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POST-FORDISM, GENDER AND WORK

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**POST-FORDISM, GENDER AND WORK: RESTRUCTURING IN
THE NOTTINGHAMSHIRE CLOTHING INDUSTRY**

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**A thesis submitted in partial fulfilment of the requirements of
The Nottingham Trent University for the degree of
Doctor of Philosophy**

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ABSTRACT

In recent years there has been extensive debate concerning the way in which advanced industrialised nations have encountered economic restructuring, experiencing a shift away from the dominance of Fordism and the emergence of a more flexible mode of production. Two main theoretical perspectives exist, the Institutionalist theory of Flexible Specialisation, and the Regulationist theory of Post-Fordism. Neither adequately incorporate a gender informed analysis into their respective theories. This thesis has attempted to redress these inadequacies by incorporating elements of feminist theory concerned with labour markets into Post-Fordist theory. The principal claim to originality of this thesis is therefore its contribution to theoretical knowledge in this field. It incorporates a gender dimension into the economic restructuring debate, thereby filling gaps in Post-Fordist theory.

A number of theoretical arguments with respect to gender relations have been raised from this theoretical debate, encompassing three main issues: numerical flexibility; functional flexibility; and technological change. From this discussion certain questions were developed which were empirically tested by an examination of the introduction of one form of Post-Fordism - team working, in the Nottinghamshire clothing industry. A sample of thirty three companies were chosen, seventeen utilised the production line and sixteen had implemented team working. Three principal research methods were deployed in each of the companies, questionnaires and group recall sessions for operatives, and informal, semi-structured interviews for managers. The empirical investigation, like the theoretical debate, fills gaps in existing research. It provides a detailed study of a predominantly female manufacturing sector, something which is relatively absent in the existing research in this field. To date there have been very few detailed empirical enquiries referred to in Post-Fordist theory and those which are mentioned in feminist literature tend to concentrate on the service sector.

The thesis makes a number of theoretical and practical contributions to knowledge. Firstly, it reveals that Post-Fordism is a complex and heterogenous concept which encompasses a variety of methods of work organisation. Secondly, it suggests that the production flexibility sought under Post-Fordism cannot only be achieved by technological change as is widely suggested but also by alterations in the method of work organisation. Thirdly, it explains that Post-Fordism does not necessarily lead to an expansion of numerical flexibility in the manufacturing sector. Fourthly, the thesis reveals that functional flexibility leads to job enlargement as well as job enrichment and that the labour force implications of functional flexibility are not as straight forward as Post-Fordist literature suggests, simply having a beneficial effect on the workforce. Both job enrichment and enlargement can benefit the

workforce but also have drawbacks. The final contribution that the thesis makes is to explain that the way in which the workforce are affected by the search for flexibility cannot be easily dichotomised into numerical flexibility or functional flexibility. The precise way in which the workforce are affected is determined by: the nature of the system of team working implemented; the presence of technological innovation; and the degree of accompanying cultural change (based on a change in management style and the provision of training). Gender relations at work play a part in this process, determining the model of team working implemented, the way in which technology is utilised, and the extent to which these wider cultural changes are adopted.

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CHAPTER ONE: INTRODUCTION

In recent years there has been extensive debate and subsequent literature published concerning the extent to which advanced industrialised nations have experienced major economic restructuring. The literature focuses upon the pattern of economic development during the nineteenth and twentieth centuries in the western world. It examines the shift away from craft production towards the end of the nineteenth century, the dominance of Fordism during the twentieth century and the emergence of a more flexible mode of production in the last two and a half decades.

Of this literature, that concerning the classification of the recent restructuring following the Fordist era has provoked most academic discussion, drawing in commentators from a variety of political and ideological backgrounds, incorporating Monetarists, Neo-Classicists, Keynesians, Regulationists and Neo-Marxists alike. Given the wide range of participants in this debate, at first sight it appears complex and incoherent, particularly to new comers to the field. However, there are two principal schools of restructuring: the French Regulationist School, as exemplified by scholars such as Aglietta (1979), Boyer (1988a) and Leborgne and Lipietz (1988, 1990) who refer to the replacement of Fordism as Neo or Post-Fordism; and the Institutional School, advanced by commentators such as Piore and Sabel (1984), who refer to the Fordist successor as Flexible Specialisation.

There are substantial controversies and disparities between the underlying assumptions of these two bodies of theory, however there are also some basic similarities. Both focus upon explanations for the rise, decline and subsequent replacement of Fordism as the dominant mode of production in the twentieth century, arguing that in recent years there has been a search for a new form of economic development based on both production and labour flexibility. Further, and more importantly in the context of this thesis, both largely fail to incorporate a gender dimension into their respective theories of economic restructuring. Neither adequately address changing gender relations as part of their account of the recent search for flexibility. A factor which is surprising given that women's participation in the labour force has been increasing at an unrelenting pace and looks set to increase further in the next few years (Central Statistical Office, 1995). It is therefore crucial that these inadequacies are reversed and that a gender dimension is incorporated into the restructuring debate. This is the central aim of this thesis and is where both the idea and enthusiasm for this piece of research emerged.

This thesis attempts to incorporate a gender dimension into the economic restructuring debate and therefore develop and challenge existing knowledge in this field. In order to achieve this it aims to incorporate elements of feminist theory concerned with labour markets into Post-Fordist theory, thereby raising a number of theoretical arguments with respect to gender relations. These theoretical arguments are then empirically tested by an examination of the introduction of one type of work reorganisation - team working, in the Nottinghamshire clothing industry. It is anticipated that the findings of this thesis will contribute to, and build upon existing theoretical knowledge in the field, as well as having practical implications. It is expected that the thesis will be useful for practitioners, particularly for organisations concerned with implementing team working in the UK, such as the Nottinghamshire Work and Technology Programme¹, which funded this piece of research. These contributions, together with the empirical study constitute with the thesis's claim to originality.

In order to meet these objectives, the thesis is divided into six main chapters. The principal aim of **chapter two** is to critically examine the two main theoretical perspectives concerned with the economic restructuring debate - the Institutional and Regulationist schools of thought. It explores the three specific stages of economic development which preceded the new mode of production, paying particular attention to the Fordist phase and the various explanations for its rise and decline. The conflicts, contradictions and similarities between the Regulationist and Institutional accounts of the production and labour flexibility sought under the Fordist successor are then explored and attempts are made in the final section of the chapter to provide some preliminary thoughts towards the development of a model of economic restructuring within which a gender informed analysis can be inserted.

Chapter three aims to develop an understanding of the way in which existing feminist theoretical knowledge can be incorporated into the economic restructuring debate. Various aspects of feminist theory, particularly those concerned with gender relations and labour market issues are explored. This focuses on three main issues which arise from the restructuring debate: numerical flexibility; functional flexibility; and technological change. Examples are drawn, wherever possible, from the implementation of one form of work reorganisation, that of team working in the manufacturing sector. This enables existing feminist literature to be expanded upon and incorporated into the economic restructuring debate and leads to the development of a series theoretical arguments concerning the

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The Nottinghamshire Work and Technology Programme seeks competitiveness for clothing and knitwear firms through the development and dissemination of new models of work organisation based on team working.

implications for gender relations.

In order to test accurately the theoretical arguments arising out of chapter three, an empirical investigation has been undertaken which focuses upon the development of team working in the Nottinghamshire clothing industry. A number of questions were asked in order to test these theoretical arguments, which fall into two categories:

1. Numerical flexibility

Does team working lead to an expansion of numerical flexibility which has damaging effects for female labour? How does this affect women who have caring responsibilities? Does team working facilitate flexible working arrangements and the provision of childcare facilities, thereby mediating the constraints faced by working women?

2. Functional flexibility and technological change

Are models of team working which lead to job enlargement and which utilise technology in a way which deskills more likely to be implemented than those which lead to job enrichment and which utilise technology in a way which upskills when the workforce are predominantly female?

The aim of **chapter four** is to explore the nature of and rationale for this empirical investigation. The questions addressed by the empirical enquiry are outlined in detail, and the way in which these questions test the theoretical arguments arising out chapter three are discussed. Explanations for the choice of the Nottinghamshire clothing industry and some background information concerning the characteristics of the industry are provided. The chapter then explores the nature of and reasons for the methodology utilised, explaining the way in which a sample of companies were identified, and outlining the research methods deployed to analyse them. The chapter concludes by describing the way in which the results of the empirical investigation have been analysed.

Chapter five seeks to test certain aspects of the theoretical arguments arising out of chapter three; specifically those relating to the increase in use of numerically flexible work practices. This is achieved by drawing upon evidence from the empirical investigation of the introduction of team working in the Nottinghamshire clothing industry. The chapter explores the extent to which team working encourages an expansion of numerical flexibility, paying particular attention to the level of redundancies and part-time work in the industry. The implications of these findings for female employees working in teams and specifically for

women who also work in the unpaid labour market, caring for children and elderly dependants are then examined and the extent to which team working can have wider implications by mediating the constraints faced by many working women is explored.

Chapter six also seeks to test the theoretical arguments arising out of chapter three but in terms of the emergence of functional flexibility and the existence of technological change. Again this is achieved by drawing upon evidence from the empirical investigation of the introduction of team working in the Nottinghamshire clothing industry. The chapter examines the extent to which team working leads to functional flexibility, in terms of job enlargement or job enrichment and analyses the role that technological change plays in this process, discussing the way in which new technology can upskill or deskill the jobs of the workforce. The resulting implications for the predominantly female workforce are explored and the validity of the various dichotomies (job enlargement versus job enrichment and upskilling versus deskilling) are assessed. The way in which the method of work reorganisation and gender relations at work play a part in this process are then examined.

The thesis concludes with **chapter seven** which pulls together the various strands of the thesis and explains how the main objectives have been met. The conclusions of each of the preceding chapters are revisited, so as to remind the reader of the key findings and achievements. The thesis's claims to originality and its importance, in terms of the contribution it makes to theoretical knowledge, as well its practical implications are then discussed.

CHAPTER TWO:

THE EMERGENCE OF A MORE FLEXIBLE MODE OF PRODUCTION AND WORK ORGANISATION: FLEXIBLE SPECIALISATION OR POST-FORDISM?

2.1 INTRODUCTION TO THE ECONOMIC RESTRUCTURING DEBATE

As suggested in the first chapter, an enormous amount of literature has recently emerged, focusing upon the pattern of economic development during the nineteenth and twentieth centuries in advanced industrialised nations. Much of this literature has concentrated upon economic restructuring, examining the shift away from craft production towards the end of the nineteenth century, the dominance of Fordism during the twentieth century and the move to a more flexible mode of production in the last two and a half decades. As previously explained, two principal schools of thought have emerged intent on classifying this process of economic development, with particular emphasis on the events of the last twenty five years. On the one hand, the French Regulationist School has examined these processes, exemplified by Neo-Marxists such as Aglietta (1979), Boyer (1988a), Leborgne and Lipietz (1988, 1990) and Lipietz (1987). Authors such as Piore and Sabel (1984), on the other hand, have analysed these proceedings from a different political and ideological perspective, forming the Institutionalist School of restructuring. Other theorisations of the transition also exist but are peripheral to the debate and therefore shall not be elaborated upon here (see Amin (1994) for a brief overview of other literature in the field).

