply a box of tricks that improve work place experience (Womack et al., 1990) or in reality a social and economic agenda allowing new forms and patterns of management subordination (Stewart et al., 2010).

What is evident is that the pressures on the different organisations here must be taken into account when debating how transferrable Lean Thinking is (Hines et al., 2004). Within the non-manufacturing contexts here, these are often entirely disparate to those in the manufacturing sector. Therefore Lean Thinking and Lean processes may not be applied universally as a system in which human perceptions and experiences mix with measurable processes, and where cost and quality may not be understood or connected.

If we take quality as an example, quality within the four case organisations here as mainly based on expectations rather than predictable outcomes, and where the trade-off between cost and quality appeared to be a common dilemma for respondents who were managers. This alone indicates that Lean may not be as easy to replicate in non-traditional organisational settings as Womack et al. (1990) might lead us to believe. This

study sympathises with the conclusions drawn by Kollberg et al. (2007) who suggest that while Lean is transferrable (in their case to healthcare) the philosophy must be coupled with other techniques in order to make it applicable. The authors suggest that it is important to design a Lean system which reflects what efficiency and effectiveness looks like within that specific context, and that any measurements must be parallel to other measurement systems.

The example stated in Chapter Five at NewUni of the quality measurements being fabricated for the purpose of Lean illustrate this point, as does the experiences of some respondents at PharmaCo who indicated that cost and quality were not necessarily driving their agenda. This study suggests that measurements and controls are sometimes being used in order to legitimise the transfer of Lean, and that these are not always appropriate for the context (Kollberg et al., 2007; de Souza, 2009; Burgess & Radnor, 2013) which is similar to the conclusions in the HMRC example extensively researched by Carter et al. (2010).

Nevertheless Lean Thinking is being used in the four cases (albeit not from an integrated, holistic perspective) in order to change culture and appears to be occluded in the overall strategies of each of the four organisations. Rhetorically each of the strategies attempts to emphasise the importance of capable leadership, behaviours and improved processes for stakeholders, although what has emerged is that Lean within the settings researched here is not a single point intervention. Rather, it is the outcome of a continuous process of learning, thus the challenge lies not in its theory but in its application to settings in which transactional services and administration is only a small aspect.

This study would therefore question Emiliani's (2004) assumption that Lean can work in non-transactional service industries that rely on knowledge, human interpretation and experience. As most of the cases here reported that they could really only see how Lean applied to transactional processes, the challenge exists as Lean moves further away from recognizable products and production processes and steps and transactions become less defined. Lean principles are intended to reduce labour, space, capital, and time in delivering the right products or services to end customers (Womack et al., 1990;

Hammer & Champry, 1993) however when these aspects are not clear to workers, transfer is seen as difficult.

In addition to this, 'value' is often very difficult to define in these settings. Thus, the danger of Lean Thinking is that it neglects these sector specific intangible aspects and focuses on tangle benefits.. In manufacturing, task standardisation is used in order to reduce variation however a common issue in all of the cases here is they are characterised by relatively high variation often generated by an earlier unsatisfactory experience (the example given by NewUni was students failing). This all leads to errors and delay as a result, thus indicating that the experiences of the organisations here is not directly or easily comparable to manufacturing.

Although Emiliani (2004) conducted in-depth research in Higher Education, he assumed that while the environment certainly changes as Lean moves beyond production, the tools remain the same. This study supports the conclusions of Radnor & Osborne (2013) that the value stream is different and thus different tools are required. Understanding and delivering what the customer values is essential; providing that in a non-standard environment which is characterised by often lengthy bureaucratic processes (often out of the control of the organisations here) and "customization" is difficult.

The findings from this study have a good deal in common with those of Hines & Lethbridge (2008) and Radnor & Bucci (2011), although, arguably, paint a less optimistic picture for the transfer of Lean Thinking in these settings here. The application of Lean Thinking has given these four organisations tools and methods to work according to their already existing values. Thus, Lean seems to 'fit' (Cooney, 2002) in these contexts researched implying there may be limits to the universality of Lean (Pettersen, 2009). There appears to be some support in this study that, despite the evangelical stance of Womack et al. (1990), true or full Lean is primarily confined to implementation within the automotive sector, or at least that is the perception of respondents here.

Lean, here, exists at operational level (within confined processes) but to a lesser degree strategic level (Hines et al., 2004), as well as having a practical orientation (Shah &

Ward, 2008). The practical perspective within each of the four cases here implies the use of a set of management practices, tools, or techniques that can be observed directly and support the observations of Shah & Ward (2003) and Li et al. (2005). Further analysis based on the discussion presented in Section *2.5.2 "Real Lean" and "Fake Lean"* indicates that, despite the 'respect for people' and 'continuous improvement' elements being identified as key principles of Lean (Ohno, 1979; Modig & Ahlstrom, 2012; Hines et al., 2004; Emiliani, 2013) and expressed as a strategic priority of Lean by senior manager respondents here, respondents involved in Lean in this study imply that 'Lean' is not being implemented necessarily, rather a version of the concept.

In part this links to discussion on the extent of application in the cases here - existing research indicates that a number of companies have learnt from experience that applying Lean principles and techniques in isolation from the underlying Lean philosophy does not lead to sustained improvement of efficiency in their processes (Spear & Bowen, 1999; Shirouzu & Moffett, 2004; Browning & Heath, 2009). Here the (documental) evidence indicates that while there are some improvements cited, Lean in atypical contexts such as these can deliver less impressive impacts in terms of scale and scope that in an automotive production environment. In addition these improvements have mainly been restricted to specific areas of the business that senior management or facilitator respondents consider to be 'easier' to change, i.e. they are transactional and relatively high volume. That said, when compared to some of the revolutionary impacts reported in the manufacturing environment (Womack et al., 1990) these results appears somewhat disappointing.

The expression 'pink factory' was originally developed by Baxter & Hirschhauser (2004) and is used to describe organisations which create the impression of performance improvements, but do not display evidence internally of that improvement. The metaphor is linked to the colloquial saying "rose tinted glasses" where management programmes are often fully detached from what is actually occurring on the shop floor. There are parallels that can be drawn between their conclusions, and the implementation of Lean here, especially with regards to how sponsors, senior managers and facilitators perceive their organisations. While the Baxter & Hirschhauser (2004) suggest that pink factories display visual changes, the evidence from this study indicates

narrative changes (such as changes in discourse and language) with very little evidence of visual improvements.

The implementation of such performance improvement initiatives are intended to highlight the company's competence to the outside world (Radnor et al., 2006), and the company may never really intend to revolutionise the workplace. If it does, it is likely to be at the expense of workers, such as is highlighted by Carter et al. (2011). A number of senior managers and facilitators in this study admitted that their organisations were unlikely to ever implement Lean throughout them, as a result of their uniqueness, thus questioning whether the workplaces would be revolutionised. Perhaps in the cases here, this is not the new form of organisation that Kenney & Florida (1995) talk of.

The implication is that we have some 'pink organisations' here, and we will see in the next section that the working environment has not changed since the introduction of Lean Thinking. To the cases, the key is that they are being seen to apply Lean. This is perhaps as a result of external pressures as well as wanting to build a positive image to their stakeholders, as opposed to actually improving their processes. It is for this reason that the author of this thesis proposes that the sour cases here are embarking on practical rather than philosophical application of Lean (Shah & Ward, 2007).

The above discussion indicates that Lean is challenging to transfer to non-automotive environments, despite a large number of research existing claiming successes. The lack of empathy within the cases to with the contextual relevance of Lean was demonstrated with their approach key training programmes for the most part. It was noted in Section *1.2 Significance of the Research* that less than 10% (Baker, 2002) of organisations are successful in transfer. While it is not possible from the research method of this thesis to confirm that (a different theoretical lens would be needed, as well as methodology) this study does indicate that implementation is difficult. Therefore, this study appears to confirm the conclusions of Hensel et al. (2008) that Lean is challenging due to contextual aspects, largely as a result of the dependence on a highly skilled workforce which will be further discussed in Section 6.3.

6.2.3 Degrees of Leanness

The above discussion raises questions over the extent to which managers themselves practised Lean rather than merely espouse it. Respondents were dismissive of the potential for the HR departments to contribute to implementing Lean Thinking, and this reflected perceptions that HR departments play a key role in implementing staffing levels (with staff reductions commonly associated with Lean). From the analysis presented in the sections above and the findings in Chapters Four and Five, it would appear that the cases here are engaging in Lean activities in very different ways: what might be considered to be a very Lean way of implementing training (for example) might not mean respondents accept Lean. This implied that certain degrees of Leanness are present and that if certain features are happening, according to the literature, then this is considered to be 'Lean'.

The idea of creating 'degrees of leanness' is not new, for example Karlsson & Åhlström (1996), Soriano-Meier & Forrester (2002), Bayou & De Korvin (2008) and Wan & Chen (2008) among others have already explored the notion of what determinants there are in Lean organisations. **Error! Reference source not found.** in Section *2.5.2 "Real Lean" and Fake Lean"* attempted to capture some of the different approaches to Lean based on how authors conceptualise and apply the concept. While existing degrees of leanness appear to be created from mainly manufacturing or automotive-like case studies and based on (for the most part) operational measures, this does not illustrate how workers experience Lean based on their qualitative reflection.

On analysis of the data, a 'scale' emerged from respondents' experiences indicating in some instances, cases were 'more Lean' and in others were 'less Lean'. The author has linked this to the broad categorisations presented by both Emiliani (2013) and Radnor et al. (2006) who indicate organisations can be implementing either one of the following two (illustrated in Table 4 below):

1. 'Real Lean" incorporates two key fundamentals derived from the TPS – 'Respect for People' and 'Continuous Improvement'. This is what Radnor et al. (2006) considers to be 'full implementation' and strategic (Shah & Ward, 2007);

2. ‘Fake Lean’ is where organisations focus solely on the ‘Continuous Improvement’ aspect and ignore ‘Respect for People’. This is what Radnor et al. (2006) considers to be ‘kaizen type’ and is practical (Shah & Ward, 2007) focusing on specific tools.

Table 4 Visualising Respondents' Experiences of Lean Implementation

Least Lean-like	*Most Lean-like*
Fake Lean	Real Lean
Kaizen-Type	Full Implementation

The former, argues Emiliani & Emiliani (2013), is not sustainable due to unbalanced outcomes and staff who feel harmed by change. This is evidenced in the research criticising Lean from a LPT perspective. Depending on how we look at Lean, and the experiences of respondents in this thesis, we could propose that the cases move along this scale, to different points, according to what they are doing and how respondents are experiencing Lean. The way in which they move, therefore, casts doubt of what Lean actually is. Consequently, it is important to highlight that generalising (both in terms of what Lean is conceptualised as generally, and Leanness specifically) is not possible. Moreover, the degrees of Leanness identified here are based on human judgement and experiences of Lean which while being a potential limitation still allows us to understand how employees see Lean from their own perspective and experience of the labour processes.

Firstly, if we consider Lean as a philosophy (Table 5) and a way of thinking, it would appear that PharmaCo and RDA are the ‘most Lean’ of the cases here. The philosophical approach is one where Lean is more likely to be viewed as a shared vision and strategy, as opposed to a single process improvement (Moore, 2001; Bateman, 2002).

Table 5 Lean as a Philosophy

Least Lean		*Most Lean*	
OldUni	NewUni	RDA	PharmaCo

Evidence indicates that PharmaCo saw Lean (certainly in the long term) as being integrated into their vision and strategy largely as a result of the recent acknowledgement by the HR department that Lean would facilitate cultural

transformation throughout the business. This supports Hines et al.'s (1998) view of the importance of this vision in implementation, although caution must be noted as PharmaCo do not yet appear to be achieving full implementation as a result of the relative newness of the concept. Lean at both RDA and PharmaCo is seen as a journey (Elliot, 2001) by respondents and is intended to become a way of thinking for the future. Rhetorically, the aim appears to be along the lines of what Kenney & Florida (1995) describe as a new organisational form as the ideas from senior management suggest a version of 'innovation-mediated production' in the future. This would require further exploration later, to confirm.

Moreover the ways in which respondents at these organisations defined Lean (see *Appendix 11 How respondents understood Lean*) as was linked more to the philosophical view than the process view. If we consider 'Real Lean' (Emiliani, 2010) to be the presence of a continuous improvement culture and respect for people then evidence from PharmaCo indicates that this is where the organisation is hoping to head. These values mirror the new strategic direction which the organisation is working towards, and could form the foundations of the organisations' own Lean house. Lean within each highlighted the key pillars of efficiency, effectiveness and respect for people in terms of the organisational rhetoric as identified by Womack & Jones (2006) as Lean Thinking.

OldUni and NewUni appear to be implementing a few elements of Lean within distinct areas of their organisations (Chase, 1992), where continuous improvement activities were often felt by respondents to be implemented at the expense of the respect for people aspect. This is what Emiliani (2013) refers to as "Fake Lean" and is evidenced by the fact that in both cases a small number of select processes and practices have been subject to Lean, with respondents involved in improvement experiencing a narrow range of tools in their training (see Section 6.3).