Both the Regulationist and Institutionalist authors tend to agree that Fordism (having been the dominant mode of production during the twentieth century) is now in decline and has been replaced by a more flexible mode of production. However, when examining this restructuring process, major discrepancies between the two theories begin to emerge. These differences encompass explanations for the decline of Fordism, the classification of its replacement, and the implications of the process for labour relations. These key disparities between the two theories can be explained by their contrasting ideological underpinnings. The Institutionalist (Piore and Sabel, 1984) take an indeterminacy view, arguing that a completely new technological paradigm of Flexible Specialisation has recently 'just happened' to develop, whilst those grounded in Regulationist theory offer a deterministic explanation, suggesting that economic development is determined by the capitalist mode of production and the mode of regulation. They refer to the replacement of Fordism as a new regime of accumulation. However, variations do exist within the Regulationist framework. Commentators such as Aglietta (1979) suggest that the new mode of development can be

classed as Neo-Fordism, based on a simple expansion of the fundamentals of Fordism. More recent Regulationists argue that a single solution to the crisis of Fordism has yet to emerge, and that a number of replacements for Fordism are possible. This is particularly true of Leborgne and Lipietz (1988, 1990) who argue that Post-Fordism (which encompasses a range of alternative regimes of accumulation) can be viewed as the Fordist successor.

These two schools of thought concentrate upon the implications of economic restructuring in terms of both production and labour organisation. However, as they are both grounded in different theoretical perspectives their approach to each differs substantially, this being particularly true of their analysis of the implications for labour relations. Given that the central aim of this thesis is to add a gender dimension to the economic restructuring debate, these issues are of particular importance here. The way in which both production and labour organisation are explored determines the extent to which a discussion of gender relations can be incorporated into the analysis of each school of thought. The principal aim of this chapter is therefore to critically examine these two schools of restructuring, exploring the conflicts, contradictions and similarities between them in terms of the production and labour flexibility sought under the Fordist successor. It is envisaged that this will ultimately enable the development towards a model of economic restructuring within which a gender dimension can be incorporated.

In order to adequately achieve this, the events which preceded the new flexible mode of production require some investigation. Thus this chapter is split into three main sections. The first section (2.2) explores the three specific stages of economic development which preceded the new mode of production. These three stages are briefly summarised, although particular attention is paid to the third stage of production (the Fordist era) and the respective Regulationist and Institutionalist explanations for its rise and decline. The second and main part of the chapter (2.3) concentrates upon the fourth stage of production, exploring the two contrasting theoretical investigations of the replacement of Fordism. Attempts are then made in the third section (2.4) to provide some preliminary thoughts towards the development of a model of economic restructuring within which a gender informed analysis can be inserted.

2.2 PHASES OF ECONOMIC DEVELOPMENT (1750-1973)

During the evolution of industrial society a number of specific phases of economic development have been encountered up to the present day. These phases can be divided into four distinct periods, the first three of which have previously been identified elsewhere (Blackburn, 1985): phase one - 1750's to 1850's - craft production; phase two - late

nineteenth century to the end world war I - Taylorism; phase three - the inter war period to 1973 - Fordism; and phase four - 1970's to date - Post-Fordism or Flexible Specialisation. Each of these phases are characterised by the methods of production and work organisation dominant in that period. However, it must be noted that this does not indicate the exclusive existence of any particular prototype in any one time period.

The general characteristics of each of the four phases are subject to little debate, with both the Institutionalists and Regulationists tending to agree in principal with the nature of the economic development experienced in each period. However, as stated previously, when going beyond these general characteristics to explore explanations for the rise and decline of Fordism and the classification of its recent replacement, considerable debate and controversies begin to emerge.

This section will explore the first three of these stages, whilst stage four is dealt with in section 2.3.

2.2.1 Phase One: 1750's to 1850's - Craft Production

This period was marked by the industrial revolution in the UK. Economic development was dominated by craft production and the region was viewed as a natural unit of economic activity. Regional centres of production were referred to as 'Industrial Districts' by Alfred Marshall, with working examples evident in numerous localities such as Lyon in France (silk production) and Sheffield in Britain (steel production) (Sabel, 1989). Flexibility and specialisation were the key concepts characterising this period. With the aid of inter firm cooperation, whereby firms worked closely with competitors, and the utilisation of a highly skilled and adaptable workforce, the regions were able to produce flexible and specialised commodities, constantly varying their products in order to satisfy changing consumer tastes.

2.2.2 Phase Two: Late Nineteenth Century to the End of World War I - Taylorism

During this period craft production continued to exist but there were continuous attempts to adopt a more systematic style of management, based on the achievement of maximum labour efficiency. As a consequence labour utilisation became the object of study and management based literature began to emerge. This systematic management movement developed primarily in the USA in the 1880's and 1890's and subsequently spread to Britain (Littler, 1982).

Systematic management predominantly arose out of the increasing specialisation of both

products and processes in US industries (*ibid*). Product specialisation involved a reduction in the range and variety of the commodities produced by individual firms, while process specialisation was facilitated by the introduction of new technology based on specialised machinery and a simultaneous encouragement of a division of labour, with workers performing specialised as opposed to generic tasks (Littler, 1978).

Early systematic management theorists, such as Babbage, focused most of their attention on process specialisation and in particular the adoption of the division of labour. However, these early theorists paid little attention to the difficulties involved in this process, namely the problem of integration and coordination of a workforce performing highly fragmented tasks, and therefore it was some time until systematic management became fully established (Littler, 1982).

It was not until the work of Frederick W. Taylor that systematic management was extensively adopted. Taylor provided a comprehensive and detailed analysis of systematic management and focused a great deal of attention on the integration and coordination of the division of labour, thus redressing the problems of the work of the previous theorists. Taylor's work culminated with the publication of *The Principles of Scientific Management* in 1911. This marked the birth of Taylorism and was eventually recognised as the principal innovation of this period. Via this published work, Taylor provided a scientific theory which facilitated the elimination of the wastage of resources and permitted management to utilise labour in the most efficient and effective way possible (Lane, 1989). Taylor believed that management could go beyond its previous boundaries in order to control the mode of performance of each labour activity and adopted a principle advocated by Babbage some years earlier, i.e. that efficiency and hence productivity tends to rise with the division of labour (*ibid*). As Braverman (1974) points out, scientific management can be viewed as, "*an attempt to apply methods of science to increasingly complex problems of the control of labour in capitalist enterprises*" (p.86).

Taylorism has three main principles. Firstly, it involves employers recognising the quantity of a given task of work that can be achieved each day. This enables management to discover and enforce speedier methods and short cuts, which labour itself knows exists, but only uses at its own discretion. Secondly, under Taylorism all possible mental work is removed from the shop floor and placed in the planning or lay out department. This involves the separation of conception from execution (i.e. mental from manual work) and stimulates a removal of labour's control over its own actions. Finally, Taylorism involves the

development of the task idea. Under the previous system of craft production workers were so skilled that management could exercise very little control over them. However, under scientific management, power and authority is transferred to the employer, who is able to decide what tasks workers should perform, how these tasks should be performed and the time allowed for each task (Braverman, 1974, Friedman, 1977, Littler, 1985). Frank B. Gilbreth later extended this task idea further by developing the Time and Motion Study, whereby each motion is given a name, a symbol, a colour, a code and a time measured in 10,000's of a minute (Braverman, 1974, Friedman, 1977).

Taylorism can therefore be described as involving a division of jobs into their smallest elements and a requirement to execute individual tasks in the shortest time period. Taylorism consequently involves a deskilling of labour and according to Braverman (1974) encourages fragmented, monotonous, meaningless, detailed work, robbing the worker of the opportunity to apply skill and exercise discretion. Hence labour becomes cheaper and easier to substitute and increasingly comes under the control of management.

Taylorism became the principal source of management and labour control in the USA during the twentieth century and as the development of multinational corporations facilitated the diffusion and transfer of both technology and techniques, it was not long before the Taylorist principles were adopted in Britain and other advanced industrialised countries (Gospel, 1983).

2.2.3 Phase Three: The Inter War Period to 1973 - Fordism

2.2.3a Characteristics of Fordism

During this period the region became the secondary location for economic activity as the dominance of the giant multinational corporation expanded. Within these multinational corporations large numbers of workers were employed, working on the Taylorist principles of scientific management. This provided the prerequisite for the development of Fordism, which was basically an extension of these already established trends (Gartman, 1979).

The crucial date surrounding the development of Fordism was 1914. It was in this very year that Ford introduced the \$5, eight hour day, working week for his workers on the first car assembly line at his Michigan plant in the USA. Ford incorporated the assembly line with Taylor's scientific management principles of the division of labour. The coordination of these two concepts allowed work to be conveyed to the workers, enabling the speed of work to be determined by the movement of the assembly line (*ibid*). Consequently Fordism facilitated

a rise in labour intensification and therefore productivity (see table 2, page 22 for a more detailed definition of the production techniques utilised under the Fordist mode of production), the latter occurring to such an extent that commodities could be mass produced (Harvey, 1989, Aglietta, 1979).

These two concepts, labour intensification and mass production, are central to the notion of Fordism and therefore require further analysis. Firstly, to examine labour intensification. As Fordism involved the utilisation of Taylorist principles based on the division of labour it inevitably led to the emergence of a workforce which was predominantly unskilled, performing highly fragmented work tasks. Wherever possible Ford attempted to reduce the number of jobs requiring skill, knowledge and judgement, replacing these by simple, repetitive, unskilled tasks. A good example of this deskilling process encountered under Fordist production is provided by Gartman,

"There applied for work at this factory one day a man who represented himself to be a skilled erector of automobiles. The plant needed such a man and so hired the applicant and assigned him to the assembly of an automobile. It soon became apparent that the employee did not even know where or how to commence the assembly.

The superintendent said to him:

"We thought that you were a skilled erector of automobiles"

"I thought I was"

"Where did you work?"

"At Ford Motor Company"

"What did you do?"

"I screwed in nut number 58"

(Gartman, 1979, p. 203)

Attempts to break down work tasks into the most repetitive, least skilled form possible continued to prevail throughout the post-war years as Fordism spread, not only throughout the USA but to other advanced industrialised sectors (Brecher, 1979). This deskilling process together with the mechanisation of the pace of work led to substantial labour intensification. This was primarily made possible because the speed of work was directly linked to the speed of the assembly line. At the same time the piece rate payment system, whereby workers are paid in relation to the volume of the commodities produced, became widespread. This exacerbated the degree of labour intensification, with workers being forced to produce at substantially higher rates than was previously the case, in order to achieve equivalent or higher levels of income (Gartman, 1979, Lamphere, 1979).

It was not, however, solely the labour process which was affected by the emergence of Fordism, it had profound implications too for the production process. This is where the second concept of Fordism becomes apparent, mass production. Production under the Fordist regime was structured around the semi-automatic assembly line, which together with fixed purpose, product specific equipment facilitated the mass production of standardised commodities. It was soon discovered that this form of production realised the benefits of economies of scale, whereby unit costs fall continuously with output. Large multinational corporations therefore became widespread, enabling the large batch production necessary to maximise these economies of scale (Schoenberger, 1988, Harvey, 1988).

However the success of mass production was not just dependent upon the presence of multinational corporations but also on the transportation and sale of large batches of commodities to the final market, the consumer. This link between the producer and final consumer was facilitated by two principal developments. Firstly technological advances in transportation systems prevailed, resulting in the development of both the rail and later the road network in the USA. This facilitated the distribution of these mass produced commodities, ensuring that a regional centre of manufacturing could supply a nation with a geographically dispersed demand (Piore and Sabel, 1984). Secondly mass retailing started to emerge enabling both the storage and the sale of these mass produced commodities to the consumer (*ibid*).

However, neither the multinational corporation alone, nor advances in transportation and retail systems could solve the basic dilemma of mass production, i.e. that the success of mass production is dependent upon the existence of its counterpart, mass consumption (Schoenberger, 1988). This was recognised by Ford at an early stage and it is widely agreed that what was so special about Ford and what distinguished him from Taylor was his vision and recognition that mass production required mass consumption and that this necessitated not just changes in production techniques, but changes in the mode of life too (Harvey, 1988, Lipietz, 1988, Schoenberger, 1988). Thus, Aglietta (1979) has described Fordism as a principle of articulation between processes of production and a mode of consumption.