This indicates a level of managed participation (Dohse et al., 1985) whereby organisations are choosing what processes to improve and who to be involved. In addition to this respondents who were senior managers claimed that integration of Lean into the entire organisational system (strategically) is likely to be difficult in these

two organisations. Thus, we can imply that these two cases are using a process, or a tools-based, approach as identified by Radnor et al. (2006).

Secondly, if we consider Lean processes and sets of events (Table 6) we can see that the cases appear to move and change position from the previous visualisation. According to literature there are certain processes and sets of events that organisations must go through in order to be considered Lean: these are the technical requirements and steps linked to the five principles of Lean (Womack & Jones, 2006) considered in Section *2.3.3 Lean Production to Lean Thinking*.

Table 6 Lean processes and sets of events

Least Lean		*Most Lean*	
PharmaCo	RDA	NewUni	OldUni

From this perspective, the evidence indicates that OldUni appear to be the 'most Lean' as they demonstrated the most structured approach to identifying and reengineering processes (Section *4.2.1 Case: OldUni*). This was partly due to the type of training that was delivered, using 'Plan Do Check Act' based around the five Lean principles of Womack & Jones (2006), and partly because the organisation focus on specific processes. This was similar for NewUni Where facilitators here referred to and used the same language as the five principles of Lean (Section *4.2.2 Case: NewUni*) based around Womack & Jones' (2006) definition of Lean Thinking.

Controlled participation (Dohse et al., 1985) is also evident here, as senior management are in charge of the processes, sets of events and participation of staff. However it must be noted that while each appears on the surface have this focus, in neither case was Lean implemented across the entire organisation. This somewhat supports the assumption that the Kaizen Event approach often used in the non-automotive manufacturing contexts (Emiliani, 2012). Radnor & Osborne (2013) indicate that some organisations are 'messy' in how they apply process improvements, which consequently makes a system wide approach difficult to achieve. This view is supported by senior managers.

On the other hand, RDA and PharmaCo appear to be the 'least Lean' when considering this perspective due to the fact that respondents indicated process improvements and sets of events are much more informally identified, if at all. While RDA has a more logical process to identifying improvements, and set training, it is more informal that the previous two cases. PharmaCo are adopting a cultural perspective, as reiterated by Emiliani (2003), Gregory (2002) and Liker (2004) whereby Lean is seen more as a long-term commitment. However their use of CITs to deliver improvements is (to date) somewhat limited, thus indicating that while PharmaCo might be taking the most strategic approach to Lean (Table 5) they still have some way to go, according to respondents, in order to effectively achieve process improvements.

Thirdly, if we consider acceptance of Lean Thinking by respondents in the cases here (Table 7) it is easy to see that participants appeared to accept the introduction (or imposition) of Lean in different ways. The context they worked in affected this, and there appears to be some links here with how the organisations viewed Lean as a philosophy (Table 5). However the author suggests that NewUni swap with OldUni as a result of the number of professionals (academics) interviewed and involved in Lean compared to OldUni.

Table 7 Acceptance of Lean Thinking

Least Lean		*Most Lean*	
NewUni	OldUni	RDA	PharmaCo

Generally respondents at PharmaCo claimed that as they saw Lean (and other management initiatives) as a part of the role and responsibility, they accepted the concept more that respondents at the other three cases. As a consequence these respondents did not see Lean as being an imposition or requiring extra effort. Although some PharmaCo respondents felt that Lean was 'another fad', generally they fulfilled their new obligations and even exceeded them. This can be compared to Buntings (2004) 'willing slaves', however like Carter et al. (2011) express these respondents often felt they had little choice over the effort they put into Lean. Although not as pronounced, the situation was somewhat similar at RDA where respondents had a range of experiences and were more open to changing their working practices than those at NewUni or OldUni.

Evidence here supports the conclusions of Hensel et al. (2008) who claim that Lean is difficult to apply in environments that contain a large number of highly skilled workers, such as professionals. At this end of the scale we have two cases where respondents claimed aspects of institutionalism, bureaucracy and silo mentality (among others) characterised culture. This, along with a strong sense of self-identity and idea of what an academic does meant that acceptance of new ways of working (Thomas & Davies, 2005), let alone Lean Thinking, was somewhat limited. As discussed in the Literature Review (Section *2.4.2 Defending Frontiers of Control*), the decision to engage and accept Lean in the cases here appeared to rest with respondent themselves and not managers, for the most part.

Those respondents in professional roles claimed that Lean was not a part of their job, and so many did not accept the new way of thinking or working. This is evidence to support what Heldal (2015) describes as a natural divide that exists between managers who, on the one hand, want to plan and control work and professionals, on the other hand, who wish to retain their autonomy and is explored in more detail in Section *2.4.7 Subjectivity and Self-identity as a Barrier to Lean*. Moreover, there is evidence to support that 'making out' (Roy, 1952) is occurring at OldUni and NewUni, where academics are admitting to applying the amount of effort that they can get away with in order to be seen to accept Lean.

This was evidenced through the academic at NewUni who openly admitted they did not apply Lean in their work but the important message was they were seen to apply it. Respondents in administrative and support positions within these two cases tended to be involved in the more transactional areas and generally accepted Lean (Swank, 2003; Piercy & Rich, 2009) more than their colleagues. At the same time sponsors and senior managers in OldUni and NewUni indicated that their respective organisations were unlikely to challenge this (lack of) acceptance in the near future. This further questions the application of Lean outside automotive settings.

Lastly, if we consider Lean training activity (Table 8) then it could be proposed that the case that most closely fits the traditional approach is NewUni, although this is only externally and because their training is a day at the automotive factory. Each of the

cases in this study appeared to implement Lean, in the first instance, through training activities also suggesting controlled participation (Dohse et al., 1985) extends to this topic. While literature tends to link skills training with empowerment and responsible autonomy (Freidman, 1977), the evidence in this thesis indicates that Lean redefines the 'rules' and seemingly provides management with the upper hand by advocating both control and autonomy through the guise of empowerment, and within the remits set by management.

Table 8 Lean Training Activity

Least Lean		*Most Lean*	
PharmaCo	RDA	OldUni	NewUni

There is evidence to support authors who claim that Lean can be implemented through higher levels of control and standardisation without necessarily providing a better experience for workers through empowerment (Berggren, 1992; Parker & Slaughter, 1995; Lewchuk & Robertson, 1997), and the ways in which participation in Lean activities appears to be controlled by the organisations in terms of which topics, goals and activities are embarked up on appears to provide some confirmation for Dohse et al. (1985) and 'managed participation'. This is because there was little evidence in any case here that respondents involved in training experienced higher levels of empowerment. On this basis, NewUni would appear the 'least Lean' as a result of their approach to training being from a practical perspective where only the executive team are involved in process monitoring through A3 visual management (Shah & Ward, 2007).

OldUni appear to have adapted the approach advocated by Womack & Jones (2006) and focused on a training design that the facilitators and senior manager believe is fit for the purpose of their processes and context. Supporting Allan & Sinha (2013) training is internal. Respondents who had taken part in the training reflected that the focus on specific skills to improve a pre-determined process and seen by some an example of a cherry-picking process approach (Moore, 2001; Radnor et al., 2006).

Liker (1998) claims that too often organisations 'cherry pick' tools and improvements in order to deliver 'quick wins', yet this is at the expense of full implementation and a

strategic approach. Radnor et al. (2006) believe that a number of organisations in non-manufacturing environments choose this approach, which leads to what Liker (2004) refers to as the 'superficial Lean route'. However the design, delivery and focus of the training (Crute et al., 2003) has been met by mixed responses by respondents which is explored in Section 6.3.

While RDA appeared to provide LTE participants with some Lean tools and techniques, their training was cited by respondents as being informal and limited. The focus appears to have moved away from the 'hard' approach towards the 'developmental' approach, utilising mentoring and coaching in order to develop Lean behaviours and help foster acceptance. Evidence would suggest that if PharmaCo continue with their CITs, and create a culture which sees the value of those teams, then this could be potentially change their position in Table 8. Currently, the lack of autonomy control as outlined by Spenner (1990) and reduced task discretion (Feltstead et al., 2004) indicates that training has some way to go, and while some authors would argue this is a form of deskilling, caution must be placed on concluding this.

From the discussion above it is perhaps too simplistic to state that the cases here are 'Lean' or 'not Lean'. Caution must be advised when interpreting these tables as they are based on evidence gathered from the *perceptions* of respondents and these may not be the *reality* within the cases. While this is largely subjective, the author believes that is it important to visualise Lean in this way as it serves to support the conclusions of Hines et al. (1998) that the conceptualisation and utility of Lean is messy, ambiguous and complicated. Further, it provides evidence and reasoning as to how respondents experienced Lean within their individual cases. This complexity appears to apply to the case organisations used here, as much as to non-automotive manufacturing organisations more generally (Radnor & Osborne, 2013).

6.2.4 Human Resources Specialist Role?

The Literature Review (Section *2.5.3 Lean Thinking and HRM: Integration and Implementation*) identified that in order for Lean to be successfully implemented, Human Resource (HR) involvement is key. According to the data collected here, the prognosis for the role of HR professionals in the delivery of Lean is somewhat negative.

Nevertheless in contrast with some researchers, such as Carter et al. (2012), it is perhaps still too early to judge with any conviction the efficacy of Lean Thinking in sectors in which organisation and processes are less transactional than many of the areas currently being researched.

In the first instance, it is evident that in the cases here that there is an absence of clarity when it comes to a shared understanding of what Lean Thinking is, what parts of the organisation it is appropriate to apply it to, and establishing the most effective mechanisms through which to embed it. The heterogeneity of organisations even within the same sector, such as OldUni and NewUni, means that it is unlikely that a definitive notion of Lean will apply across the board. Thus, the Womack et al. (1990) claims of universality are idealistic and adaptations to models will have to be made, given different inputs, outputs and environments.

It was apparent from this study that the absence of HR professional involvement can be detrimental to achieving the strategic aims of Lean (in these cases efficiency improvements and cultural change). The data does not allow the apportioning of blame for this situation and it would be inappropriate to do so, but perhaps one could say with some confidence that all parties, be they sponsors, managers, facilitators or HR professionals, are responsible for ensuring that pervasive HR systems are integrated into Lean implementation and that expert HR advice is sought and provided. It is interesting to note that where Lean Thinking was implemented with the help of the HR department, i.e. PharmaCo and RDA, we can see that the perceptions and experiences of acceptance are higher (Table 7). While it is perhaps too bold to claim that acceptance is higher because of HR's involvement, the mere presence of HR professionals in any change which affects work organisation and job design is arguably necessary.

While some HR processes are more or less stand alone (for instance, OldUni were able to include payroll under the aegis of its Lean programme) the line of least resistance in the case of systems (such as performance management, job design and evaluation, and workforce planning) that are embedded in core 'business' activities was adopted. While there was an acknowledgement that HR processes are needed in order to underpin and

facilitate many of the long lasting changes needed as part of a Lean agenda, only one organisation was moving towards building a HR architecture that would facilitate this.

The delivery of Lean training events was considered to be less than ideal (supporting Boyer, 1996; Barker, 1998; Crute et al., 2003 and Pollitt, 2006) in all four cases and the requirement for improved strategic, coherent and relevant (to the participants, at least) training was evident. It is this aspect of Lean implementation that may offer the best opportunity for HR professionals to contribute to the development of Lean application, to demonstrate their importance to Lean processes and to ensure the integration of all relevant HR systems into the venture.

It could also be proposed that the involvement of HR on the cases here was subject to senior management 'approval' – when the organisations did not want them involved they were not integrated into implementation. This provides some support for the likes of Thomas (1989) Dohse et al. (1985) and Graham (1995) in that participation (in this case of the HR department) is often tightly controlled by management as part of a controlled participation effort.

6.3 The Working Environment

Advocates of Lean have continually argued that Lean Thinking is a system of management that can radically transform inefficiency systems by eliminating waste, adding value and, thus, maximising an organisations' economic performance (Womack et al., 1990). Evidence from this study, analysed using a labour process lens, questions the extent to which work organisation does change as a result of the introduction of Lean Thinking. Some of the concerns identified in the literature on Lean approaches failed to materialise in some of the cases used in this thesis - there was no process of job fragmentation or deskilling (found by Carter et al., 2011) although this could be due to the fact none of the cases are fully implementing Lean as yet.

However, there was some support for the assertions by Harrison (1997) and Taylor et al. (2012) of management by fear, and Parker & Slaughter (1995) of management by stress. There was also some evidence of an uncomfortable work environment supporting a number of existing studies (such as Landsbergis et al., 1999; de Treville &

Antonakis, 2006; Carter et al., 2011, 2012a) and extending these conclusions to the contexts of the cases studied here. This points towards Dohse et al.'s (1985) managed participation. This section discusses the findings with regards to how respondents experienced Lean.