Ford initially advocated that a new society based on mass consumption could be achieved via a \$5, eight hour day, working week. This would ensure worker discipline and provide workers with sufficient disposable income and leisure time to consume mass produced commodities (Harvey, 1988). Ford strongly believed that he could utilise corporate power to regulate the economy as a whole, by increasing wages to increase effective demand.

However, corporate power proved an insufficient tool in the task of regulating the economy and so the state intervened in order to reinforce the trend of mass consumption. Hence the welfare state emerged, widening the basis of mass consumption to segments of the population who were either not employed on the Fordist production line or were not employed at all. This was primarily achieved by the development of a comprehensive system of social security benefits and in some instances the introduction of a minimum wage. Simultaneously, Keynesian demand management policies were adopted which helped to insulate the Fordist system against cyclical fluctuations in demand and maintain stable levels of mass consumption. At times of depressed demand in the economy, government spending was raised in order to stimulate effective demand and stabilise the economic system (Piore and Sabel, 1984, Harvey, 1988, Jessop, 1993).

The development of Fordism, with the aid of multinational corporations, technological advances in transportation systems, the growth of mass retailing systems, the development of the welfare state and Keynesian demand management policies stimulated a period of unprecedented economic growth in the USA. This success was recognised throughout the western world and consequently by the end of the second world war, countries such as France, Germany and the UK had followed suit. Hence Fordism became the dominant mode of production in advanced industrialised countries during the post war period and remained dominant until the early 1970's.

2.2.3b Explanations for the Rise and Decline of Fordism

Although both the Institutionalists and Regulationists tend to agree on the broad definitions of craft production, Taylorism and Fordism, their explanations for the emergence and decline of these phases of economic development tend to diverge somewhat. These discrepancies are perhaps most clear when examining explanations for both the rise and subsequent decline of Fordism.

The Institutionalists, primarily through the work of Piore and Sabel (1984), take an indeterminacy view of economic restructuring, arguing that society is not a totality and that relationships are not governed by one single principle. Consequently they recognise a number of possible outcomes in terms of the pattern of economic development and that a number of distinct choices can be made between two dominant technological paradigms - Fordism (mass production) and Flexible Specialisation (craft production). The Institutionalists argue that throughout industrial society these two types of production coexist, but periodically 'branching points' are encountered where choices between the two are required and therefore one will always dominate the other. At the first branching point, what Piore and

Sabel (1984) refer to as the first industrial divide, mass production and therefore Fordism was chosen in preference to craft production. Despite this preference for mass production they argue that craft production continued to exist. Berger and Piore (1980) state that craft production remained viable throughout this period for two main reasons. Firstly, the product specific machinery required under the Fordist mode of production could not be mass produced due to the absence of a substantial market and secondly, occasionally demand was created which was too small for mass production to be viable.

The Institutionalists argue that there was nothing inevitable about the development of Fordism and that a number of occurrences just happened to prevail simultaneously, allowing Fordism to expand. This is exemplified by Piore and Sabel (1984) who argue that Ford's \$5, eight hour day, working week and later the development of both Keynesian economic policies and the welfare state ensured that the mass production of Fordism was sustained by the development of mass consumption. Had these policies not been adopted, Fordism would not have expanded. The Institutionalists therefore advocate that nothing is inevitable in terms of economic development and that the rise and eventual success of Fordism is attributable to pure chance and blind decision making, and is a fortunate development which had no inherent guarantee (*ibid*).

The Institutionalists take a similar view of the decline of Fordism, arguing that a number of situations just happened to occur simultaneously leading to a breakdown of the Fordist system of production. Piore and Sabel (1984) attribute the deterioration of economic performance and the eventual collapse of the Fordist system to three principal factors, which they believe coincidentally prevailed.

The first factor relates to a number of accidents or mistakes. Piore and Sabel (1984) argue that various mistakes in the economic policy making process, such as the adoption of floating exchange rates, restrictive economic policies based on high interest rates and the Russian wheat deal, together with a number of unforeseen accidents, such as an expansion of social unrest as a result of a deepening economic recession and the prevalence of two oil crises led to economic difficulties during the late 1960's, early 1970's, undermining the viability of Fordism. They argue that these accidents and mistakes led to an expansion of both inflation and unemployment and subsequently the rate of economic growth slowed down and demand fell. These occurrences resulted in a disintegration of mass markets for standardised products and provided a disincentive to entrepreneurs to invest in the long term, product specific machinery required for mass production (for a more detailed

explanation see Piore and Sabel, 1984, Sabel, 1982, 1989, Bowles and Gintis, 1982).

The second explanation indicates that the crisis was due to a limitation of the system. By the 1960's the mass domestic consumption which had triggered off the post war period of economic growth had at last began to reach its limits, with mass consumption falling as the majority of the population had already purchased the full range of existing consumer durables. Markets became saturated and there was a shortfall in demand. The mass consumption required to maintain the mass production of Fordism was therefore no longer apparent (Piore and Sabel, 1984, Sabel, 1989). Piore and Sabel (1984) additionally point out that technological innovation and the presence of a low waged economy in newly industrialised countries such as Argentina, Brazil, Mexico, Taiwan and Hong Kong exacerbated the situation, enabling these countries to produce more competitively priced, standardised goods than advanced industrialised nations, therefore accelerating the saturation of industrial markets.

The third factor relates to a change in consumer tastes. Piore and Sabel argue that at the same time as these occurrences, a change in consumer demand just happened to prevail. Customers no longer demanded mass produced, standardised, commodities manufactured under the Fordist system, but sought more diversified, specialised, commodities which had a higher degree of design content. Thus Institutionalists advocate the existence of consumer sovereignty. They argue that this change in consumer behaviour was marked by the re-emergence of craft production and the development of small, design led, retail outlets selling semi-customised products (Piore and Sabel, 1984).

The Regulationist explanation for the rise and decline of Fordism is somewhat different. The Regulationists (Aglietta, 1979, Boyer, 1988a, Leborgne and Lipietz, 1988, 1990, Lipietz, 1987) view economic restructuring, not as an isolated concept as the institutionalists do, but as a total package of relations and arrangements which regulate and stabilise production and output. They tend to have a much more socially deterministic view of economic development, and unlike the Institutionalists, believe that society is governed by specific principles, namely the Marxist principles of the capitalist mode of production. Regulationists utilise the basic concepts of Marx, arguing that within the capitalist mode of production, the fundamental goals of economic activity are both the valorisation and the accumulation of capital (Lipietz, 1987). They argue that throughout history in attempts to achieve these fundamental goals, various models of economic development will prevail. Regulationists believe that each model of economic development can be analysed from two different perspectives, as a regime of accumulation and as a mode of regulation.

The regime of accumulation is a phase of relatively stable capitalist development and is defined by Leborgne and Lipietz (1988) as, *"the macro-economic principle which describes the compatibility over a prolonged period between the transformations in production conditions and in uses of social output"* (p.264). The mode of regulation, on the other hand, mediates crises tendencies which are inherent in the capitalist accumulation process and is described by Leborgne and Lipietz as,

"The combination of forms of adjustment and contradictory behaviour of individual agents, with the collective principles of the regime of accumulation. These forms of adjustment may include cultural habits, as well as institutional elements, such as laws and agreements."

(Leborgne and Lipietz, 1988, p. 264)

Hence, the mode of regulation ensures that the regime of accumulation operates correctly, stimulating economic growth. However, Regulationists believe that each cycle has its limits due to inherent limitations in the capitalist mode of production and when these limits are met over-accumulation occurs (i.e. the coexistence of idle capital and idle labour). In these circumstances the mode of regulation will no longer be able to create the regime of accumulation positively. Consequently a restructuring process is triggered off, whereby a new regime of accumulation is formed, accompanied by a new mode of regulation. Thus the process of economic development is viewed as being determined by the crises tendencies of the capitalist mode of production.

Regulationists have provided a historical periodisation of economic activity covering the nineteenth and twentieth centuries. This periodisation can be seen in table 1 and is similar to that previously outlined but focuses upon the existence of a range of principal regimes of accumulation and modes of regulation. Like the Institutionalists, the Regulationists are keen to point out that although one regime of accumulation is dominant in each era, others coexist. An age of intensive accumulation is therefore one in which intensive methods predominate (Dunford, 1990).

Regulationists argue that up until the 1930's the development of Fordism was well under way, however the mode of regulation remained competitive and so wages and effective demand were determined by market conditions. As a consequence, there tended to be a lack of high, stable, purchasing power and more importantly a lack of mass consumption (Dunford, 1990). The regime of accumulation was moving towards Fordism but could no longer be mediated by the existing mode of regulation. Regulationists argue that during the post war period substantial economic restructuring occurred and the mode of monopolistic

Table 1. Historical Periodisation of Economic Activity*

1. Industrial Revolution to early twentieth century	2. Early twentieth century to 1930's	3. Post war period to 1973	4. 1973 onwards
Extensive accumulation	Intensive accumulation - without mass production (Taylorism)	Intensive accumulation - with mass production (Fordism)	Post-Fordist accumulation
Old mode of regulation	Competitive regulation	Monopolistic regulation	Semi-flexible mode of regulation

*This table has been devised from the work of Dunford (1990)

regulation formed, thus stimulating mass consumption and enabling the intensive regime to reach its climax in the development of a fully fledged Fordist system. The Regulationists argue that this new mode of regulation was triggered off by two principal policies; the emergence of the welfare state (Ashford, 1986, Bruce, 1972, Jessop, 1993) and Keynesian demand management (Harvey, 1988, Lipietz, 1987), both of which helped to stimulate mass consumption. Thus Fordism was the outcome of a new mode of monopolistic regulation designed to mediate a new regime of intensive accumulation.

Like their explanation for the rise of Fordism, the Regulationists similarly explain the decline of Fordism as the result of crises tendencies present within the capitalist mode of production. They argue that its decline was attributable to the exhaustion of the system of accumulation, given the available mode of regulation. Lipietz (1987) argues that an economic downturn in the Fordist mode of production was originally triggered off in the latter part of the 1960's when the capital/output ratio increased (i.e. an increase in the amount of investment in capital required to increase the volume of production). As a result, more complex capital equipment geared to increasing productive capacity per person could no longer be introduced at a cost which made it worth while and the general level of investment decreased (Lipietz, 1987). Lipietz (1992a) argues that simultaneously working class militancy increased, as workers eventually reacted against the constant increases in labour intensification under Fordism and were no longer willing to accept the denial of human responsibility involved in Taylorist management techniques. These factors together had the cumulative effect of a fall in productive growth (Leborgne and Lipietz, 1988, Lipietz, 1987, 1992a), with a fall in employment, leading to an increase in unemployment and therefore a reduction in effective demand, undermining mass consumption and leading to a crisis of over-accumulation.

Lipietz (1987) then points out that in an attempt to revive the mass markets of consumption, western countries turned to newly industrialised countries such as Brazil, South Korea and Mexico for a new source of demand, and consequently Fordism spread to these peripheral regions. This led to an international division of labour, whereby advanced industrialised countries took advantage of cheap, unskilled, primarily female labour in developing countries. However, Lipietz argues that this process tended to exacerbate rather than solve the crisis, so instead of providing a source of new demand, it proved a source of competition to the developed world. This further reduced western employment, increasing unemployment, and reducing both effective demand and mass consumption even more. Hence the Regulationists view the presence of under-consumption as a result of the crisis of Fordism and not as a principal cause of it, as the Institutionalists suggest.

Aglietta (1979) argues that the crisis of Fordism was further worsened by a number of external shocks to the system, the principal one being the sudden oil price increases experienced as a result of the Arab/Israeli war of 1973. Aglietta points out that this speeded up the already declining capitalist economies and resulted in turmoil in the economies of advanced industrialised countries.