6.3.1 More Effort Required

This research showed that there was a shared view among managers and academics that the construction of specific characteristics, such as academic freedom, and the difficulties associated with measuring intangible contributions and outputs are significant in limiting expectations that professionals would support Lean. It is clear that in previous years, academics have not experienced the types of control, and 'interference' of management, as much as they have under Lean (Taylor & Bains, 2001; Worthington & Hodgson, 2005). This has made them question their role and an inability to accept changes at the frontiers**.**

Additionally, Lean was seen by a number of respondents as being a management attempt to extract increasing amounts of effort out of workers, with no link between effort and reward in any of the cases. Lean required management to both maximise the effort some respondents needed to do their jobs, while at the same time not enlarging the workforce (Carter et al., 2012a). One of the key areas in which employees were expected to increase their effort was in their participation in LTEs the activities associated with it.

Training programmes were set up for respondents involved in Lean, and respondents were expected to 'do Lean' on top of their current roles, with senior managers and sponsors relying on discretionary effort (Thompson & Smith, 2009) within the informal labour process. The majority of respondents had little or no choice in whether they were involved in LTEs, thus losing a level of autonomy control (Spenner, 1990) and influence over their work activities. In many instances, the fact that senior managers or facilitators chose participants of LTEs indicates a level of control under the guise of empowerment, which as Worthington & Hodgson (2005) point out is different to the experiences documents within manufacturing.

The result is that there is evidence to support Dohse et al. (1985) who conclude that Lean is a system that enlists employees in enhanced, controlled, participation in order to develop standards. This thesis appears to concur with the authors (idem.) conclusions that workers are not deprived of responsibility nor directly controlled, motivated by management. In addition of the LTE activities, respondents were required to continue carrying out their day jobs at times when workload was heaviest a number of respondents reflected on the amount of effort that was required just to keep up with responsibilities. This offers some empathy with Carter et al.'s (2011) conclusions that workers may have little choice over their effort to implement Lean and that this may lead to more work. However, this is not a general conclusion from the evidence collected for this thesis.

In addition to the extra time and effort, a common criticism was the design of the training which was seen as not fit for purpose by many and therefore a waste of time. For example, a number of respondents felt that LTEs did not focus enough on broader Lean tools aspect, providing support for Panvnaskat et al. (2003) who concluded a misunderstanding of the tools leads to ineffective implementation of Lean. This further supports the notion of controlled participation, and while this does not necessarily support the deskilling argument, it does indicate that skills may be being narrowed in a controlled manner (Graham, 1995; Heldal, 2015). A common reflection was that this resulted in resistance to Lean as some respondents felt they lacked the skills and Lean knowledge (Barker, 1998) in addition to inadequate design of the programme (Crute et al., 2003) and ineffective assessment of processes to be improved (Boyer, 1996; Pollitt, 2006).

While authors such as Gallie et al. (1998) have argued that denying higher skilled workers participation in skills training leads to de-motivation and a decline in the quality of work, this study indicates that professionals here were unwilling to participate in LTEs as they did not see it a part of their role, resulting in a degree of ontological insecurity (Giddens, 1991). This study explored the different approaches to skills training in the four cases, and whether respondents felt that the training they were offered facilitated greater influence over different levels of decision making at work. While in the HRM literature skills training equates to empowerment, the reality

here was the opposite. Training required extra effort, and the reward was not likely to be empowerment, largely as a result of the lack of holistic approach each of the cases was taking.

The reality of limited task discretion and autonomy control was at odds with many of the respondents' aspirations of training. Interestingly the majority of respondents, professionals aside, indicated that they would welcome skills training that would help them to exercise greater influence over the processes they deal with (Stewart et al., 2010). While acknowledging that extra effort would be required, a large number felt that this was more important than learning about the philosophy of Lean, as currently respondents reported a gap between the training they receive and what they felt was necessary to meet their needs (Neilson, 2007). This debate links to ideas identified by Graham (1995: 58) who claims a gap between "training ideas and work realities" exits.

The skills discussion is important here, both in terms of traditional LPT and work organisation under Lean: Womack et al. (1990) argued that a Lean system can transform a workforce from using a narrow inflexible skill base to one based on teamwork and flexible skills, and propose that Lean allows employees to use their intellectual skills to develop themselves and their organisations. While there was no evidence of respondents experiencing deskilling, they did suggest that they did not consider themselves to be skilled enough to implement Lean initiatives. There could be several reasons for this.

Firstly, Lean has not been applied in any of the case organisations across the whole business – therefore a lack of integration organisation wide activities raises questions over whether the results on the scale of Carter et al. (2012a), for example, could apply here. Time will tell whether respondents have experienced deskilling in the way that some critics describe, and this would be interesting to research as an extension to this study. Secondly, as a result of Lean being applied in pockets throughout each of the four cases here the majority of respondents appear to still be dealing with a number of 'non Lean' processes and systems which have not been 'improved'. Had the organisations here have been further along their Lean journey this might have produced a different set of experiences for employees.

There is further evidence here to support Wilkinson (1983) who suggests that workers will 'hide' work and become tactical in the levels of effort that they give management in order to protect themselves over time. This was more so for the academics, and in the case of NewUni 'hiding work' related to some respondents who told the Executive Team and sponsor that they were using metrics and implementing Lean with their staff but admitted to the researcher that they didn't in order to protect the status quo.

There was no evidence in this study of managers 'swapping favours' with staff to encourage them to implement Lean (as in Delbridge's 1998 study) although there was the acknowledged that certain members of staff would require different a different narrative and language in order to encourage them to change their style. Therefore, the evidence here appears to suggest that the decision to apply the effort for Lean lies with the worker themselves, and not necessarily the manager.

6.3.2 A Different Form of Control?

It has long since been argued by critics of Lean that the philosophy is a form of Taylorism, and this was discussed in detail in Section *2.2.2 The Emergence of Mass Production*. An analysis of the literature enabled the author to propose a new notion, based on Dohse et al. (1985), of 'controlled participation' and this is discussed in Section *2.4.4 From Responsible Autonomy to Controlled Participation*. After careful analysis of the data, it can be assumed that the four cases here appear to manage the participation of the respondents interviewed for this study in a controlled way, and this is not necessarily through traditional [direct] control.

While Adler (1993) suggests that employee involvement in decision making should distinguish between a Lean system and a mass production system, yet evidence from the four cases here indicates that respondents are not involved in many of the decisions they are dealing with, and while it is perhaps too early to claim that Lean in these cases is a form of Tayloristic direct control, the future is not optimistic. There are a number of possible explanations for this. Firstly, management style in three of the four cases was not perceived by respondents as being open. Consequently LMs and senior managers generally were not seen to welcome the worker voice, supporting Stewart et al.'s findings (2010). Secondly, this could be a result of the approach that the organisations

are taking and the lack of communication of Lean. In three of the four cases here someone other than those involved in the LTE made the decision to change that process.

There is a paradox here between management giving up control without losing control, and in many situations LMs themselves were powerless to resist Lean. It might be argued that this is an attempt to standardise and routinize work, while removing the ability of respondents to use their specific knowledge (Braverman, 1974; Thompson, 1989). This has led to frustrations, especially among professional respondents.

Along with the implementation of Lean there is often an assumption made by staff that this will lead to higher levels of control over decisions within their remit, however Klein (1989) warns against over-promising autonomy when introducing Lean Thinking as such promises can lead to management-labour conflict (Bruno & Jordan, 2002). While there is little evidence in this study to indicate any significant management-labour conflict other than misbehaviour, there is evidence to suggest that a lack of participating in the decision making process has, at times, led to disengagement and negative experiences of respondents.

This provides some support for the conclusions of Klein (1989) who suggests that management should not be promising workers autonomy and involvement in decision making, when what they actually mean is a degree of cooperation exercised through managed participation (Dohse et al., 1985). This was evidenced through the LM who admitted on one occasion to re-deploying two members of his staff who did not cooperate with the Lean agenda. Accordingly, there could be an argument in this instance for the existence of the direct (technical) controls proposed by Friedman (1977) which aimed to control workers by Tayloristic methods, such as those used under mass production. However, we cannot generalise this and therefore the author proposes that there is more support for what Dohse et al. (1985) conclude: Lean is a system that enlists employees in enhanced, controlled, participation in order to develop standards in a managed way.

While the evidence in this study does not sound quite as positive as, for example, Radnor et al. (2006) it equally does not support the conclusions of, for example, Carter

et al. (2012a) who indicates that any productivity gains are attributable to work intensification (and thus direct control) more than employee participation (or responsible autonomy). The reasons for this, within this study, could be due to a lack of understanding of what Lean actually means and how it transfers to the contexts explored here as well as a lack of holistic application. Moreover, professional respondents appear to escape this type of control, yet at the same time 'ticking boxes' McGivern & Ferlie (2007) only for the reason to satisfy control systems. Reay & Hinings (2005) conclude that such workers may give up a short term battle, but never the long term fight – the latter appears to be fuelled by the ideas of subjectivity mentioned throughout.

In contrast, those in respondents in lower skilled roles, such administrative and support positions were more likely to be coerced into being involved in Lean by senior staff. There is some support for the arguments of Berggren (1992) and Delbridge et al. (1992) that lower levels of autonomy results in employee participation in decision making remaining restricted. If Lean Thinking offers plausible reasons for adoption in one part of the economy then perhaps it is conceivable to envisage a form of Lean everywhere. Where Lean is seen to not work in the form that Lean production does, then perhaps there are good grounds for this (as discussed above). These may be grounds that are not essentially sector specific, since they tell us what it is about work and employment more broadly.

This appears difficult to achieve in the cases here, and that is acknowledged by senior respondents. Professionals reflected on the occupational control of their work (Freidson, 1983) driven by their invested interests to a certain ideology (Willmott, 1997) which dictates and determines to a large degree particular conditions and power relations" (Collinson, 1994). Senior mangers actively steered away from conflict with professionals, believing that they had little right to determine what a professional does at work. This is an interesting point, as it indicates that it is not just professionals themselves that hold this subjectivity. Time will tell whether this will continue, however the question remains as to why organisations may wish to cheapen, control and reduce labour in sectors which historically rely on the presence of knowledgeable professionals who are used to being given autonomy and empowerment in their roles. This is central

to the question of what Lean is about, whether hidden or not in the agenda of employee involvement programmes, and requires further research.

While establishing and empowering shop floor teams is essential for successful implementation of Lean Thinking, there were mixed evidence in this research to indicate that collaboration had happened. Where it was happening, it appeared to be in a controlled way, determined by sponsors and facilitators. Extensive literature indicates that the reality is employees often find themselves with collaboration opportunity (Wilkinson, 1997; Stewart et al., 2010). More encouraging is the positive effects of cross-department communication, although this was seen as an indirect result of the pressure to attend LTEs as opposed a success of Lean implementation *per se*. Even if this enhanced collaboration and communication was for only the duration of the LTE, it does suggest that training potentially can act as a powerful way in which culture might be changed. The success, however, would largely depend on the early involvement of the HR department in communication, empowerment and involvement - not just training – in order to successfully implement Lean (McAdam & Lafferty, 2004).

Empowerment in the terms expressed by Freidman (1997) under responsible autonomy was not present. There was little evidence of respondents experiencing greater autonomy control, and teams were often constrained (Wilkinson, 1997; Wilkinson et al., 1997). In summary this study perhaps supports the idea that empowerment is 'reconstituted' (Wilkinson, 1997) management control over some respondents, although not perhaps to the degree of Taylorism – yet!

6.3.3 Managing and Controlling the Labour Force

Lean, according to Delbridge et al. (2007) represents a system in which the capitalist labour process pushes back the frontiers of control and intensifies work by eliminating human 'waste' or 'slack'. Evidence from this study indicates that while this may be the case for some respondents, we cannot make the assumption that overall Lean has decreased autonomy, nor eliminated human waste – mainly because Lean is not fully implemented in the cases yet.

As a result of the issues identified thus far, this study shows that respondents' roles and responsibilities have changed very little, if at all. de Treville & Antonakis (2006) differentiate between 'choice autonomy' (freedom concerning work procedures and timing) 'responsibility autonomy' (accountability). This study proposes that choice autonomy has remained somewhat unchanged, whereas responsibility autonomy has increased for some respondents. Where performance controls and measures have been introduced as a result of Lean, some respondents indicated that the levels of accountability have increased as a result. However, this is not to the extent of the surveillance explored in the Literature Review, and it would appear that these performance controls are currently not managed, or controlled, in a particularly coordinated way.

LPT views management philosophies, such as Lean Thinking, and rhetoric of corporate culturalism, as an ideological assault on workers which imposes on underlying power relations in the interests of labour intensification (Sewell & Wilkinson, 1992). In addition Lean is considered by some as a form of performance control with management by fear (Harrison, 1997; Taylor et al., 2012) characterising it. Evidence in this study would both support and contradict these claims. Lean has imposed on power relations, and 'frontiers', but this has been largely resisted by respondents. Moreover, there does appear to be some control, but this is set by the parameters of management and determined by the limited scope of Lean implementation. From the perspective of respondents, however, Lean could be seen to have failed *them* indicating success for management is not the same as it is for labour.

For example, some of the professionals in this research were not coerced into implementing Lean, partly as a result of their so-called standing in their respective organisations. Giddens' (1991) ontological subjectivity, again, helps to explain this, with the evidence in this thesis indicating that the extent to which management in these particularly contexts here can control and manage workers is limited. In comparison to colleagues within the automotive manufacturing sector, the respondents in this study appear to retain (some form of) control over their own work and how it is carried out. This shows that context must be taken into account when implementing Lean, and illustrates that earl critical accounts of Lean from a LPT may need revisiting as Lean

Thinking is applied to organisational contexts that are unique (at least to implementation they can be considered unique).

This study illustrated two different reactions to labour management and control. Firstly, those who had a strong sense of self-identity work to keep a particular narrative going (Giddens, 1991) by protecting their autonomy. These individuals experienced less management control than those in administrative or service based positions. This is in contrast to Freidson (1994) who suggests that professionals experience a decline in their abilities to exercise the occupational control of work. Allsop & Mulcahy (1996) also conclude that professionals are experiencing a reduction in their autonomy and dominance, and while this may be the long term outcome of Lean, presently in the cases here this is not being realised.

Secondly, professionals used their power and existence to legitimise their resistance to Lean (discussed in the next section) to distance themselves from the concept. As Taylor & Moore (2014) point out, these respondents have successfully managed to defend the frontier of control against managerial incursions, and have not engaged to the same level as their colleagues (Waring & Bishop, 2010). Administrative and support staff appear constrained by a number of factors – for example there was involuntary participation in Lean and LTEs. Moreover, the processes that these workers dealt with were assumed by senior managers to be easier to apply Lean to, therefore they had little choice over being involved if it was in the organisations' interests (Dohse et al., 1985).

The introduction of performance controls following Lean is noted within literature (Parker & Slaughter, 1995) with Delbridge et al. (1992) concluding that the introduction of targets and visual systems under Lean enables managers to check employees more, thus monitoring their work activities. In turn this intensifies work, although evidence from this study would not necessarily support this conclusion. As most cases do not appear to be implementing Lean production 'correctly' according to Womack et al. (2009), and the Lean conceptualisation varies considerably among the cases in terms of the practices considered (Parker, 2003; Hasle et al., 2012). Only NewUni actively use performance measurements and visual management as part of their approach, therefore the same type of control as experienced in the automotive industry cannot be seen here.

While each of the cases here are examples of highly regulated environments in their own right, none of them had strict targets to the extent to which the automotive sector appear to have and this could be a reason as to why the respondents here have not experienced control to the same degree. Interestingly, not only did some academics in this study claim they played 'tick box games' (McGivern & Ferlie, 2007), some fabricated results.

With regards to social control through peer pressure, it is claimed that this can lead to a reduction in the labour force and workers having to do more with less (Graham, 1995; MacDuffie, 1995; Parker & Slaughter, 1995). This study cannot confirm or deny this, however the experiences at PharmaCo illustrate that some level of social (and informal) control may well be evident. This appears to be as a result of LM pressure and the organisational focus on behaviours as each of the LMs here strongly advocated certain sets of behaviours which themselves and their employees are required to adhere to.

Perhaps we could assume that this is because PharmaCo appear 'more Lean' in terms of the philosophy and respondent acceptance of extra work (Table 5 and Table 7) than the other cases, with an organisational context that is the most similar to that researched by the likes of Graham (1995). Therefore, while in Lean production management and control are exercised through the standardization of work processes and direct supervision (Niepce & Molleman, 1998), these appear much more difficult to achieve in the contexts here. Both management and control clearly do exist, however there is a need to go beyond the traditional LPT in order to understand it.

6.3.4 Line Managers

While it is acknowledged that the concepts of management and leadership are more mainstream, the discussion in the literature suggested that they are important to understand within a Lean context. A number of authors highlight the hybrid role that they play, from team management, performance management and workforce motivation and control (Thompson & Rehder, 1995). Evidence from this study appears to support the assumption that LMs are required to take on a number of extra roles within the Lean process, and as Hales (2005) states are subject to a number of competing pressures.

However, many of these roles are automatically assumed and not necessarily part of their job descriptions. While some literature claims that LMs provide an 'iron grip' of control over their team (Garrahan & Stewart, 1992) the type of respondents here questions this assumption. LMs in this study were as likely to resist Lean as their staff, often fuelled by a dire to distance themselves from the shadow of additional responsibility that Scarbrough (1998) discusses, along with relatively narrow spans of control that they have.

Outside pressures leading to the introduction of Lean Thinking meant many LMs have been pressured into adopting Lean. There was support for what Buroway (1979) discusses with regards to workers who, at times, consent and choose to follow management strategies if it is in their own interests and exceed the effort bargain at times. This was evidenced through the LM who was rewarded with more money for their department if they were involved in a Lean project at OldUni. A number of LMs in this study appeared to agree in principle to comply with Lean implementation when they saw such a benefit themselves.

The development of Lean leaders would potentially help diffuse Lean throughout the organisations. However this study saw little evidence of the acknowledgement, or development, of any level of Lean leadership (Emiliani & Emiliani, 2013: 409) which if we recall from the earlier literature review was defined as the "beliefs, behaviours, and competencies that demonstrate respect for people..." among the other aims of Lean, and while there was some evidence at PharmaCo of an understanding of a different 'type' of LM and leader, there was little evidence overall in this study that leaders were important in the diffusion of Lean.

6.3.5 Professional Resistance

This study revealed that professional respondents were more likely to resist Lean implementation than their colleagues, often openly admitting to doing so themselves. The research showed that, in general, active resistance can be aligned to a defiance to work (Graham, 1995) in manufacturing, whereas within the contexts here it was a form of misbehaviour (Ackroyd & Thompson, 1999): a passive version. This was driven by what the respondents believed their present role to involve, and they used this

subjectivity to legitimise their behaviour. Willmott (1997) described how professionals' political and ideological values determine their behaviour, and while we cannot generalise that all professional employees will (or do) engage in misbehaviour, it certainly seemed to be the case in this study.

To evidence this some academic respondents at NewUni reflected, openly, on their failure to work very hard or conscientiously towards Lean, with a small number claiming that they did not 'do Lean' at all. A respondent from OldUni reflected on an experience in an LTE where his group engaged in deliberate output restriction, with a number of examples cited by respondents at RDA of practical joking (Ackroyd & Thompson, 1999: 1-2). Prevalent in each instance was the desire of professions, especially academics, to jealously guard (Ezzamel et al., 2001) their autonomy and work from management. Interestingly, as Taylor & Bain (2014) conclude, managerial conflict with academics was generally avoided, despite this reluctance to participate.

There are many similarities with the research in this study, and the conclusions drawn by Giddens (1991) in that he talks of workers who retain a significant amount of discretion and distance from managerial control. This has been discussed in both Sections *6.3.1* and *6.3.3 Managing and Controlling the Labour Force*, with Giddens confirming that these individuals are likely to engage in diverse forms of 'misbehaviour' and resistance. He argues that this enables them to continue their narrative going and by preserving this, these workers can outwit and outsmart management efforts to control their work and the labour process. Interestingly, such respondents were not ashamed to admit this to the researcher and this indicates that traditional [direct] control is more difficult to achieve in these environments. This, too, could question whether Lean can apply in the form that we are used to seeing in manufacturing.

Ackroyd & Thompson (1999) themselves stress that identity is important for organisational misbehaviour, asserting that "without the formation of a distinct identity by employees, any and all other forms of misbehaviour are difficult to envisage" (p. 26). What clearly emerged from this data was a sense of specific groups and their self-identity, who passively fight the battle to retain their current situation. Lean was seen, in some cases, to devalue what professionals do, something which Willmott (2004)

identifies as a trend towards the degradation of self-identity which goes beyond the simply breaches of control and established effort-bargain between management and workers. The cases here highlighted how difficult this form of resistance is to manage, as Collinson (1992) points out, and in many cases senior managers and facilitators were unable (or perhaps unwilling) to challenge this behaviour.

Indeed, as Giddens (1984: 154) illustrates, these individuals in less regulated environments than, say, manufacturing are likely to experience more subtle methods of control through compliance. In part this may be due to the lack of embedded-ness of the Lean initiatives in each of the cases, and in part a question over the suitability of transfer. There are a number of possible reasons for this resistance. Firstly, as discussed by Thomas & Davies (2005: 700), professionals are "not passive recipients of discourses". In the cases here, senior management were keen to avoid using the term 'Lean' when selling the concept. Despite this, there was no evidence to support Thomas & Davies' (2005) assertion that professionals use their lack of understanding of concepts in order to position themselves in a way in which they can choose not to engage with initiatives. In fact, in this study, many of the professionals had vast knowledge and experience of Lean (often in other settings) yet appeared to regard it as irrelevant to their own work.

Secondly, and linked in to the previous point, is the strength of self-identity and subjectivity argument, whereby professionals had a strong vision of what their job was and were determined to continue the way that things are. This research confirms the observations of both Powers (1997) and Townley (2002) who found that professionals both continued to perform as normal, even during change, while simultaneously fighting to maintain the old logic. In turn this then creates opportunities for such workers to exploit the system. The 'ontological insecurity' (Giddens, 1991) that emerges as professionals became upset with the introduction of Lean in their respective organisations manifested itself on some of the themes identified earlier in this chapter relating to defending frontiers of control and resisting management and control. The organisational settings here, therefore, clearly question the findings apparent in manufacturing and it would be interesting to extend this research to focus on professionals solely.

More often than not demands to adopt new working techniques collided with employees' concerns to preserve the established social organisation, which was a consequence of the strength of employee identification with these established working arrangements and practices (Ezzamel et al., 2002). This was not only among long standing respondents, but specifically with those in certain roles. Lean Thinking, thus, was met with diverse forms of resistance ranging from what Ezzamel et al. (2002) term as 'outright yet covert' to a negotiation over the introduction of the new techniques. In the case of NewUni this 'negotiation' led to senior management encouraging individuals to use an approach to Lean which suited them, while still imposing targets on them. That is to say "you need to get from A to B, but you can get there however you want".

The issue of academic freedom was prevalent in NewUni and OldUni. The specific issues are the intransigence and relative autonomy of professionals (specifically academic respondents), and these are questions which require further consideration. Are academics, undertaking the task of knowledge creation and acquisition, a breed apart and for whom the 'imposition' of Lean Thinking would undermine their activities and raison d'etre? More broadly, does this apply to professionals in general? The evidence presented here suggests that the answer is yes, especially when considering respondents at PharmaCo responded more positively to the imposition of a Lean culture and generally viewed it as having the potential to add value to their activities.

The attitudes of academics in the two universities here, and to a lesser extent some respondents within RDA, and the difficulty associated with the judgement of their outputs represent the most serious challenges to implementing Lean in atypical settings such as higher education. Perhaps the issue is intractable; on the other hand, this may be a trait that is peculiar to UK academics. Evidence from North America, provided by Emiliani (2004, 2007), Comm & Mathaisel (2005, 2008) and Balzer (2010), seems to indicate a different attitude and more evidence from other parts of the world will be enlightening. The potential for cooperation or resistance within particular occupational groups adds a demanding complexity to the analysis of the relationship between HRM and Lean, and employee experience and Lean. The lack of senior management willingness to involve professionals (specifically academics) in Lean implementation is

interesting in its own right as it not only supports the basis of managed and controlled participation (Dohse et al., 1985) but also assumes that a different response and form of resistance is demonstrated by individuals who legitimately have the ability to escape management control (Willmott, 1995) and that senior managers, certainly in these cases, seem unwilling to challenge this.

6.4 Summary

This chapter interpreted and discussed the findings by linking to the literature identified in Chapter Two. There are both themes that support the current literature, and that raise questions given the specific contexts researched here. Overall it is evident that the cases here *are* implementing Lean activities although this is *not* Lean manufacturing (nor even perhaps Lean Thinking), and is undoubtedly 'fit' for the purpose of the context. While each of the cases expressed a strategic desire to implement the concept the extent to which they can be seen as being Lean is somewhat determined by a number of factors and how we look at the issue. Evidently an organisation that philosophically is 'more Lean' in how they visualise the principles, does not necessarily have high levels of acceptance towards Lean within their organisations, nor do they necessarily deliver the most traditional training.

What is clear is that while Lean activities have not yet substantially impacted on HR activities within the cases, and there is the general acknowledgement that where labour processes will be affected there is a need to involve the HR department in implementation. What emerged from this discussion that Lean is seen as not only a new form of control but also a form that relies for its success on surveillance (scrutiny and examination, ad evidenced in this study) under the guise of seemingly 'empowered' and 'engaged' employees in self-managed arrangements. It is this last point that emerges as the key issue both in the Literature Review in Chapter Two, and throughout the findings chapters. This issue was demonstrated, problematized and critiqued through the empirical findings in the contexts in which the author examines this issue. In other words, this is part of the contribution to knowledge that this thesis presents - how Lean is theorized by labour process theorists, read and received by the research subjects in this study, and what the analysis of the theorization and lived-experience of working in

a (non-manufacturing) Lean organizational setting tells us about Lean working practices that both adds to and questions existing claims within the literature.