It is therefore clear that the Regulationists provide a socially deterministic explanation for the decline of Fordism, arguing that the principal aims of the capitalist mode of production are contradictory and render each regime of accumulation, including Fordism, crisis prone.

From this brief analysis of the two schools of economic restructuring it appears that the Regulationists view of the economic development process and specifically the rise and decline of Fordism during the twentieth century is much more convincing than that of the Institutionalists, offering a comprehensive and reasoned explanation for the procedure of events. The benefits of the Regulationist account of the rise and eventual decline of Fordism are threefold.

The first and underlying advantage of the Regulationist theory is that their account of the rise and subsequent decline of Fordism is more consistent than that of their Institutionalist counterparts. Throughout their work they adopt a determinacy argument, advocating that the economic development process can be explained by crises tendencies within the capitalist mode of production which periodically involve a restructuring process. The Institutionalists on the other hand take an indeterminacy approach to economic development, advocating that it is the outcome of chance decisions which just happen to simultaneously occur at a number of societal branching points. Consequently their theory lacks a convincing, reasoned

explanation for both the rise and then the decline of Fordism. Moreover, at times their arguments appear both confused and contradictory. When analysing the rise of Fordism, Piore and Sabel (1984) continuously argue that this stage of economic development arose out of a chance decision, but elsewhere in their work they go on to contradict themselves arguing that the development of Fordism was inevitable after all, due to the powers of its competitive strength. This contradictory nature of the work of Piore and Sabel is further prevalent in their discussion of the decline of Fordism. On the one hand they argue that the decline of Fordism was due to a number of accidents and mistakes and on the other hand they state that the decline of Fordism was inevitable due to its inherent limitations, which eventually resulted in the emergence of an under-consumption.

Market saturation as an explanation for the decline of Fordism is a second source of controversy between the two schools of economic restructuring. The Regulationist explanation of the decline of mass consumption and in turn the emergence of market saturation appears much more convincing than the one advocated by the Institutionalists. The Regulationists argue that mass consumption eventually declined, as a result of inevitable reductions in both productive growth and profitability, which in turn led to a reduction in employment and effective demand. Piore and Sabel (1984), on the other hand, provide a much less satisfactory argument, advocating that markets eventually became saturated as the majority of the population possessed the commodities produced under the Fordist system. They overlook the fact that technological change permits the constant innovation of existing commodities and the creation of new items such as video cassette recorders, camcorders, compact disc players, microwave ovens - the list is endless. These innovatory procedures together with the fact that having obtained one commodity such as a television, households then purchase an additional one, lead to a maintenance of a high level of demand for mass produced commodities (see Williams, 1987 for a more detailed explanation).

The final advantage of the Regulationist theory over and above that of the Institutionalists concerns the way in which the Regulationists acknowledge that the economic development process is determined by wider societal relations. While the Institutionalists argue that a change in consumer tastes have triggered the emergence of flexible, specialised production and ultimately the decline of Fordism, the Regulationists acknowledge that this is unlikely in a capitalist society where consumer sovereignty is limited and where the advertising industry, together with institutions such as the media and schools have influential implications for customer demands and tastes. As Dicken (1986) explains, fashion is supply rather than demand led.

2.3 PHASE FOUR: 1970'S TO DATE - POST-FORDISM/FLEXIBLE SPECIALISATION

Following the decline of Fordism as the dominant mode of production much discussion has recently emerged about its possible replacement. Although both schools of thought in this field disagree fundamentally about the explanations for the rise and decline of Fordism in the twentieth century, they both agree that a more flexible form of production is emerging as the Fordist successor. Both the Regulationists and Institutionalists argue that the new mode of production is characterised by a search for both production and labour flexibility. This is, however, as far as the similarities between the two theories prevail, with the classification of this recent restructuring process, even with respect to its title, proving a cause of considerable conflict. The Regulationists refer to the Fordist successor as Neo or Post-Fordism, while the Institutionalists label it Flexible Specialisation.

This section of the chapter addresses the issues surrounding the replacement of Fordism, drawing upon the work of both schools of economic restructuring and analysing the differences and similarities between the two. This is then utilised in the final section of the chapter (2.4) in order to develop a model of economic restructuring (superseding Fordism as the dominant mode) against which the implications for gender relations can be tested throughout the remainder of the thesis. In order to achieve this a critical analysis of the Institutional theory of Flexible Specialisation is developed, followed by an examination of the Regulationist theory of Neo or Post-Fordism.

2.3.1 Institutionalists and Flexible Specialisation

As explained in section 2.2.3b, Piore and Sabel (1984) argue that the model of mass production has recently broken down and that this was primarily initiated by an under-consumption, which was in turn caused by changing consumer demands. They go on, arguing that these changes together with the introduction of new, flexible technologies i.e. Computer Aided Design (CAD) and Computer Aided Manufacturing (CAM) has enabled the production of small batch, semi-customised commodities at a low cost and has allowed producers to re-consider their economic strategies and to re-adopt craft production. Piore and Sabel refer to this return to craft production as a shift towards a new technological paradigm which they call Flexible Specialisation.

Piore and Sabel's indeterminacy towards economic development is again prevalent here. They argue that the present crisis of mass production cannot only be solved by Flexible Specialisation but by an equally viable alternative of Multinational Keynesianism. Thus they state that, "*....there is no hidden dynamic of historic evolution. No law of motion of capitalist*

development makes the spread of Flexible Specialisation the inevitable outcome of the crisis of the past decade" (Piore and Sabel, 1984, p.281).

Furthermore, Piore and Sabel argue that the coexistence of Multinational Keynesianism and Flexible Specialisation is a real possibility.

2.3.1a Multinational Keynesianism

Piore and Sabel (1984) envisage the possibility of a 'patching up' or re-ordering of the Fordist regime into what they call Multinational Keynesianism. This is viewed as a simple expansion of the principles of Fordism, involving an extension of the institutional organisation that gave rise to both the corporation and to macro-regulation. Multinational Keynesianism rests on the fact that the crisis of the last decade is a crisis of under-consumption and a possible solution would be to increase both the aggregate purchasing power and the aggregate demand of nations that previously lacked such mass consumption patterns. However, Piore and Sabel do concede that a number of related institutional mechanisms would be required for this to be a viable option. The requirements highlighted by Piore and Sabel (1984) are threefold and are as follows:

Firstly, they argue that an amalgamation of markets would be required to ensure that international demand expands at a rate equal to the expansion of productive activity. This, they argue, could be achieved by trading blocs, whereby advanced industrialised countries exchange sophisticated products for raw materials and simpler manufactured goods from the third world.

The second requirement for Multinational Keynesianism is a stable business environment, which could be achieved by managed and controlled exchange and inflation rates. This would reduce the uncertainties associated with the long term investment in product specific machinery.

The final mechanism required is one to apportion the expansion of the productive capacity amongst advanced industrialised countries and between them as a group. Without such a mechanism Piore and Sabel argue that each firm would be tempted to expand its capacity so much that the market would be quickly saturated, thus triggering off an overcapacity problem.

Piore and Sabel (1984) believe that a system of Multinational Keynesianism, with the above

institutional mechanisms, is a possibility. However, the other alternative is the one Piore and Sabel believe *is* emerging and is the one that they clearly favour, i.e. the development of a new technological paradigm of Flexible Specialisation based on a return to craft production.

2.3.1b Flexible Specialisation

Piore and Sabel (1984) argue that the more favourable alternative to Multinational Keynesianism is Flexible Specialisation. They view Flexible Specialisation as a new flexible technological paradigm which arose out of both changing consumer demands and the introduction of new flexible technologies during the 1970's. Amin (1989b) suggests that Flexible Specialisation is "*a new organisational principle that best responds to the growth of flexible markets*" (p.15).

Piore and Sabel (1984) reinforce this view of Flexible Specialisation, arguing that it is a way in which firms can respond to the crisis of mass production by directly confronting the rigidities of Fordism and replacing them with more flexible methods of organisation in terms of both production and labour. These two key organisational principles of flexible production and flexible labour are central to the Flexible Specialisation supposition and are examined in turn below.

Firstly, to explore the concept of flexible production. The Flexible Specialisation advocates (Piore and Sabel, 1984, Hirst and Zeitlin, 1989, Amin, 1989a, 1989b, Jones, 1989, amongst others) primarily focus their work on the emergence of more flexible production methods. As a consequence a great deal of literature on this issue has emerged. In order to provide a definition of the flexible production methods sought under the Flexible Specialisation paradigm it is necessary to draw together the work of the various commentators. The contrasts between Fordism and Flexible Specialisation, in terms of production flexibility, are summarised in table 2. It must, however, be noted at this juncture that the terms Fordism and Flexible Specialisation referred to in table 2 are not meant to serve as ideal types. The table lists the main characteristics of each concept, but this does not infer that either Fordism or Flexible Specialisation must have all these characteristics and nor does it infer that they cannot have additional characteristics.

Most authors commentating on the emergence of Flexible Specialisation agree that central to the debate is the emergence of new technology which facilitates the flexible, small batch production of customised commodities (Hirst and Zeitlin, 1989a, 1991). They believe that this technological innovation has been under way since the 1950's but has become more

Table 2. The Contrasts in Production Flexibility Between Fordism and Flexible Specialisation *

Fordism	Flexible Specialisation
Mass production	Small batch production
Standardised products	Specialised, semi-customised products
Low value, low quality, high volume commodities	High value, high quality, low volume commodities
Infrequent changes in product design &/or production methods	Frequent changes in product design &/or production methods
Economies of scale	Economies of scope
Competition based on price	Competition based on design & quality
Product specific capital equipment	General purpose capital equipment based on the use of flexible technologies, i.e. CAD, CAM, FMS, CNC
Periodic innovation of both products and processes	Continuous incremental innovation of both products and processes

*This table is derived from a combination of the work of Amin (1989a, 1989b); Hirst and Zeitlin (1989a, 1989b, 1991); Jones (1989); Lane (1989); Piore and Sabel (1984); Sabel (1989).

prominent during the last two decades and takes a number of different forms, incorporating: Numerically Controlled Machines Tools (NC Tools); Computer Numerically Controlled Machine Tools (CNC Tools); Direct Numerical Control Tools (DNC Tools); Flexible Manufacturing Systems (FMS); Computer Aided Design (CAD); and Computer Aided Manufacturing (CAM) (Lane, 1989, Mitter, 1992, Jones, 1989).

Flexible Specialisation advocates (Amin, 1989a, 1989b, Hirst and Zeitlin, 1989a, 1989b, Lane, 1989, Piore and Sabel, 1984 etc.) argue that this range of new technology enables the small batch production of customised commodities at a greater speed and at a lower cost. They believe that this, together with the fact that CAM stimulates a high degree of precision and quality, as well as facilitating frequent changes in product style or design, allows firms to compete in terms of quality and design as opposed to price (Lane, 1989). Furthermore, Sabel (1989) points out that as firms adopting Flexible Specialisation tend to undergo continuous, incremental innovation procedures in terms of both products and processes they are able to constantly adapt and adjust to changing consumer demands and market conditions. Thus Wood (1989) suggests that firms adopting these new technologies no longer receive the advantages of economies of scale but instead obtain the benefits of

economies of scope (table 2).

It must, however, be pointed out that the adoption of new flexible technologies does not itself necessitate the emergence of Flexible Specialisation, a factor not always accounted for by the Institutionalists (although Sabel (1989) does begin to incorporate this into his analysis). Indeed, FMS may be pursued and operated with Fordist criteria in mind and, although flexible technologies can play a large part in the search for Flexible Specialisation, the two are not necessarily synonymous.

Having discussed the concept of flexible production, it is now necessary to examine flexible labour. Institutionalists tend to view Flexible Specialisation not only as a way of enhancing production flexibility but also as a means of achieving labour flexibility. Piore and Sabel (1984), however, tend to focus substantially less on the latter, viewing Flexible Specialisation in a reductionist way, as necessarily beneficial to labour. They justify this by arguing that Flexible Specialisation stimulates the expansion of functional flexibility, whereby workers are expected to have polyvalent skills in order to facilitate the production of constantly changing products in response to changing consumer demand. Piore and Sabel (1984) argue that a breakdown in hierarchial and adversarial management/labour relations are simultaneously encouraged. The workforce therefore benefit from enhanced skills, polyvalency, more holistic work tasks and job enrichment, whilst enjoying a greater degree of autonomy and responsibility. Based on this supposition, a common reoccurring theme throughout Piore and Sabel's work is that Flexible Specialisation is superior to Fordism, promoting a humanisation of labour.

The main and underlying criticism of Piore and Sabel's analysis of the labour flexibility sought under the Flexible Specialisation thesis is that they make a series of abstract assumptions suggesting that labour will necessarily benefit from this process, but fail to investigate the possibility that Flexible Specialisation may also have detrimental implications for workers. Moreover throughout their work they treat the workforce as a single entity, failing to acknowledge that labour is heterogeneous, particularly in terms of gender and ethnicity, and may therefore be affected by this search for flexibility in different ways. These criticisms shall not be dwelt upon here as they will be explored in detail in the following discussion of the various forms that Flexible Specialisation is believed to take (Piore and Sabel, 1984, Sabel, 1989).

As the characteristics of Flexible Specialisation have been discussed in abstract, it is now necessary to analyse the various forms that Flexible Specialisation has taken in reality.

Institutionalist authors argue that Flexible Specialisation has taken two principal forms. Piore and Sabel (1984) suggest that Flexible Specialisation has been manifested in the re-emergence of *industrial districts*, while Sabel (1989) argues that the *reorganisation of multinationals* can too be brought under the Flexible Specialisation heading.

Industrial Districts. Piore and Sabel (1984) argue that the most dramatic response to the crisis of Fordism has been the revitalisation of the nineteenth century regional economies of industrial districts. These were first referred to by Alfred Marshall when looking at the nineteenth century industrial structure of both Sheffield and Lancashire. Marshall defined industrial districts as,

"An agglomeration of specialised small and medium sized firms in the same area, which could be an alternative mode of organising to the large firm, in certain manufacturing industries, without relinquishing the advantages generally attributed to the division of labour."

(Quoted in Dei Ottati, 1986, p.95)

It is widely agreed (Amin, 1989a, Piore and Sabel, 1984, Hirst and Zeitlin, 1989b) that the most advanced forms of these 'born again' industrial districts are prevalent in the Third Italy (Terza Italia) in the areas of Emilia, Veneto, Toscana, Umbria and Marche. However, Sabel (1989) argues that there are now similar industrial structures at: Baden Wurttemberg in Germany; Silicon Valley in California; Route 128 in Boston; and at the mountain village of Sakaki in Japan.

Brusco defines these more recent industrial districts as,

"A set of companies located in a relatively small geographical area:- That the said companies work, either directly or indirectly for the same end of the market; That they share a series of values and knowledges so important that they define a cultural environment and they are linked to one another by very specific relations in a complex mix of cooperation and competition."

(Brusco, 1992b, p.1)

Brusco (1992b) argues that an Italian industrial district may vary in size and can consist of between 5,000 and 50,000 workers. It is often assumed that industrial districts comprise solely of small firms, while this is generally true, Brusco states that the size of firms within these districts can vary enormously, ranging from mini firms (less than twenty employees) through to small, medium and even large sized companies. The relative proportions of the various sized companies varies from district to district. In Carpi (Emilia Romagna), for

example, 60% of the workforce are employed by mini companies (*ibid*).

Brusco points out that companies within an industrial district tend to operate in a small geographical area and within that area external vertical integration often takes place. For example, an examination of an industrial district which manufactures shoes reveals the existence of shoe producers, but also companies involved in the advertisement of shoes, companies that produce shoe boxes, that manufacture glue, elastic bands, buttons, buckles, leathers, as well as the manufacturers of machines for producing shoes.

Thus, it is clear that industrial districts consist of a complex web of interlinked firms which the Institutionalists (Piore and Sabel, 1984, Sabel, 1989, Hirst and Zeitlin, 1989a, 1989b) argue, enables a high degree of production flexibility which is characteristic of Flexible Specialisation. Indeed, as a number of authors point out (Amin, 1989a, Best, 1990, Brusco, 1992b, Dei Ottati, 1986, Goodman, 1989), industrial districts tend to have a number of common characteristics which ensure the flexible production of high quality, design led, semi-customised commodities required under the Flexible Specialisation paradigm.

The first characteristic is outlined by Best (1990). He states that industrial districts consist of a network of interlinked, but independent companies without a hierarchical structure. All companies have a place in the system but no one particular position. Brusco (1992b) in fact identifies three categories of industrial district companies which are all interlinked:

1. Companies that manufacture the finished product and deliver it to the retailer or manufacturer. Brusco states that up to 30% of firms in industrial districts may have access to the final market.
2. Companies that carry out one or more of the production phases necessary for the completion of the finished product. Brusco refers to these as stage firms.
3. Companies that operate outside the sector to which the finished product belongs, but which work for the vertically integrated sector, i.e. a sub-contracting company which produces buttons for the clothing industry should statistically belong to the chemical sector, but actually belongs to the same vertically integrated clothing sector.

The second characteristic concerns company integration. Amin (1989a) suggests that the clusters of firms are productively integrated with each other on a subcontracting basis and

that a large proportion of the firms within industrial districts can be classed as, 'stage firms'. These firms perform just one stage of the production process, i.e. in the clothing sector some companies just weave, some just cut, some embroider and some simply iron etc. Bigarelli (1993) points out that just 5% of all the firms in the industrial district of Carpi carry out the whole of the manufacturing process from design to manufacture to sale. This is exemplified in Becantini's definition of the industrial districts as *"a territorial system of small and medium sized firms producing a group of commodities whose products are processes which can be split into different phases"* (quoted in Goodman, 1989, p.21).

These subcontracting firms then often subcontract again to even smaller family firms or to domestic outworkers. This complex system of subcontracting allows a high degree of productive flexibility; costs and risks can be spread between a number of firms and short term contracts can be adjusted to meet changes in market conditions. This is achieved by switching subcontractors when a particular type of product is required or by raising or lowering the level of subcontracting when the level of demand fluctuates (Amin, 1989a).

The third characteristic of industrial districts is a system of cooperation and competition. Industrial districts achieve productive flexibility through their supporting systems which coordinate cooperation and competition. This system stimulates a high degree of innovation, enabling a constant and continuous updating of products to match changes in consumer demand. A market for each stage of the production process exists and in each of these markets companies which perform similar processes or which produce similar products engage in fierce competition. Each company competes for a section of the market, thus triggering off innovatory procedures. However this system of competition is combined with a system of mutual cooperation, whereby companies work closely together, basing their relationships on local customs and historical ties. Within this local system a set of rules exist which are informal but nevertheless remain unviolated. So, 'swindles and frauds' are reported to be very rare (Best, 1990). Therefore, if companies are not in direct competition and an urgent order needs to be completed, companies may cooperate, thereby enhancing flexibility. This can result in a formal agreement, where both companies jointly receive the order.

Other forms of cooperative procedures, based on a high degree of consultancy between the final firms and sub-contractors, also ensure productive flexibility. Within the industrial district structure individual firms often order items without a precise design specification. In these cases the customer explains to the sub-contractor the job that the item is intended to

perform. If the job cannot be fulfilled by a standard component already on the market, the sub-contractor then works on a new design for the item (Brusco, 1992b). In this way flexibility of supply ensures that changes in consumer demand are met.

Dei Ottati (1986) argues that this coordination of competition and cooperation is governed by a mechanism referred to as *community market*. She believes that an informal code of behaviour exists within the industrial district and that this code is learnt by living and working in the district, advocating that the cooperative mechanism is largely a communal, socially acquired one, rather than a bureaucratic, enforced law. Dei Ottati provides a two fold description of these community based regulatory mechanisms, encompassing local trade associations and the family. She argues that local trade associations (of workers, artisans and employees) tend to have a dual role, they moderate the fluctuations of prices dependant upon temporary changes in demand and supply and they help to encourage and maintain the habit of cooperation. Likewise Dei Ottati states that the socialisation process within the family is vital to the economy of the industrial district. She argues that family firms tend to socialise individual workers into the world of work and more importantly ensure that the custom of cooperation is maintained.

The final feature of industrial districts concerns external economies of scale. Goodman (1989) argues that central to the effective operation of industrial districts and hence their ability to achieve flexibility, is the notion of external economies of scale. Within large corporations internal economies of scale usually prevail and are achieved *within* the firm as a whole for the benefit of all the firms' departments, i.e. a typing pool, an accounts department or a research department. However, the firms of industrial districts tend to be too small to achieve internal economies of scale and therefore external economies of scale are prevalent. These external economies of scale often arise as it is cheaper and more efficient for an external firm, agency, or sometimes an institution to carry out specialised work for all the firms within the industry. Therefore economies of scale are internal to the industrial district but external to the firm.

Goodman (1989) argues that these external economies of scale are achieved in the Italian industrial districts in two ways: by specialist firms, as occurs in Toscana; or by collective service provision. The latter is most common in the Emilian industrial districts and often involves the creation of regional institutions which provide a range of services in order to allow the companies to operate at a minimum size and hence achieve optimum productive flexibility, whilst taking advantages of economies of scale. A good illustration of this is CITER

(Centro Informazione Tessile dell' Emilia Romagna) which operates in the Emilia Romagna region of Italy. This is a textile and clothing information centre and has around five hundred company members. CITER is governed by elected member companies and provides three types of information related support: fashion, marketing, and technology (Ligabue, 1992b). Local trade associations also provide this collective service provision. In the Emilian industrial district, for example, the CNA (Confederazione Nazionale dell'Artigianato) provides collective services such as administration, bookkeeping and financial support to its artisan member firms (Bellelli, 1994).

From this Institutional analysis it is clear that industrial districts consist of a complex network of interlinked firms which enable high quality, semi-customised commodities to be rapidly produced in small batches in order to match changes in consumer demand. However, as stated previously, the Institutionalists fail to assess the implications that this form of production has on labour, simply advocating in passing, that industrial districts are necessarily beneficial to the workforce, who are highly skilled and experience the benefits of functional flexibility (Piore and Sabel 1984, Hirst and Zeitlin, 1989a, 1991). This is a fundamental drawback in the Institutional examination of industrial districts. Indeed, a detailed analysis of both the concept and practice of industrial districts reveals that the very system of subcontracting which enables a high degree of productive flexibility, has a dual effect on the labour force, benefitting some workers whilst proving detrimental to others. As Solinas (1994) points out, the jobs of the workers within the final firms and the 'stage' firms have substantially different degrees of skill content and security.

Solinas (1994) argues that the final firms are central to the production process, determining the commodities to be produced and making prototypes and samples of the finished product. The workers within these firms are expected to produce the complete product and are therefore very highly skilled. However, the final saleable commodities are only very rarely produced by these firms and, as explained previously, are collectively produced by a series of peripheral 'stage' firms instead. Each of these firms perform a specific stage of the production process and are hired and fired by the final firm according to the amount and type of the product required. The workforce of these 'stage' firms therefore perform just one, often unskilled, task, unlike those of the final firm and are often subject to numerically flexible work practices. One 'stage' firm visited in the Carpi industrial district, for example, consisted of six women trimming the edges of knitted fabric. These women complained of performing work which required very little skill and of having insecure employment contracts, being employed when the company had custom and being 'laid off' in times of low demand (Wigfield, 1994a).