This discussion adds an understanding of how respondents in the contexts here engage in a process of defending the frontiers of control and limits of what the respondents believe to be their jobs and role. The introduction of new forms of control give rise to the notion of 'controlled participation' within the contexts here - direct control as experienced in automotive manufacturing does not seem to be evident. Senior managers and facilitators appear to hold the balance of power, and ultimately implement the version of Lean that they believe will work for the context.

Interestingly this study has offered further contribution to the existing debate, as it indicates that professional resistance is likely to emerge in the contexts here and that management seem unable (or perhaps unwilling) to tackle it. The subjectivities of most professionals (specifically academics) in this study do not just influence the manner in which they interpret their roles, but may incline them against Lean (broadly) Moreover, these professionals possess sufficient power and autonomy to act on their inclinations and restrict the diffusion of Lean activities.

This study has allowed the author to explore the extent of Lean implementation in four non-manufacturing organisations, and to explore the experiences of workers involved in Lean. Ultimately this has shed light on some of the issues and barriers faced by non-automotive manufacturing organisations with the contexts used in this study not having previously been subject to rigorous academic debate. The final chapter concludes this study by revisiting the aims and objectives of the thesis and summarising the main findings.

Chapter Seven Conclusions

7.1 Introduction

From an orthodox perspective, Lean is a management technique that achieves better quality through efficiency and effectiveness, and by providing employees with the skills and empowerment to contribute towards this goal. However, expanding evidence from critics of Lean question this assumption by suggesting that the organization of work under Lean is a system whereby labour is materialized or objectified in use value. LPT is used to look at how people work and who controls their work. To date studies tend to focus on cases (and processes) that are transactional and tangible, with very little evidence exploring contexts which are non-automotive manufacturing or are atypical in their application of Lean. Moreover, there is little exploration of the systems of management and control, and how these are used to reduce the power of the professionals.

Thus, the aim of this thesis was to explore the broader experiences of workers under Lean in non-production settings with particular reference to LPT. Given the breadth of the initial aim, it is not surprising that a number of issues emerged from the data. This chapter summarises the findings of this study, and provides recommendations for future research. Those findings are discussed with reference to the research objectives, and the contributions to the body of knowledge are also described.

7.2 Research Objectives and Main Findings

The primary intention of this study was to gain a better understanding of how Lean travels to non-Lean environments, and how it is received by participants. This transfer has been challenged on the basis of the cases presented in this thesis. The underlying assumption is that Lean can be applied, but it is likely to be difficult and lack conceptual clarity (Hines et al., 2004).

Moreover, the presence of a high number of professionals is likely to make implementation more difficult (Ackroyd & Thompson, 1999; Willmott, 2007), indicating a different set of challenges than in manufacturing contexts. Keeping in view the nature of the research and other constraints, such as time and cost, a qualitative methodology

was used to achieve the research aim, and a labour process lens was adopted in order to facilitate an in-depth exploration of how workers experience Lean. 54 interviews were conducted and analysed using a labour process lens. The next sections will present the conclusions of the key findings according to the research objectives stated in Chapter One.

7.2.1 Exploring current thinking on the conceptualisation and utility of Lean

In response to the first objective, the literature chapter explored in detail current thinking on Lean including a discussion of how it is conceptualised both in manufacturing and non-manufacturing organisations. It is assumed that Lean can be applied anywhere (Womack et al., 1990) although it will likely need adapting for the context (Cooney, 2002). The literature indicated that most organisations outside manufacturing are likely to adopt a piecemeal approach in order to avoid the problematic aspects associated with Lean Thinking (Radnor et al., 2006; Radnor & Osborne, 2013). While this is unlikely to result in the realisation of the potential of Lean, it does imply non-manufacturing contexts are likely to engage in a version of 'Fake Lean' (Emiliani, 2013) that best 'fits' (Cooney, 2002) their setting.

This study supported he conclusions drawn above with the data implying that the conceptualisation and utility of Lean outside manufacturing (specifically the four cases here) is somewhat limited, coupled with the questions raised over how Lean can be applied to sectors that do not demonstrate characteristics of either manufacturing or transactional service.

It was revealed that the Lean how Lean is understood is shaped by the approach that organisations use. It was proposed that the organisations here were not implementing 'Real Lean' (Emiliani, 2013) and therefore cannot be considered to be 'Lean' as per the definition of Womack et al. (1990). The difficulties associated with the introduction of Lean to certain processes meant the cases here identified problems with full, strategic implementation, due to the nature of the context. While Radnor & Osborne (2013) conclude that Lean will be 'doomed' to fail if not implemented fully, this study indicates that until there is a clear understanding in organisations of what version of Lean

organisations are implementing if it difficult to presume this. There are questions to be raised over Lean Thinking both in terms of a set of managerial practices and as a theory.

The concept itself requires more research, which is why the author believes that this study provides an important contribution to existing research. The author here presents evidence of the conceptualisation and utility of Lean in four new contexts that are atypical in their application of Lean. Despite Lean activities being implemented, it was evident that these were chosen on the basis of the perceived 'fit' with the context and that not all processes (or parts of the organisation) were seen as being able to be 'Leanned'. Further analysis of the four cases indicated that the use of Lean changes according to what perspective we view this from. Differences were observed by respondents in the utility of Lean in four main areas: (1) how Lean was seen from a philosophical view; (2) the processes and sets of events which occur; (3) acceptance of Lean Thinking among the workforce; and (4) Lean training activity.

Evidence from respondents indicates that according to each of these ideas, the four cases appeared to be using Lean in different ways and therefore indicated different degrees of Leanness. While the author acknowledges that this is not based on quantitative measures, and is somewhat subjective it its design, it is useful in demonstrating that it is too simplistic to state that organisations 'are Lean' or 'are not Lean' as a result of diverse versions that are travelling to non-automotive manufacturing settings. Thus, we can develop a proposition based on these findings:

Proposition 1: The adoption of Lean Thinking in non-manufacturing organisations is unlikely to succeed until greater conceptual clarity is attained and more account taken of particular situation/context.

7.2.2 Exploring what Lean initiatives are being applied in non-automotive manufacturing

The findings from this study have a good deal in common with mainstream Lean researchers, such as Hines & Lethbridge (2008) and Radnor & Bucci (2011), although, arguably, they paint a less optimistic picture for the application of Lean in non-manufacturing contexts. This study indicates that, according to the perceptions of

respondents, the Lean philosophy is not implemented adequately and holistically in their organisations. While each of the four cases here appear to implement *some* aspects of Lean Thinking and use the terminology, how the implement it might not be considered either 'Real Lean' or full implementation.

The aspects that the cases are using appear similar to what is described by Emiliani (2013) as 'Fake Lean', and acknowledged by Radnor & Osborne (2013) as being the most common approach outside automotive manufacturing. Most importantly, the primary way in which Lean is being implemented in each of the cases here is through training – specifically Lean training events (LTEs). These are focused on pre-determined processes (by senior managers and sponsors) that are transactional in their nature, indicating an aspect of controlled participation (Dohse et al., 1985), as senior managers and facilitators often determined the remit (and involvement) of the training according to the interests of the organisation. Areas, processes and often employees are chosen to participate according to how easy the senior managers making the decision believe they will receive Lean. There is little evidence of strategic, organisation wide initiatives being implemented.

There appears a lack of focus on some of the fundamental aspects of Lean implementation in each of the four cases. While literature indicates that organisations vary their implementation on the basis of management hierarchies, number of departments, level of specialisation of skills, functions, formalisation, centralisation and bureaucracy (Daft, 1995) there was a lack of top management commitment, involvement of employees, training and development of employees and continuous improvement experienced by respondents here. This study proposes that the approach taken is determined by the breadth and depth of Lean activities across the organisation. The fact that none of the four cases have extensively applied Lean, so far, could explain why this study has not identified some of the negative issues found by researchers within the LPT tradition such as Carter et al. (2012) and their research in HMRC – at least not to date!

The prognosis for the role of HR professionals in the delivery of Lean is also somewhat negative. Nevertheless, while acknowledging and taking into consideration researchers

such as Carter et al. (2011, 2012a), it is perhaps still too early to judge with any conviction the efficacy of Lean Thinking in sectors new to the initiative and who demonstrate unusual organisation settings which may prevent the application of Lean. In particular this study illustrates that a wide range of practices are considered (Parker, 2003; Hasle et al., 2012), and presents new insights into how these cases have taken the ideas of Lean production and adapted them to suit the needs of their context.

It is also evident that in the cases here there is an absence of clarity when it comes to a shared understanding of what Lean Thinking is, understanding what parts of the organisation it is appropriate to apply it to. Additionally to this is establishing the most effective mechanisms through which to embed it. The heterogeneity of organisations means that it is unlikely that a definitive notion of Lean will apply across the board – Womack et al.'s (1990) claims of universality are idealistic – and adaptations to models will have to be made given different inputs, outputs and environments. Consequently, a proposition can be suggested that infers Lean Thinking within specific contexts is likely to take the form of managed, individual, training events as a result of the difficulties perceived by senior management and sponsors with strategic system-wide initiatives.

Proposition 2: Non-automotive manufacturing organisations are more likely to implement Lean through pockets of individual training initiatives, than system wide activities.

7.2.3 Investigating how organisations are implementing Lean activities, by utilizing core LPT concepts (management control, the frontier of control, managed participation, self-identity)

The third objective was to identify how organisations are implementing Lean now that we know what versions of Lean they are applying. This thesis was informed by LPT, and the researcher chose to explore some of the core concepts associated with the lens such as management control, the frontier of control, managed participation and self-identity.

What appears to be largely a result of a lack of holistic approach to implementation, Lean Thinking in the four cases here appears to be somewhat restricted to fragmented training events and processes. The organisation of work appears to be somewhat

different to what it looks like in automotive; traditional theory argued that new forms of work organisation (such as Lean) shift control towards management and that employees are unable to resist the effects. However, while there is partial support for management encroaching frontiers, this has not always been successful in the cases here.

Firstly it was obvious that management control under Lean did change, however this did not necessarily result in more *direct* control. What this thesis illustrated was that control under Lean, here, is different and is mediated by a number of factors such as the type of worker and the approach to Lean. As Lean in the cases here was not fully implemented, and arguably managed participation was evidence, control was realised in a different way. For example, respondents talked of a lack of opportunities to be involved in some Lean activities, a lack of ability to choose the content and design of LTEs and a lack of skills delivered during Lean implementation.

While these can be seen as forms of control (Wilkinson & Oliver, 1989; Sewell & Wilkinson, 1992; Delbridge et al., 1992; Delbridge), they are not the same as what we see under the early work and organisation literature. There was little evidence here of work intensification, and while performance targets were (in some instances) introduced the lack of holistic approach to implementation often mediated any control these may have. Managerial control was more likely to be applied when there were direct financial implications associated with achieving processes more Lean.

Secondly, in the cases here the frontier of control was jealously guarded by respondents, especially in relation to professionals who interpreted their assigned roles in a way which did not include Lean activities. While Lean can be seen as an attempt to release more labour power (Edwards & Scullion, 1982: 151) and a sustained management offensive to push forward the frontier of control (Taylor & Bain, 2001) by shifting the balance of power towards management, this did not necessarily materialise in the cases here. In the case of professionals, senior management and facilitators appeared unable (or perhaps unwilling) to change the balance of power, and simultaneously professionals themselves strongly defended their positions and (inferred) rights not to engage with Lean. The potential for 'misbehaviour' was also apparent.

The result implied that the cases here are implementing Lean activities by engaging in controlled participation, based on Dohse et al.'s (1985) 'managed participation'. By choosing to term this 'controlled participation' it implies that, while it is different from the traditional LPT perspective of control, Lean is a new form of both 'control' and 'empowerment'. Lean redefines the 'rules' and seemingly provides management with the upper hand by advocating both control and autonomy through the guise of empowerment, and within the remits set by management. Importantly here, control is different in non-automotive manufacturing industries and the respondents in these cases appear more able and willing to resist than in traditional manufacturing settings, although this is through different means (as evidenced through Worthington & Hodgson, 2005).

Fourthly, many of these issues are underpinned by subjectivities – specifically professionals' subjectivities. The professionals in this study enjoyed special privileges and were in a position whereby they were less likely to experience the effects of Lean. Used to a certain level of autonomy and control, they often used this to legitimise attempts by management to introduce Lean. Challeneges to frontiers were seen as a threat to their identity and 'ontological insecurity' (borrowing Giddens' (1991) term) was an outcome. This resulted in feelings of unease, fear and emotional dissonance (Jansz & Timmers, 2002), displayed through resistance and denial to participate. This research offers a contribution to existing studies which have, to date, mainly been conducted in organisations that have tangible and transactional services and processes, and are not characterised by the existence of professionals. It was also concluded that managerial conflict with professionals, especially academics, was generally avoided based on what has just been discussed.

Overall, Lean activities in each of the cases were restricted to service based processes where senior managers and facilitators could gain easy 'quick wins': the more complex processes were not subject to Lean activity (Radnor & Osborne, 2013). In all of the cases there was a distinct lack of involvement of the HR function, which meant some of the crucial aspects linked to respect for people and continuous improvement were missing (Emiliani, 2012). It also meant that many individuals did not perceive Lean as being a part of their role. There would seem to be obvious overtones of the distinction between

'soft' and 'hard' HRM in the evidence presented in this thesis, and it may be appropriate for future research to focus more directly on the suitability of Lean Thinking to the principles and practice of soft HRM and also to explore the ways in which a soft Lean or HR rhetoric may be used to facilitate hard Lean or HR outcomes.