A number of observers (Wood, 1989, Harvey, 1988, Walby, 1989, Jenson, 1989b) argue that this form of dualism can be likened to Atkinson's model of the Flexible Firm (Atkinson, 1984), whereby the labour market is divided into a core and periphery. They argue that functional flexibility characterises the core (which is depicted by multi-skilling, polyvalency, highly skilled tasks, full-time work, job security, promotion prospects, reskilling and retraining, the availability of pension and insurance schemes etc.) and numerical flexibility characterises the periphery (which is depicted by semi and unskilled tasks, part-time work, temporary contracts, low job security, few employment rights, little chance of training and disposable labour). Although the core/periphery model is not a new concept, the search for flexibility appears to have reinforced its position on the agenda.

As the Institutionalists fail to take account of this dual effect on the labour force they inevitably also fail to recognise that this segmentation may be determined by gender. It is often argued that the emergence of both functional and numerical flexibility may have a segmented effect on the workforce in terms of gender, with male employees enjoying the benefits of functional flexibility, while their female counterparts suffer the drawbacks of numerical flexibility (Christopherson, 1989, Jenson, 1989b, Walby, 1989). Valentini (1994) reaffirms these suspicions suggesting that within the Italian industrial districts employees performing one unskilled operation and experiencing numerical flexibility within 'stage' firms are frequently female. Solinas (1994) points to similar conclusions arguing that these 'stage' firms often subcontract again, to domestic outworkers. These outworkers are usually women who often have family responsibilities and find it easier to work at home. Like those employed in 'stage' firms these women tend to perform one, unskilled operation and are often placed at the end of the subcontracting chain, bearing the brunt of numerical flexibility.

The Reorganisation of Multinationals. Sabel (1989) develops the Flexible Specialisation thesis further, arguing that contrary to his earlier work with Piore (1984), Flexible Specialisation does not just concern the development of a network of small firms within industrial districts, but also incorporates the reorganisation of large corporations. Sabel states that during the last fifteen years, large multinational corporations have changed strategy, reorganising production on the lines of Flexible Specialisation. This, Sabel argues, is principally due to the success that industrial districts (particularly Italian ones) have enjoyed. Sabel believes that the reorganisation of large corporations varies enormously but has taken two principal forms. Some corporations have changed their production and labour organisation substantially and can be likened to the industrial districts within the Flexible Specialisation thesis (Piore and Sabel, 1984). Other companies have retained the basic

Fordist structure, but in order to respond to the crisis of mass production have adopted more flexible production methods and work patterns. Sabel argues that these latter companies cannot be classed as Flexible Specialisation but signify a continuation of mass production. He suggests that they may have faced barriers constraining their entry into a fully fledged Flexible Specialisation mode of production or may be pursuing a long term strategy intent on modifying as opposed to repudiating the past Fordist principles.

Firstly, to examine companies which have substantially changed their production and labour organisation. Sabel (1989) argues that these corporations tend to have experienced internal decentralisation within the factory. Individual companies have fragmented into a series of operating units, each of which becomes an autonomous small and medium sized enterprise (SME). Sabel argues that ideally most of the decision making authority is decentralised to these operating units and they become treated as subsidiaries. Thus the hierarchial structure and the traditional divisions between conception and execution should become more blurred. Sabel states that each operating unit forms the corporation's unique representative in a distinctive market and operates on a subcontracting basis (similar to the small firms within industrial districts). Moreover Sabel suggests that this flexibility is enhanced further as production within each operating unit is reorganised on a system of modular manufacturing, based on small groups (or team working). Consequently optimum flexibility is achieved and the changing needs of the market are met.

Sabel (1989) advocates that this internal decentralisation within large corporations and subsequent adoption of autonomous teams is occurring in varying degrees of intensity throughout the western world, but is predominantly occurring in Germany. However he argues that Montedison at Ferrara, in Italy is perhaps the closest manifestation of this ideal model. Montedison was a large, single, chemical plant which sub-divided into a complex of five interlinked, but independent companies. Four of the companies continued to carry out the manufacturing processes, whilst the fifth now undertakes service provision to the other four, carrying out activities such as, technical maintenance of equipment, planning new facilities, administrative duties, collective bargaining on behalf of trade unions etc. Production work is organised on a modular, team working basis and as a result the workforce benefit from multi-skilling and a dissolution of the rigid management hierarchy, with the distinction between management and shop floor workers becoming blurred. Sabel (1989) argues that the whole system at Ferrara is a replica of the interlinked firms in industrial districts, the main difference being that the service company rather than the municipality or employers associations provides the production units with whatever they cannot provide themselves.

Central to Sabel's decentralisation model is the notion that production is reorganised around a system of modular manufacturing based on team working (Sabel, 1989). This has profound implications for the workforce and therefore requires more detailed discussion. Team working is not an homogenous term, in fact it has two main origins: from experiments in Sweden in the 1970's at the Volvo plant in Kalmar, which were based on the Quality of Working Life movement (QWL) (Miller and Rice, 1967); and from the Japanese experiments during the Toyota revolution of the 1950's and 1960's, which were centred on Total Quality Management (TQM) (Buchanan, 1994). Sabel (1989) suggests that the type of team working that is adopted by the firms mentioned here is a variant of the Swedish prototype.

Sabel believes that team working is adopted by these decentralised operating units as a quick response manufacturing system. Under team working the traditional production line is replaced by a series of modules which are typically, but not necessarily, 'U' shaped (NEDO, 1991b). A series of teams are established, each of which works on one of these modules and contains a group of operatives who work collectively to complete the final product. As the final product is produced by a small team, rather than the whole factory (as under the old Fordist system), production becomes more flexible. Indeed team working enables much of the flexibility required under the Flexible Specialisation thesis to be met. Small batches are necessarily produced by each team, and changes in consumer demand can be rapidly met by changing a team's production requirements.

Each team working module contains a number of workstations which are not necessarily the same, some are specialised or have special features. There are usually more workstations in a module than there are operatives in the team working on it. Consequently operatives can move from one workstation to another as the work builds up and falls at different points in the module, hence achieving a degree of flexibility within the team. This leads to the requirement of team members who are skilled in more than one operation and who can make some decisions for themselves about how best to utilise the skills of the team (*ibid*). Cannell (1991a) points out that in an ideal team, optimum flexibility is achieved by every member being able to complete every job within the group, enabling absence to be covered by team members. Sabel (1989) therefore argues that workers are no longer skilled in just one operation under team working but become multi-skilled.

In order to encourage optimum team flexibility and motivation, changes to the workforce payment systems are often incorporated into the new system of production. The traditional piecework system based on individual pay incentives is often replaced by new methods of

payment based upon fixed wages, with group bonuses for either productivity or skill levels. These both act as incentives for team members to become as multi-skilled as possible and enable the achievement of team flexibility. Bonuses paid in relation to overall team productivity require operatives to gain as many skills as possible, thus speeding up the overall performance of the team. Similarly bonuses paid in relation to skill levels mean that individual team members are encouraged to learn a greater number of tasks.

Sabel (1989) additionally points out that, in order to become as flexible as possible, not only are the decentralised operating units autonomous but the small teams within each operating unit are autonomous too. He goes on, arguing that this stimulates a substantial change in labour organisation, which has wide reaching effects on the job descriptions of personnel at all levels of the employment hierarchy and ultimately flattens existing hierarchial structures. Functional flexibility and job enrichment are promoted which are necessarily beneficial to labour. This is reaffirmed by Tyler's study of the introduction of team working in the clothing industry (1994). In this publication he outlines four levels of company employees affected by the introduction of team working: operatives; senior management; middle management; and supervisors.

The first group of employees affected by the implementation of team working are operatives. As the small groups (or teams) are expected to be autonomous and self functioning, the operatives within them are encouraged to develop a range of skills. Tyler (1994) argues that they are not only expected to be multi-skilled, performing a range of operations but are also required to develop higher level skills of problem solving, decision making, the organisation of work-flow, line balancing, quality, work study, conducting team meetings, public speaking etc. Sabel (1989) suggests that this reorganisation is beneficial to operatives. As Buchanan (1994) points out, it reduces the division between conception and execution, enables workers to avoid the tyranny of fixed work tasks experienced under mass production, provides extended choice and freedom in the daily working routine and offers an opportunity for mental and physical relaxation through job variety.

The second group of individuals to be affected by the implementation of team working are senior managers. As previously stated, Sabel (1989) argues that this reorganisation of corporations on the basis of team working flattens the hierarchial structure of the organisation, thus changing employer/employee relations. This is reaffirmed again by Tyler (1994) who in an examination of the implementation of team working in the clothing industry suggests that instead of management dictating to the workforce, a two way communication

between management and workers is promoted. He argues that as a consequence team members benefit from being able to contribute significantly to the decision making process.

Middle managers are the third group of employees affected by the introduction of team working. Tyler (1994) argues that as operatives within teams become problem solvers this responsibility is withdrawn from middle managers who instead provide support to individual teams.

Finally, supervisors are also affected when team working is introduced. Sabel (1989) argues that as the separation of conception from execution are reconfigured, the role of the supervisor changes. NEDO (1991b) point out that the number of supervisors required tends to fall when team working is implemented, with activities previously the responsibility of supervisors such as line balancing and work-flow management being transferred to the operatives within the teams. Thus the ratio of supervisors to team workers often falls. Sabel (1989) argues that the supervisors role changes substantially, they can no longer be seen as policing but as facilitating, working with the operatives to solve common problems. As Carrere and Little (1989) point out, under team working the title of supervisors is more accurately represented by 'coach' or 'consultant'.

According to Sabel (1989), as this work reorganisation substantially changes the employment tasks of both employees and employers alike, extensive training is required at all levels of the employment hierarchy. This is, in fact, widely recognised in the team working literature (NEDO, 1991a, 1991b, Grayson, 1990, Institute of Development Studies, 1992). As Tyler's examination of the introduction of team working in the clothing industry reveals, operatives require training at both a technical level (for wider machining skills) and at a social level (for decision-making tasks), whilst both management and supervisors require training in order to enable and encourage them to adapt to the cultural changes involved in devolving the power and responsibility they have traditionally held.

Although Sabel (1989) recognises the importance of widespread training in order for the workforce to benefit from the multi-skilling and the greater autonomy involved in the operation of team working, in typical Institutional fashion he fails to explore the drawbacks experienced by the workforce when there is a lack of sufficient training. The absence of such a discussion is a major weakness in Sabel's analysis.

Technical training directed towards operatives to enable them to become multi-skilled is

usually provided. Even if formal training is not provided by the corporation, operatives will find themselves cross training each other (NEDO, 1991b), mainly out of necessity. If they are not able to perform a range of operations, team performance will suffer and earnings will be adversely affected. However, wider social training giving operatives the ability to perform the more autonomous tasks (i.e. decision making, problem solving) and managerial and supervisory training geared towards encouraging the devolution of the power and autonomy necessary to enable the operatives to perform these tasks is not always available (Buchanan, 1994). Management are understandably reluctant to initiate such training strategies which inevitably culminate in a substantial cultural change, whereby power is transferred away from themselves to their workforce. In these circumstances Wood (1986) argues that team working does not benefit the workforce but is, on the contrary, problematic. Although team members are expected to perform a wider range of operative tasks (i.e. of a similar level) they are not encouraged or allowed to perform higher status tasks such as decision making and problem solving. Hence rather than experience job enrichment, Wood argues that operatives experience job enlargement, suffering the drawbacks of labour intensification.

Wood (1986) takes this analysis one stage further, arguing that both job enrichment and job enlargement may be experienced at the same time in the same factory, thus having a dual effect on the labour force. As some workers are trained and allowed to perform higher order tasks involving a greater degree of responsibility, others merely perform a wider range of similar status tasks. Wood argues that this dual effect may be determined by gender, with male workers experiencing job enrichment, whilst females experience job enlargement. Again this highlights a major drawback in Sabel's analysis, not only does he fail to discuss the possibility of the prevalence of job enlargement as well as job enrichment but he fails to discuss the gender implications of such a scenario.

The second group of companies which fall into *the reorganisation of multinationals* category are those which attempt to achieve flexibility whilst retaining elements of their existing model of mass production. Sabel (1989) argues that some companies adopt flexible production methods and work patterns in order to respond to the crisis of mass production, but instead of completely reorganising in terms of both production and labour, they attempt to achieve flexibility whilst retaining their basic Fordist structure. He suggests that these companies adopt a Japanese variant of the reorganisation of multinational corporations strategy and represent a continuation of mass production rather than a move to Flexible Specialisation.

Sabel argues that these corporations aim to increase flexibility without completely abandoning the distinction between conception and execution. Like the decentralised model previously discussed, a large corporation fragments into a series of operating units which are consolidated according to their product line. However, under this model these operating units are not awarded a greater degree of autonomy, and are still regarded as divisions of the parent company, and not as independent firms. Sabel suggests that flexibility is achieved within this model by Just In Time (JIT) delivery systems which originally developed in the Japanese Toyota plants. JIT being defined as a *"philosophy directed towards the elimination of waste, where waste is anything which adds cost, but not value to a product"* (Turnbull, 1988, p. 8)

Within a system of JIT, raw materials and parts are both produced and delivered just in time for the next stage of the production process. Ideally defect free parts will flow through the manufacturing process, thus often JIT encompasses Total Quality Control (TQC). JIT is a highly technical system adopting multi-purpose, easily programmable machinery in order to facilitate small batch production. A Kanban system carefully monitors the rate of production to ensure that only the quantity of parts necessary for the completion of the next stage of production are produced. Within Sabel's Japanese variant of the reorganisation of multinational corporations strategy, the decentralised operating units synchronise their production sequence to deliver their products to each other on a JIT basis. These inter firm activities then extend backwards to an intra firm level. Within each of the fragmented operating units, the factory layout is reorganised on the basis of team working (Turnbull, 1987). Sabel (1989) suggests that within this model the type of team working that is adopted is a variant of the Japanese rather than the previously discussed Swedish prototype.

The Japanese system of team work was first developed by the Toyota car factory during the 1950's and 1960's and, like the Swedish model of team working, is based on several multi-skilled operatives working in teams on a range of workstations, often on a 'U' shaped module. Like the Swedish model, workers are expected to perform the full range of tasks on the module so that they can shift jobs easily, hence achieving optimum flexibility (Sabel, 1989). However, the emphasis of the Japanese model is not on increasing skill levels in order to achieve flexibility but on introducing new technology to achieve greater flexibility. Machines and workstations are introduced which deliberately reduce the skill content of individual operations thereby making it easier for operatives to perform a wider range of tasks at a faster rate. Sabel (1989) therefore stresses that operatives under this model experience multi-tasking and not multi-skilling. He further points out that increasing worker

knowledge and autonomy is not a characteristic of the Japanese model of team working, with supervisors and managers retaining overall power. Thus, just as the operating units are not autonomous, neither are the teams operating within them. Buchanan therefore rightly points out that the Japanese model of team working means something quite different from what it does in Sweden.

"The team concept is not intended to increase workers autonomy but to help them to find out the problems in the production line so that no defective goods will be produced. In the US, workers tend to take participation as having a voice in all kinds of things that in Japan are determined by management and engineers."

(Buchanan, 1994, p.220)

So whilst the Swedish variant of team working is concerned with increasing worker control, the Japanese model is concerned with increasing management control (Wood, 1989). Sabel (1989) therefore argues that this Japanese model of the reorganisation of multinational corporations is detrimental to the workforce. It leads to job enlargement, intensifies work pressures, increases surveillance of shop floor workers and it reduces individual discretion with respect to working methods.

The main criticism of this aspect of Sabel's work concerns his reluctance to incorporate this form of reorganisation into the Flexible Specialisation thesis. This relates back to earlier criticisms of Sabel's work and is connected to the underlying weakness in the wider Institutional theory, namely that Flexible Specialisation is viewed as an ideal type which necessarily benefits labour, and that the possibility that Flexible Specialisation can have both beneficial and detrimental implications for labour is not investigated. Institutionalists believe that any system of production, even if it involves a search for greater production and labour flexibility cannot be classed as Flexible Specialisation, unless it is deemed advantageous to labour.

The Institutionalists therefore argue that two predominant forms of Flexible Specialisation have developed recently: industrial districts; and the reorganisation of multinational corporations. As we have seen, the dominance of each of these tends to vary with the locality, indeed it is widely argued that the extent to which Flexible Specialisation is adopted and the form which it takes, is dependant upon the degree to which mass production has previously been dominant. Flexible Specialisation has been more likely to develop in areas where mass production has been less prevalent (for example, Germany and Italy) and where it has continued to coexist alongside craft production (Piore and Sabel, 1984, Sabel, 1989).

However, the growth of Flexible Specialisation cannot just be attributed to the absence of mass production, but can be linked to the cultural and historical identity of the region. The emergence of industrial districts in the Third Italy has been explained by a range of historical factors. It is argued that the tradition of share cropping (metayage) and the importance of the extended family has provided the region with a culture of high mutual trust relations, which has the effect of facilitating a balance between competition and cooperation and producing a population which is experienced in the day to day management of small artisan workshops, both of which are essential factors in the development of a successful industrial district (Brusco, 1986, Sabel, 1989). Added to this is the willingness of communist-controlled local and regional authorities to intervene and provide a range of infrastructure including, common services, technical support, research and development and specific technical training and education (Piore and Sabel, 1984, Brusco, 1986). Thus the Third Italy is viewed as possessing the essential prerequisites for the development of industrial districts.

Similarly it is argued that specific cultural and historical factors in Germany have enacted to support strategies of fragmentation and the adoption of flexible production methods. Lane (1988) points out that the German industry during the 1950's to 1970's was less influenced by both Fordist and Taylorist techniques than were other countries. Consequently the deskilling process experienced in both Britain and the USA had substantially less impact in Germany and therefore the workforce retained their polyvalent skills. This provided the foundations for the fragmentation of large corporations into autonomous operating units and the development of more flexible methods of production such as team working, based on both a devolution of responsibility and multi-skilling (Lane, 1988).

Likewise Sabel (1989) argues that Japan has experienced substantially different historical and political developments, whereby mass Taylorist techniques have been taken to their extreme and management culture has been based on maintaining tight control over the workforce. Hence the search for flexibility has been centred on a modification rather than repudiation of the mass production principles. However, Sabel suggests that the Japanese corporations which first adopted this model are slowly beginning to change towards the decentralised model, which is evident in Germany, with some large corporations in Japan laying off their own managers and encouraging them to form legally autonomous firms with the capacity for innovative production.

2.3.2 Regulationists and Post-Fordism

During recent years the focus of attention in Marxist discussion has shifted away from the issue of capitalism in crisis, to the question of capital restructuring. The argument that Fordism has suffered a crisis and that we are now experiencing a more flexible regime of accumulation, together with a corresponding mode of regulation has gained widespread acceptance amongst the Regulationist School (Aglietta, 1979, Boyer, 1988a, Lipietz, 1987, Leborgne and Lipietz, 1988, 1990). The Regulationists tend to refer to the replacement of Fordism as a new regime of accumulation rather than using the Institutional term of a new technological paradigm. This is primarily because the former allows for an analysis of not only technological changes in production organisation but of wider social relations, including the implications for labour relations. However, the Regulationist analysis of this new regime of accumulation still appears at an early stage, being far less developed than their analysis of the rise and decline of Fordism and more importantly than the Institutional theory of Flexible Specialisation.

The Regulationist theory maintains a determinacy view of economic development, arguing that the choice of a new regime of accumulation is constrained by the principles of both the capitalist mode of production and the mode of regulation. However within this framework, as the Regulationist theory has progressed, various commentators have emerged, highlighting a range of new regimes of accumulation. Aglietta (1979) advocates that the replacement for Fordism is inevitably Neo-Fordism, based on an extension of the basic Fordist principles. He states that "*capitalism can escape from its contemporary organic crisis only by generating a new cohesion, a Neo-Fordism*" (Aglietta, 1979, p.385).

More recently other Regulationists, while maintaining a determinacy view of economic restructuring, have argued that a number of replacements for Fordism are possible. This is particularly true of the more recent work of Lipietz (1987) and Leborgne and Lipietz (1988, 1990), who argue that Post-Fordism (which encompasses a range of alternative regimes of accumulation) can be viewed as the Fordist successor. The work of Leborgne and Lipietz is at a far more advanced stage of development and as it offers a range of possible alternatives to Fordism is a step forward for the theory of Regulation.

In order to explore the Regulationist view of the Fordist successor in detail, it is important to analyse both the new flexible regime of accumulation and the corresponding mode of regulation set out by the Regulationist authors (Aglietta, 1979, Harvey, 1989, Leborgne and Lipietz, 1988, 1990, Lipietz, 1987 amongst others).

2.3.2a A Flexible Regime of Accumulation

Widespread agreement that a more flexible regime of accumulation has recently emerged appears to exist within the Regulationist school. Although the Regulationists have not provided one single comprehensive model of restructuring, the various models of Neo and Post-Fordism do have a number of common elements. The most crucial one is that any new flexible regime of accumulation is characterised by a search for both production and labour flexibility, hence revealing similarities with the Institutionalist model of Flexible Specialisation.

Firstly, to look at flexible production. The Regulationists do not focus a great deal of attention on production flexibility alone, but concentrate on the relationship between flexible production and labour relations, incorporating wider social relations into their analysis. As a consequence their analysis of the production flexibility sought under the new regime of accumulation tends not to be as comprehensive as that provided by Institutionalist such as Piore and Sabel (1984) and Hirst and Zeitlin (1989a).

Leborgne and Lipietz (1988) provide perhaps the most developed Regulationist argument in this context, advocating that since the decline of Fordism new forms of organisational methods are being explored. They agree with the Institutionalist that a technical revolution is at the centre of the emergence of flexible production and that the main feature of this revolution is the development of micro-processes and electronic interfaces such as FMS, CNC, CAM, CAD and so on.

Lipietz (1987, 1992a) then goes on to explain that these new flexible technologies facilitate the small batch production of constantly changing commodities, allowing firms to receive the benefits of economies of scope as opposed to economies of scale. Other Regulationists, such as Harvey (1988), Tickell and Peck (1992), Moulaert and Swyngedouw (1989), highlight additional elements involved in the flexible production process, such as the production of semi-customised goods, based on a high degree of quality and design, alongside the constant adaptation and innovation of products and processes. These characteristics are very similar to those advocated by the Institutionalist (see table 2, page 22), but they tend to appear in a less developed and less advanced form, thus highlighting a weakness in the Regulationist theory and a requirement for more analysis in this area.

Secondly, to explore flexible labour. Regulationists advocate that any new flexible regime of accumulation is characterised by a search for labour flexibility. This issue is central to the Regulationist analysis of restructuring and therefore requires a detailed examination. As previously stated, the Regulationist School has a number of strands within it. This is again

highlighted in this context, with earlier commentators such as Aglietta (1979) advocating that any new flexible regime of accumulation will necessarily be detrimental to labour, while later observers (Lipietz, 1987, Leborgne and Lipietz, 1988, 1990) envisage a range of possible effects on the labour force.