This study also indicates that there is a lack of top management commitment and support, which is considered a serious issue during the implementation of Lean Thinking. A number of studies (such as Soltani & Wilkinson, 2010; Beer, 2003 and Harari, 1993) argue that top management plays a pivotal role in the implementation of performance improvement initiatives and how organisations implement Lean Thinking. However, in the cases here leadership was not considered important, indicating that line managers were often subject to a number of internal and external pressures, including from senior management and Lean facilitators, which resulted in an unconstructive management style experienced by some workers.

There would seem to be obvious overtones of the distinction between 'soft' and 'hard' HRM in the evidence presented. It may be appropriate for future research to focus more directly on the suitability of Lean Thinking to the principles, and practice of 'soft' HRM. This is in addition to the ways in which a 'soft' Lean rhetoric may be used to facilitate 'hard' Lean outcomes. Concerns about the use of soft rhetoric to promote human resource techniques, such as performance management, employee involvement and employment flexibility as democratising interventions, while being used to affect hard consequences (such as work intensification, tightened managerial control and redundancy) apply equally to the rhetoric forming behind Lean Thinking. Therefore the author proposes that such evident parallels are explored where HRM meets Lean.

Proposition 3: More attention should be paid, regarding theory and practice, to the related rhetoric of Lean and human resource processes, techniques and outcomes when implementing Lean.

7.2.4 Establishing a detailed understanding of the experiences of those involved in Lean implementation

The final objective was to establish a detailed understanding the experiences of those involved in Lean implementation, and the research method used for the thesis has helped to achieve this. This study indicates that the experiences of worker was mixed, determined by the role the respondent played in the Lean process and their experience of process improvement. Generally most had experienced very few new ways of working (in contrast to Radnor et al., 2006) and the impact of Lean is less pronounced than that of Lean production.

The early part of the Literature Review dealt with the aims and nature of different forms of management control, perspectives on the 'struggle' for control, how and why this is mediated by forms of production and production technologies, as well as competing interests; that is, how and why control is a 'contested terrain'. The introduction of Lean ways of working has been seen as not only a new form of control but also a form that relies for its success on surveillance – under the guise of 'empowerment'. This study offers a further contribution to this debate, and suggests that while there was (some, albeit superficial) evidence of changes to workload and roles such as the requirements to attend LTEs, some newly imposed measures and more work to attend LTEs, there was in fact little evidence to show that Lean has significantly altered the way that employees perform their jobs. A clear divide was found in the experiences of those who could see the reasoning for process improvement, mostly on the administrative side versus those who could not, mostly the policy setters and academics.

As a result, the approach to Lean in the cases studied for this thesis is very different to that under Lean production, thus the experiences of those interviewed was very different. This could, again, be explained by the approach to Lean the cases are taking: all are still in the experimentation phase and have yet to embed the initiative in their culture. As a result it could be therefore argued that the organisations here are *thinking* about Lean and engaging in some form of *business process reengineering* in order to realise that aim.

Despite the potential gains from the application of Lean Thinking here, the experiences of those involved in its application indicates that Lean cannot be viewed by senior managers as a panacea for operational issues. Without investment in the development and training of those involved, as well as a move away from managed participation, an integrated system is unlikely (Crute et al., 2009). More importantly tools and techniques (specifically to the needs of the business), the needs of the process and the type of employee must first be developed (Pavnaskar et al., 2003; Radnor & Osborne, 2013).

In terms of control, this thesis showed how and why Lean re-shapes the struggles for control and autonomy in new organisational settings, and from the data we saw that Lean redefines the 'rules' of engagement and seemingly provides management with the upper hand in a managed and controlled way (Dohse et al., 1985). This, however, is not the same as within manufacturing (Worthington & Hodgson, 2005). Lean is also, apparently, easy to resist by some of those involved. Interestingly this is not being challenged by management in the cases here, although time will tell whether these changes – perhaps professionals will be subject to similar direct controls as their colleagues in the future. This would be an interesting extension to this thesis.

Contributing new evidence, this study indicates that workers who have a strong professional sense of self-identity will likely resist Lean implementation more than their administrative and support colleagues. Those holding the latter roles rarely deviate from the formal labour process, especially if this behaviour benefits the organisation or their department. While professionals reflected on their resistance, this manifested itself more in terms of what Ackroyd & Thompson (1999) refer to as 'organisational misbehaviour' and was passive in its nature. Such respondents deliberately misbehaved by failing to conscientiously implement Lean, deliberately restricting Lean output and practical joking. These professionals often possessed sufficient power and autonomy to act on inclinations against aspects of their work that included Lean, to the extent that their recalcitrance was a factor in senior management not being prepared to holistically implement Lean (Willmott, 2007; Taylor & Moore, 2014). Curiously this was met by senior managers who were unwilling to challenge this narrative and status quo.

These issues will not be unique to the contexts here; the intransigence/relative autonomy of certain employees (in this case UK academics specifically) appears to prove problematic for Lean implementation and posits questions for further consideration: Are professionals, undertaking the task of knowledge creation and acquisition, a breed apart and for whom the 'imposition' of Lean Thinking would undermine their activities and raison d'etre? The evidence presented here suggests that the answer is "*yes*".

Ultimately it may not be possible to directly transfer Lean Thinking to industries outside the one in which it was originally developed until a greater understanding of the concept is gained. The attitudes of professionals in this research, and the difficulty associated with the judgement of their outputs, represent the most serious challenges to implementing Lean in professional industries; perhaps the issue is intractable. On the other hand, this may be a trait that is peculiar to the four cases here. At present Lean outside the automotive sector exists in theory, however it will take time to be implemented at both an organisational and an individual level within the sectors researched for this thesis and the likelihood is that it will be different from the structures seen in manufacturing. Therefore, the challenges to Lean implementation lie not in the theory, or whether it is transferrable, but in how it is applied, managed and experienced by workers (Radnor & Osborne, 2013). The potential for cooperation or resistance within particular occupational groups adds a demanding complexity to the analysis of the relationship between HRM, Lean and the labour process. The final proposition reflects the evidence that professional occupations, in particular, are likely to resist Lean implementation.

Proposition 4: Strength of self-identity is inversely related to the willingness to engage positively with Lean Thinking.

7.2 Final Conclusions

While the reflections of respondents in these four case studies is somewhat different from existing research on worker experiences, and indeed of research conducted from a

LPT perspective more generally, there is not enough evidence from this study (either in the respective sectors, or the wider domain) to begin to generalise about the suitability of Lean in such contexts. There appears to be even less understanding of the impact of Lean across international boundaries and cultures, so given the increasing popularity of Lean and the claims being made on its behalf, the work to establish its legitimacy has barely begun. Similarly, consideration of the organisational HR function in the development and implementation of Lean initiatives across all economic sectors needs urgent attention, not least from the HR profession itself.

The aim of this thesis was to explore the broader experiences of workers in non-manufacturing organisational contexts of the application of Lean, from a LPT perspective. Using a qualitative case study approach, informed by a labour process lens, the findings conclude that the issues these cases face are very different to what is faced by automotive manufacturers. The way in which Lean has been operationalised in manufacturing and non-manufacturing organisational settings is very different, although it is too early to assume that the ultimate aims of Lean are not realisable outside automotive. There are also important contributions that this thesis makes in terms of how Lean has been perceived (from a LPT perspective) and how Lean can be considered going forward.

While the general consensus in this thesis appears to be that workers are not subject to the same controls or work intensification as early LPT researchers indicate, this appeared to be mediated by the unique nature (and unchallenged autonomy) of the professional respondents here. While there was evidence of control, this was in a different form to what we have been used to reading about: the term 'controlled participation' is useful here to illustrate the point. Senior managers and facilitators managed Lean i.e. the remit of the philosophy, the goals, the activities involved in Lean Thinking, the processes as well as who was involved. This seemed to be driven by organisational interest, and a conscious attempt to avoid conflict with certain members of staff.

Overall this thesis has highlighted that existing research, which has focused on sectors new to Lean (such as the public sector) is not generalizable. This study demonstrates

that Lean can be applied to non-traditional organisational settings, and the cases here were atypical in their application of Lean from a LPT perspective. The four organisations used in this research have previously not been subject to academic debate with regards to Lean implementation, and the very fact that Lean is being applied (in whatever form) is proof that Lean production *is* transferrable.

However, this thesis concludes that there is a lack of clarity and understanding in terms of what Lean is understood to be within these contexts, and how the employees are effected. This is proliferated by the fact that Lean was defined very differently by people that have been involved, and their role in the Lean process somewhat determined their experiences and perceptions of the initiative. Despite Lean-type approaches to process improvement having been implemented for more than a decade in non-automotive and non-manufacturing contexts, its application in the contexts here appears a novel approach.

7.3 Contributions to Knowledge

This thesis contributes to existing studies which focus on the experiences of workers in Lean environments. This study adds into the body of Lean knowledge by providing new empirical evidence, from four organisations that are atypical in their application of Lean Thinking. The cases offer an insight as to what Lean looks like in professional industries, and shows that Lean can be (and is) resisted by workers. It was identified in Chapter Two that a number of questions are raised in the literature with regards to how Lean has been perceived from a LPT perspective. This study has researched some of those questions, thus the salient contributions of this thesis to the existing body of knowledge are as follows:

- This study has provided empirical evidence that conceptualising Lean is difficult, and that while it is one of the world's most well-known performance improvement methodologies, until there is a clear understanding of how Lean Thinking applies to industries that are characterised by intangible, non-standard and non-service based processes and transactions, then these difficulties are likely to remain.

- This study provides new empirical evidence from cases that contain a number of professionals, and which are characterised by individuals who possess a sufficient amount of power and autonomy to resist Lean activities. More interestingly, in contrast to existing studies, this thesis shows that senior managers are often unwilling to challenge this resistance.
- This study has empirically contributed to the deterministic perspective on Lean, and the literature informed by a LPT lens by offering an alternative conclusion. The way in which Lean was operationalised in the cases here indicated that the form of control was different to what early readings from a LPT conclude.
- This study provided the opportunity for respondents to evaluate and reflect on their experiences of Lean to date, and demonstrates the importance of using a methodology which allows researchers to gain an in-depth understanding and exploration of employee experiences.

Overall, this thesis offers a contribution to how Lean travels from automotive manufacturing to non-Lean environments, and how it is received by those involved. The traditional LPT research on worker experiences of Lean is challenged, based on the four cases used here, and early work from this lens is opened up to critique by offering a contribution to this deterministic perspective of 'Lean and mean'.

7.4 Limitations and Suggestions for Future Research

As with all research this thesis has a number of limitations, which open the door for further research. This study uses four case studies that are all relatively new to Lean implementation: while it was the aim of the author to identify cases which had not yet been subject to academic debate, this meant that none of the cases had embedded Lean. Moreover, the very fact that they did not all use the term *'Lean'* indicates that this study is probably best described as an investigation into *'Lean-like'* methodologies. Many limitations are acknowledged in the design, planning and execution of this research, and these need to be considered when interpreting the results of this study. The major limitations of this study, along with recommendations for future research are as follows.

Firstly, the design of research was cross-sectional in nature and included a mix of public and private sector cases. The researcher was unable to collect longitudinal data due to

constraints like time, cost etc therefore this dataset does not enable a true evaluation of the implementation of Lean and its effect on workers. It is a snapshot at the time. Many researchers in Lean refer to a *'Lean journey'* therefore it would be useful in the future to concentrate on longitudinal data in order to evaluate how workers experience Lean over a period of time.

Secondly, the data for this thesis was collected in early 2009 - seven years ago. Since then the organisations may have undergone changes: for example RDA has closed down, Lean within Higher Education is certainly much more developed, as a result of communities of practices and knowledge sharing within the network. Therefore, an updated study would be recommended to investigate the changes over the time, on a longitudinal basis.

Thirdly, the data collected was only based on the perception of the respondents. While documentary data was collected, in real terms this was somewhat limited as it was only used to inform the context and to help provide an understanding of what the organisation wanted out of Lean. Thus, in future studies, secondary data from a wider range of organisational sources might be useful along with the perceptual data to obtain a true picture of organisational performance.

Fourthly, a number of studies which take a labour process lens widen their methods of data collection to include focus groups and observation. Due to time and cost constraints the researcher was unable to use this approach within this thesis, however it would be interesting in the future to incorporate some sort of focus group in the data collection: perhaps consisting of members of a Lean training event to capture their thought pre-training and post training. Additionally observing participants during LTEs might provide a rich source of data.

Fifthly, in this study the respondents were individuals who have been involved in Lean activities to some extent, however to minimise bias in the responses in future studies the data needs to be collected from multiple sources including individuals who have not yet been involved in any type of activity. This would perhaps be a suitable second phase to this research.

Finally, an in-depth study within Higher Education institutions would be a useful contribution to the literature, which is rather patchy on Lean implementation to date. Little academic research has been conducted, and since the research for this thesis started, over twenty UK Higher Education establishments are now adopting and implementing their version of Lean. Thus, a sector specific in-depth case study analysis would be a useful contribution to the academic debate.

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Appendix 1 Invitation to participate in Research

Emma Thirkell
Doctoral Research Student
5.21 Ridley Building
Newcastle University Business School
Newcastle upon Tyne
NE1 7RU

To whom it may concern,

I am a doctoral research student at Newcastle University Business School, and am currently looking at potential case study companies as part of a current research project. The research is concentrated around the concept of "lean" and how transferrable the philosophy is to non-automotive sectors, specifically looking at the human resource issues.

Working under the direction of Professor Stephen Proctor (Alcan Chair of Management, Director of Research) and Newcastle University Business School and Dr Tracy Scurry, we are looking for companies which would be willing to participate in this research.
The aim of the research is to investigate human resource (HR) elements associated with lean implementation, in order to gain an understanding of how the principles are transferable. I am generally interested, therefore, in understanding the methodology used to improve your working environment, and processes of interventions. There will be no measurements made, nor comment on how successful (or not) Lean implementation has been as this is an entirely qualitative study.

In compensation for allowing us to research your company, I would like to offer you a report on our findings. Newcastle University Business School prides itself on working closely with local, national and international businesses to create cutting edge research, industry and management practice and therefore, we feel you could potentially benefit from participation in the research process. If you do agree to participate in the research, there is the option to retain anonymity. Similarly, any interviews and all information will be confidential.

If you are interested in principle in participating in this research, would like any further information or have any questions, then please do not hesitate to contact me either on the address above, or at e.thirkell@ncl.ac.uk.

Yours faithfully

Emma Thirkell

Appendix 2 Research Project Information Sheet

Name of Researcher: Emma Thirkell – PhD Student, University of Newcastle
Title of Project: Transferring Lean

What is the purpose of the study?
To develop a better understanding of how Lean is transferred, how it is managed, how it has affected your job role and responsibilities and what you perceive your role in the change process specifically to be.

Why have I been chosen to take part?
Because of your involvement in your organisation in Lean activities.

Do I have to give consent to take part?
Yes, you will be required to sign an informed consent form which you will be required to keep one copy, and the second copy will stay with me.

Will my participation be kept confidential?
Yes. Transcripts or recordings will be neither published nor passed on. Moreover, the interview transcript will only be cited anonymously to protect your identity (e.g. 001, 002 etc). You may loosely be referred to as 'senior manager', 'line manager' or 'staff' also.

What will happen to the results of the study?
The interview results will be used for my PhD thesis on Transferring Lean and may potentially be presented at academic conferences and in publications. A report of findings will be given to your organisation and will be available at the end of the research process electronically for you to see, if you so wish.

Who has reviewed the study?
The interview questions and research proposal have been reviewed by my academic supervisors.

What if I change my mind, can I withdraw from the research?
Of course you can. If at any point during the research process you wish to withdraw your participation then please just send me an email at the contact details below. If we have already conducted your interview the data will be destroyed.

You can contact either me at any point or to ask any more questions, please find the contact details below.

Thank you for taking time to read this information.

Contact Details of Researcher:
Emma Thirkell - ethirkell@ncl.ac.uk, 5.21 Ridley Building, Newcastle Upon Tyne, NE1 7RU

Appendix 3 Summary of Approaches to Lean in the Case Organisations

Case pseudonym	Scope of project	Initiative introduced	Name	Training approach	Tools and techniques	Facilitation mechanisms	Involvement of HR function
OldUni	Administrative processes university wide	2007	Lean University	5 day Blitz events based on individual projects facilitated by internal Change Consultants	RIEs Process mapping Value stream mapping Nominal grouping techniques Competency frameworks	Dedicated central Lean Team leading and running the project. External consultancy employed initially.	HR personnel receive training when *Lean* applied to HR processes such as payroll and leave management. No involvement in implementation.
NewUni	All processes within one academic school	2009	Lean Operating System	Intensive courses and emersion days based at Lean Learning Academy facilitated by automotive leaders.	A3s Visual management Value stream mapping Root cause analysis Fishbone diagrams	Project led by Dean of School. Executive Team oversees projects with budget allocation, which is additional to existing resources (academic and support staff). External academic acts as consultant.	No HR involvement in implementation or HR systems affected although Executive Team did anticipate HR involvement if HR procedures were to become targets of *Lean* initiative.
RDA	Organisation wide	2005	Continuous Improvement	Process Improvement Events 1-3 days delivered both in house and by consultants	A3s Visual management Value stream mapping Fishbone diagrams Coaching Mentoring	Led by Organisational Development Manager with the help of external consultants to facilitate on specific skills.	HR lead and facilitate Lean along with the OD department. Full involvement in Lean training but little involvement in every day implementation.
PharmaCo	Organisation wide	2009	Culture Change	Continuous Improvement Teams set up for 5 days	A3s Visual management Value stream mapping Root cause analysis Fishbone diagrams	Continuous Improvement Teams facilitate themselves, supported by the HR department	HR fully lead and are involved with Lean applied to HR processes firstly, then extended to operational processes.

Appendix 4 Interview Schedule

- ✓ Consent form and aims of research/why interviewing
- ✓ Open – invite the interviewee to briefly describe their job and role.

Theme	Main Questions	Pick Ups
PART 1 **DESCRIPTIVE INFO**	1. What would you define "Lean" within the context of HE, and your own personal understanding, as being? 2. Has your department chosen to implement the Lean philosophy?	o Description of processes of Lean intervention within their own context o What factors are motivating your department to pursue continuous improvement? o Vision? Original aim? o How many processes have been involved? How well are these integrated within the wider context? o When were they carried out? Who was involved? o Who is your customer? What are their requirements? o How has Lean effected customer interaction? o Which tools and techniques have been used? o What training has been carried out? o What Lean projects have you personally been involved in?
PART 2 **CONTEXT AND PERCEPTIONS**	1. What is your understanding of the aims of the Lean across [department name]? 2. How important is the role of senior leadership (SL) in the process? 3. Does the definition of Lean within your department differ from your personal understanding/university understanding of the concept? 4. From your own perception, has there been a cultural shift since Lean implementation? 5. How important is quality within your department?	o How has Lean been communicated to you? o Has the Lean team provided you with the relevant support? o When your department decided to embrace Lean processes, what were your initial thoughts? How has this changed? o What should be the embedded characteristics of Lean? o strategic alignment? o Top down approach? o how measured? How defined? o wastes?
PART 3	1. What has your involvement been with Lean? - How has Lean been communicated to the workforce at the beginning and during the implementation? 2. What would you describe as the impact/ outcome of each initiative (both quantitatively and qualitatively)? - What outputs and how are the outputs and outcomes being	***Pick-ups*** o Communication strategy- types, how, frequency? o Quality increased, performance/productivity increased, throughput increased o Qualitative aspects – do they enjoy their job more, get recognition, more motivated? o 'Value work' recognized – aligned capacity and resources to customer

IMPLEMENTATION AND IMPACT OF LEAN	measured? 3. Have some elements been more successful than others? - If so, what and why? 4. Have there been any particular problems or issues with the initiatives? - If so, what and why? - How have or are issues being resolved? - Have particular groups of staff been more responsive/ engaged than others to the initiatives? Who and why? 5. Would you say that you are doing anything differently within your job as a consequence of Lean? If so, what? 6. Impact on students of implementation? Impact on Institution?	needs o Standardization o customer view, process view and development, waste o Barriers to implementation (cultural, lack of understanding, lack of training, managerial commitment)?
PART 4 **ORGANIZATIONAL READINESS AND ABILITY**	1. Would you say the perception or understanding of 'process' has changed? If so, how? 2. How would you describe teamworking in your department? 3. Are staff (at all levels) now more willing and able to suggest changes and improvements? -	o Are there any differences between the Lean and non-Lean processes? If so, what? o How is the performance of teams measured? Has this changed for the Lean processes? Good or bad? Why? o How is the performance of teams measured? Has this changed for the Lean processes? Good or bad? Why? o Are the problems/ issues made visible?
PART 5 **IMPACT ON HUMAN RESOURCE MANAGEMENT**	1. What policies or practices are there in place to encourage continuous improvement? 2. What policies or practices are there in place to free staff time and resources? 3. Have there been any recent changes to HRM practices in the light of LEAN? – how supportive has the HR department been in implementation – is there a holistic approach to Lean implementation? (Martin & Arokiam)	***Pick-ups*** o Developing an improvement/ problem solving culture, customer focus, performance focus, teamwork, reduction of 'waste' o Previous improvement projects and initiatives From Lit o Panizollo o multifunctional workers (relates to St Andrews website) o expansion of autonomy and responsibility o few levels of management o worker involvement in continuous improvement quality programmes o work time flexibility (mission of lean @ St Andrews) o team decision making

		○ worker training (LDP – Martin & Arokiam) ○ innovative performance appraisal
Critical incident technique	1. I'd like you to think of a situation when a LEAN process was about to be implemented which affected your job. Can you explain what the process was, your personal feelings and how you dealt with the situation. Looking back, do you perceive that situation the same today as you did at the time? 2. Can you think of a situation where Lean has not been implemented, but that you think it should be in order to help you carry out your job? 3. Can you think of an event which you think you could not carry out the job without Lean?	Final Question – Lean is well known to work well in manufacturing industries. What would you suggest are the top 3 reasons why Lean works within this organisation?

Appendix 5 Interview Coding and Characteristics

The full details of the participants are shown in the tables below. I conducted 54 interviews with the majority in person, across different units. The codes and main characteristics, including job title, are present by case below.

OldUni

Job Title	Code
Lean Consultant	001
Library Cataloguer	002
Finance Operations Manager	003
Head of Students Union	004
Vice Principal	005
Administrator	006
Administrator	007
Payroll & Pensions Manager	008
Head of Registry	009
Senior Registry Assistant	010
Web Manager	011
Head of School (academic)	012
Director of Registry	013
Director of Library Services	014
Finance Director	015
Residential and Business Services manager	016
Conference Manager	017
Lean Consultant	018
School Administrator	019
Estates Manager	020
Head of Business Improvements	021
Lean Consultant	022

NewUni

Job Title	Code
Dean of School	023
Head of Commerical Activities	024
Head of Human Resource Management	025
Head of Information Management & Systems	026
Subject Administration Team Leader	027
Head of Strategic Management & International Business	028
Acting Head of Economics	029
Head of International Relations and External Affairs	030
Associate Dean	031
Senior Lecturer, Marketing Retail & Operations	032
Head of Accounting & Finance	033
Head of Marketing Retail & Operations	034

RDA

Job Title	Code
Organisational Development Senior Specialist	035
Organisation Development Manager	036
Project Handling Snr Specialist	037
Organisation Development Snr Specialist	038
Junior HR Business Partner	039
Business Systems & Management Information Specialist Adviser	040
Innovation and Business Development Manager - Energy	041
Assistant Management Accounting Manager	042
Senior Management Accountant - Value & Innovation	043
Head of Legal Services & Procurement	044
Head of Finance	045
Manufacturing & Productivity Manager	046

PharmaCo

Job Title	Code
Visual Management Controller	047
Manager	048
HR Manager	049
Team Leader	050
Production Manager	051
Production Manager	052
HR Manager	053
Human Resource Director	054

Appendix 6 Interview Consent Form

I am a student at Newcastle University, and I am conducting interviews for my Doctoral Research Project (PhD). I am studying the transferability of LEAN, and the implications of this on individuals and their working environment. During this study, you will be asked to answer some questions about LEAN. This interview was designed to be approximately one hour in length. Please feel free to expand on topics or talk about related ideas. Also, if there are any questions you would rather not answer or that you do not feel comfortable answering, please say so and we will stop the interview or move on to the next question, whichever you prefer.

All the information will be kept confidential. Your responses will be kept anonymous and your name will not be cited. You reserve the right to withdraw from participation in this research at any point. Interviews will be recorded, for my purposes only and will be destroyed upon completion of the project. If you prefer not to be recorded, then please say so before the start of the interview.

Participant's Agreement:

I am aware that my participation in this interview is voluntary. I understand the intent and purpose of this research. If, for any reason, at any time, I wish to stop the interview, I may do so without having to give an explanation.

The researcher has reviewed the individual and social benefits and risks of this project with me. I am aware the data will be used in a PhD Thesis that will be publicly available; however my identification will remain anonymous. I have the right to review, comment on, and/or withdraw information prior to the Thesis submission. The data gathered in this study are confidential with respect to my personal identity unless I specify otherwise.

I understand if I say anything that I believe may incriminate myself, the interviewer will immediately rewind the tape and record over the potentially incriminating information. The interviewer will then ask me if I would like to continue the interview.

If I have any questions about this study, I am free to contact the student researcher (contact details below).

I have been offered a copy of this consent form that I may keep for my own reference.

I have read the above form and, with the understanding that I can withdraw at any time and for whatever reason, I consent to participate in today's interview.

_____ _____

Participant's signature Date

_____

Interviewer's signature

Name

Job Title

Group/ Department

Years of Service

Career Background

Public Sector	**Private Sector**	**HE**	**Other** ***(Please State)***

Previous Employment ***(if applicable)***

Interviewed by

	Interview Number:

You may decline to participate in this study. You may end your participation in this study at any time. Maintaining your anonymity is a priority and every practical precaution will be taken to disguise your identity. There will not be any identifying information on audiotapes or transcripts of this interview. I will not allow anyone other than the research advisor to hear any audiotape of your voice or review a transcript of this interview. All materials generated from your interview (e.g., audiotapes and transcripts) will remain in my direct physical possession.

Appendix 7 Overview of Documental Evidence

Case	Document Type	Document Title/Description	Availability	Pages
OldUni	Poster	Key enablers and barriers in the Universities Lean	Public	1
	Report	Lean Project Progress Report 2006-2008	Internal	17
	Report	Lean Project Progress Report 2009	Internal	10
	Report	Lean Project Progress Report 2010	Internal	4
	Presentation	Lean Project Progress Report 2010	Public	15
	Website	Official website of Lean initiative	Public	--
	Presentation	Financial Managers in the Public Sector and Lean	Public	10
	Presentation	The five day Lean event	Public	24
	Presentation	Lean, BPR and similar tools	Public	13
	Presentation	Project status (in 2009)	Public	16
	Presentation	Universities and the Financial Crisis	Public	9
	Brochure	Pocket Guide: Becoming Lean	Public	28
	Report	Strategic Plan	Public	10
	Feedback Sheets	Lean Project Feedback sheets	Internal	98
	Presentation	Integrating Lean into Higher Education (transcript)	Public	1
NewUni	Poster	School Deployment Actions	Internal	2
	Presentation	Experiences from Applying Lean	Public	9
	Poster	Lean a3 – Traffic Light System	Internal	4
	Poster	Blue Sky Vision 2009-2013	Public	1
	Poster	A3 ScoreCard	Internal	1
	Poster	School Deployment Actions – Status Master	Internal	1
	Website	Lean Learning Academy	Public	--
RDA	Report	Continuous Improvement Strategy Action Plan 2008-2013	Public	7
	Report	Organisation Development Structure Phase 2	Public	4
	Poster	Key Results	Public	1
	Memo	Lean Training event invitation to participate	Internal	1
	Memo	Lean training event	Internal	1
	Memo	Compilation of project feedback sheets	Internal	10
	Report	CI for Managers course – Confidential report and recommendations on training delivery	Internal	8
	Website	Company Continuous Improvement Website	Public	--
	Matrix	Continuous Improvement Action Plan	Public	3
PharmaCo	Website	Company Website	Public	--
	Meeting	Minutes of the Chemicals and Pharmaceutical Advisory Board	Public	5
	Website	Company information and overview	Public	1

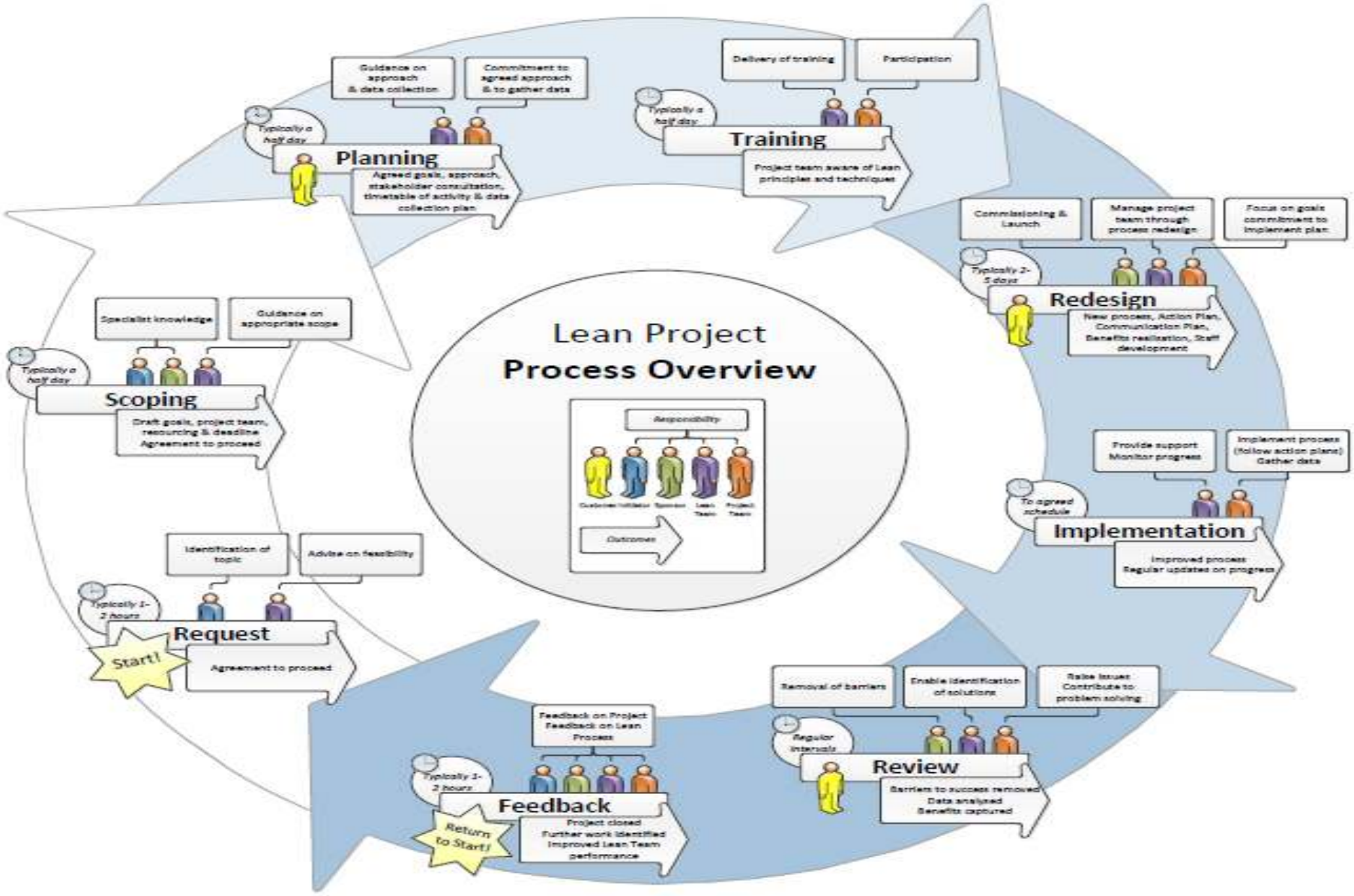
Appendix 8 Steps Taken to Analyse the Data

Steps	Technique	Explanation
1. Read single transcript	Manual	Each transcript was read and highlighted twice each. Notes were made separately of commonly occurring themes
2. Generate initial themes (transform comments into themes)	Manual	Initial themes were around the prompts for the interview schedule. Although it could be argued these were imposed themes (priori codes) they were also the key areas (or codes) occurring in the data. Five priori codes were identified in this process.
3. Create initial list of themes	NVIVO	A list of the initial themes (or nodes) were made using NVIVO. The transcripts were imported to NVIVO and read again in order to place the data of each transcript into these initial broad themes. Initially there were five of these which were different to those five prori codes identified in the previous stage.
4. Cluster themes	Manual	As the previous step was taking place, the author manually clustered the themes within the initial broad list into clusters.
5. Create a list/table with super-ordinate themes and sub-themes	NVIVO	These new themes and sub-themes were then input into NVIVO to create trees. Initially there were 5 super ordinate themes and 23 subthemes off these which were in vivo codes
6. Go to new transcript	Manual	Transcripts were re-read again
7. Create a final list/table with super-ordinate themes and sub-themes	NVIVO	Finally another layer of in vivo codes emerged creating 29 themes and sub-themes in NVIVO. These additions included “type/nature”, “positive”, “negative” under “Training” and “senior management”, “line management”, “change agent” under “Leadership”.

Appendix 9 Ethical Issues in Qualitative Research

Where in the process	Ethical Considerations	How addressed
Prior to conducting the study	- seek university approval - gain local permission from site and participants - select a site without vested interest in the outcome	- Submitted board approval for the research. - Newcastle University ethical standards sought - Permission gained for the sites and participants
Beginning to conduct the study	- disclose the purpose of the study - do not pressure participants into signing consent forms	- Participants were contacted via email to inform them of the study via an Information Sheet (Appendix B) - Participants were clearly given the opportunity to withdraw from the study, or not to sign the form. This was made clear at several stages of the process.
Collecting the data	- respect the site and disrupt it as little as possible - avoid deceiving participants - respect the potential power imbalance - do not "use" participants or a site without giving back	- Trust was built with the gatekeepers of the site via telephone calls and email contact and the researcher was as flexible as possible to limit disruption where possible. - The purpose of the study was clearly discussed with the gatekeepers and participants) including how the data was going to be used. - Leading questions were avoided, personal impressions were not shared and sensitive information was not disclosed.
Analysing the data	- avoid siding with the participants - avoid discussing only positive results - respect the privacy of participants	- Multiple perspectives were reported along with contrary findings. For example the shop floor view was contrasted with that of senior management to avoid siding with one level of participant. - Participants were coded and pseudonyms were used for the reporting of data, therefore protecting privacy.
Reporting the data	- falsifying authorship, evidence, data and findings - do not plagiarise - communicate in a clear, straightforward language.	- The findings were reported by the author with honesty. The author did not add to or take away from the data, but simply reported it. - Full referencing was used throughout including organisational documentation. Due to the need for the organisations to be anonymised, organisational documentation which informed the background to the cases was simply referenced Source A, Source B etc with the reference withheld by the author to protect the identity of the organisation. - Language appropriate to the audience was used to report the findings.
Publishing the study	- share data with others - do not duplicate publications - complete proof of compliance and lack of conflict of interest if required	- Copies of the end reports were provided to all the organisations who asked for them, and copies were made available for participants. - It was not possible to identify individuals.

Appendix 10 Eight Step Approach to Lean Implementation



Source: Source A (2012)

Appendix 11 How respondents understood Lean

Code	+ve	Comments	-ve	Comments
001	0	Doing what you are here to do	0	
002	2	Refining processes, identifying processes	3	Cutting, economising, efficiency at the expense of effectiveness
003	3	Thinking about processes, efficiency, getting rid of manual chores, removing duplication	0	
004	3	Encouraging staff, better outputs, efficiency and effectiveness	0	
005	1	Making things better	0	
006	2	Improving processes, cutting out time wasting	1	Doing away with processes
007	2	Making your job more valuable, maximising peoples time	0	
008	1	Efficiency	0	
009	2	Streamlining processes, eradicating waste	0	
010	2	Mapping out current processes, streamlining	0	
011	3	Project management, process improvement, business analysis	0	
012	1	Improvement methodology	1	Getting rid of processes that already work well
013	2	New way of thinking and working, taking a step back	0	
014	4	Process management, involving people, process changes, ownership	0	
015	2	Challenging people to question what they do, empowerment	1	Within control parameters set by management
016	3	Redesigning processes, reducing silos, learning	0	
017	3	Collaborating with other departments, contributing, rebuilding processes	0	
018	2	Respect for people, process improvement	0	
019	2	Getting rid of inefficiency, processes	0	
020	2	A mindset and way of thinking, project management	0	
021	2	Change management technique, process reengineering	0	
022	2	Respect for people, culture change	0	
023	1	Continuously improving the proportion of value added	0	
024	2	Achieving metrics, understanding activities	0	
025	2	Efficiency, productivity	0	
026	4	Efficiency, streamlining, productivity, A3 visual management	0	
027	0		1	Just another technique which doesn't change anything
028	2	Efficiency, objective driven	1	No different to TQM or Six Sigma
029	2	Opportunity to see new ways of working, cutting out slack	0	
030	4	Efficiency, productivity, striving to add value, eliminating waste	0	

031	3	Most efficiency, cost effectiveness, involving group	0	
032	1	Visual management	0	
033	2	Efficiency, productivity	0	
034	3	Efficiency, slick-ness, getting rid of slack	0	
035	2	Improvements, efficiency	1	A brand name
036	3	Tools and techniques, improving efficiency and effectiveness	0	
037	2	Flexible tools, developing a new culture	0	
038	1	Efficient processes	0	
039	1	Working with people	0	
040	1	A common sense approach	0	
041	1	Continuous improvement	0	
042	2	Process improvement and efficiency	0	
043	1	Efficiency	0	
045	3	Improving processes, working with people, engaging and empowering	0	
046	1	Knowing what you are doing and why	1	Restricted by bureaucratic public sector services
047	1	Adding value for the customer	1	Over use of tools to create problems further down process
048	2	Cutting waste, adding value	1	Reducing costs
049	3	Cutting waste, better flow, value adding	0	
050	3	Adding value, cutting waste, operating effectively	0	
051	2	Adding value, reducing waste	0	
052	1	Efficiency of processes	0	
053	3	improving business processes, adding value, focus on customer	0	
054	1	Culture change	0	

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