Aglietta (1979) takes the opposite view to the Institutionalists arguing that any new flexible regime of accumulation is necessarily detrimental to labour, viewing Neo-Fordism as a simple extension of the basic principles of Fordism, utilising new flexible technologies as a way of further exploiting labour via both labour intensification and an extension of the deskilling process. Unlike Piore and Sabel (1984), Aglietta does not accept the possibility of labour flexibility deriving benefits to the workforce. Aglietta does concede that the technological innovation which accompanies Neo-Fordism may benefit the workforce through a reduction of the number of monotonous, purely operative tasks, but he argues that this will not occur under the capitalist mode of production and will only prevail if capitalism is eradicated (Aglietta, 1979).

The disparities between the work of Aglietta (1979) and the Institutionalists (Piore and Sabel, 1984, Sabel, 1989) are perhaps most clear when examining their respective analysis of the development of team working. Whilst Sabel (1989) argues that the Swedish model of team working is necessarily beneficial to labour, Aglietta believes that all forms of team working are detrimental to labour, having few positive implications. His justification is that the concept of multi-skilling which underpins group working is damaging to labour, promoting job enlargement rather than job enrichment. He suggests that multi-skilling is *"widened work which is just as empty as before and as completely reduced to pure duration as was earlier fragmented work"* (Aglietta, 1979, p.129). Aglietta therefore views the recent euphoria about the recomposition of tasks as merely a *"lot of shameless propaganda about the liberation of man in work"* (Aglietta, 1979, p.122).

Harvey (1988) similarly argues that his model of 'Flexible Accumulation' has an adverse effect on labour, stimulating enhanced labour control. Harvey suggests that Flexible Accumulation is detrimental to labour as it focuses on the utilisation of labour in areas which have not previously been industrialised, such as Silicon Glen in Scotland. These regions tend to have non-union traditions and therefore employers are able to recruit and exploit 'green' workers, the majority of whom are female.

The work of these Regulationists is valuable as it provides an alternative to Piore and

Sabel's theory (1984) that labour flexibility necessarily derives benefits to the workforce. However, like the Institutionalists, these commentators fail to investigate the possibility that the new flexible regime of accumulation can be both beneficial and detrimental to labour. Leborgne and Lipietz (1988, 1990) have addressed these inadequacies, arguing that two alternative types of labour organisation can emerge, one of which is beneficial and one which is detrimental. In general they refer to these new regimes of accumulation as Post-Fordist but on occasions use the term 'After-Fordism', a phrase which Peck and Tickell (1994) and Tickell and Peck (1995) have also started to use. Peck and Tickell (1994), and Tickell and Peck (1995) argue that, as a single solution to the crisis of Fordism has yet to emerge, the term 'After-Fordism' should be utilised. However, the introduction of a new title creates confusion, particularly if it is used inconsistently. Leborgne and Lipietz (1988, 1990) acknowledge that there has not been one single response to the crisis of Fordism but continue, in the main, to use the term Post-Fordism. Therefore throughout this thesis their work shall be referred to as Post-Fordist. In any case too much attention should not be paid to the title, it is the content of the discussion which is important.

The first alternative outlined by Leborgne and Lipietz (1988, 1990) involves a polarisation of tasks and is basically an extension of the Fordist principles, with a separation of conception and execution (i.e. manual and mental work). Workers in a central planning bureau perform complex mental activities, whilst those on the shop floor carry out simple, unskilled, operative tasks. Leborgne and Lipietz argue that the labour force is organised by direct control, a concept derived from Friedman (1977), whereby the scope of labour power is limited through coercive threats, close supervision and by a reduction in individual responsibility.

The second alternative involves mobilising in real time the involvement of direct operators. The goal here is to *"reconnect what Taylorism had disconnected, the manual and intellectual aspects of labour"* (Leborgne and Lipietz, 1988, p. 269). Under this alternative, Leborgne and Lipietz (1990) argue that multi-skilled, semi-autonomous work groups are developed, therefore enhancing worker involvement. Labour is organised by responsible autonomy, whereby workers are encouraged to adapt to situations by receiving higher status jobs with more authority and responsibility (Friedman, 1977). This model is therefore similar to the one of Flexible Specialisation advocated by the Institutionalists. Leborgne and Lipietz argue that under this second option, worker involvement is enhanced and that this involvement can take a number of forms. Firstly it may be individually negotiated (I in figure 1), i.e. by pay bonuses or career opportunities. Secondly it may be negotiated on a firm by firm basis between management and unions (F in figure 1), i.e. collective bargaining. A third type of

involvement may take place at a sectoral level and a fourth at a societal level, whereby unions of workers negotiate on a regional or national basis (Leborgne and Lipietz, 1990).

However Leborgne and Lipietz (1988) state that the impact on labour is further complicated by the wage contract, which under Post-Fordism can be either rigid or flexible. Under the rigid wage contract workers tend to benefit from the job security and stable wages provided by the Fordist system of production. However Leborgne and Lipietz (1990) argue that a more flexible wage contract may emerge under Post-Fordism, whereby numerical flexibility prevails. Workers with such a wage contract may experience substantially less employment rights and may form part of a disposable labour force, being hired and fired at the will of the employer.

From this discussion of the range of effects of Post-Fordism on both labour and wage relations, Leborgne and Lipietz (1990) derive a list of possible scenarios which could replace the old Fordist regime of accumulation. These can be seen in figure 1 and are described below.

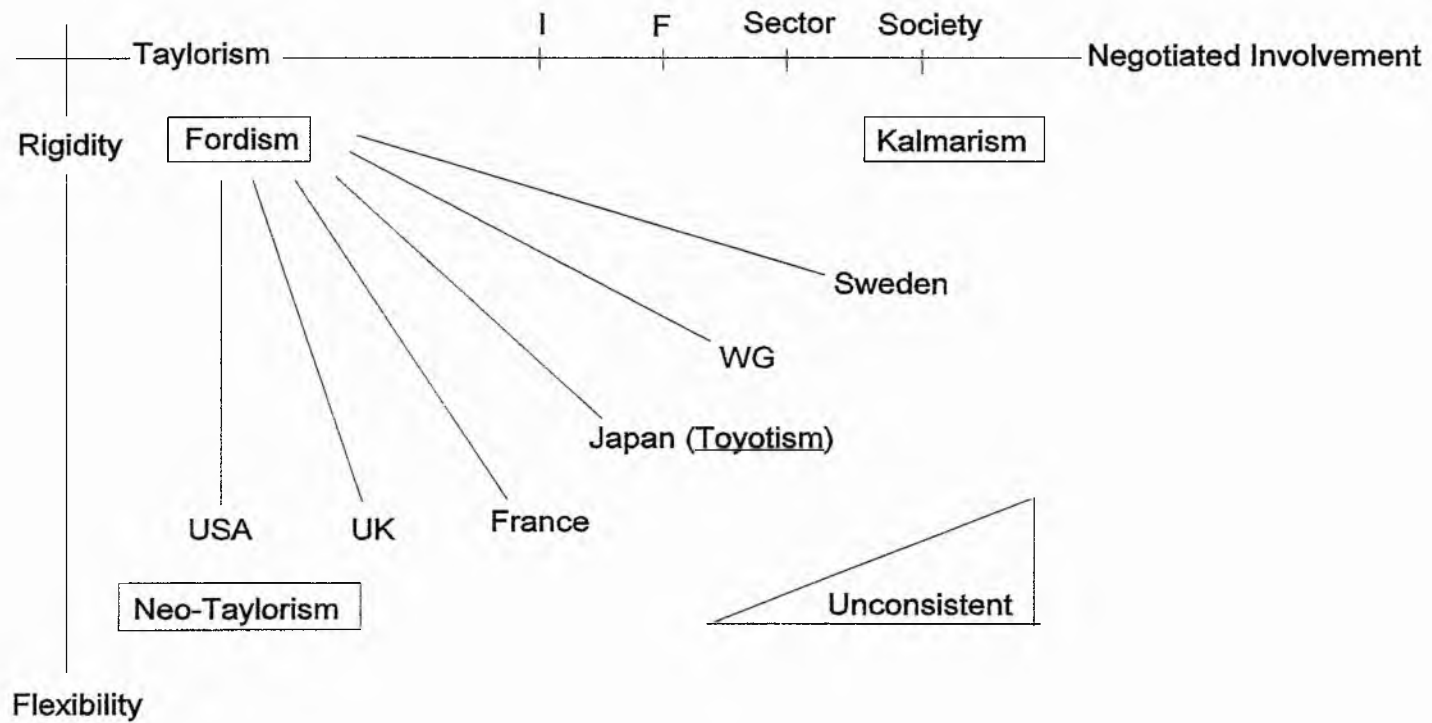
The first model involves a polarisation of skills via automation, plus rigidity in the wage contract. Here workers are governed by direct control. This is basically a continuation of **Fordism** and Leborgne and Lipietz argue that this was the main tendency in both Europe and the USA during the 1970's (see figure 1).

The second model involves a polarisation of skills via automation, plus a more flexible wage contract. This allows companies to utilise a numerically flexible workforce, expanding labour in times of high demand and laying off employees when demand falls. Here workers are again governed by direct control. Leborgne and Lipietz refer to this scenario as **Neo-Taylorism** and view it as a further extension of the Fordist system of production and Taylorist work ethic (figure 1). Leborgne and Lipietz state that the adoption of this model would lead to an unsatisfactory social pattern, with a polarisation of skill and dualisation of both labour markets and society. However they do concede that the emergence of Neo-Taylorism is a possibility.

The third model concerns functional flexibility. It involves a move to more worker involvement, with workers enjoying the benefits of semi-autonomous group work, multi-skilling and job enrichment. Workers are governed by responsible autonomy. This worker involvement is negotiated at a societal level and tends to exist alongside a rigid wage

Figure 1

Post-Fordism



Source: Leborgne and Lipietz (1990)

contract. Leborgne and Lipietz clearly favour this model and argue that the closest example to it exists in Sweden (figure 1). Indeed they refer to this scenario as *Kalmarism* in honour of the first car factory reorganised on the 'involvement' principle in Kalmar, Sweden in 1974.

The fourth and final scenario is based on intra firm level negotiated involvement and allows for the dualistic coexistence of both Kalmarism and Neo-Taylorism. Alongside the functional flexibility of increased worker involvement, multi-skilling, job enrichment and responsible autonomy based on a rigid wage contract, exists a situation whereby workers have little involvement and responsibility, being governed by the principles of direct control. These workers tend to experience the drawbacks of numerical flexibility via the presence of a flexible wage contract. Leborgne and Lipietz argue that this model leads to the emergence of a dualistic labour market (i.e. according to gender) and state that a similar situation is occurring in Japan (figure 1). As a consequence they refer to this model as *Toyotism*.

Leborgne and Lipietz therefore argue that a range of the models could possibly replace Fordism. They state that at present no one hegemonic model has developed and that in reality what has occurred in both Japan and Germany in the 1980's has been a mix of all these models. The fact that Leborgne and Lipietz (1988, 1990) consider the spatial aspects of economic restructuring is important in this context. They acknowledge that the regime of accumulation occurs at different scales and times in different geographical areas, a factor which other Regulationist explanations of the restructuring process should take into account, as recent writers such as Peck and Tickell (1994), Tickell and Peck (1995) and Painter and Goodwin (1995) point out.

Further, Leborgne and Lipietz argue that a range of additional scenarios in any position on the diagram in figure 1 are possible. This perspective is a step forward for Regulationist theory, being far more advanced than the work of other Regulationists such as Aglietta (1979), who advocate only one possible outcome. Leborgne and Lipietz point to one particular point of exception on the diagram, the triangle of inconsistency. They argue that the scenario in this triangle is not a possibility as it would be 'foolish' to believe that unions involved in societal level negotiations would accept a situation of numerical flexibility via a flexible wage contract.

The work of Leborgne and Lipietz has a further advantage, not just over their fellow Regulationists, but also over the Institutional School. This primarily concerns the fact that Leborgne and Lipietz examine the implications of any new flexible regime of accumulation

on labour and accept that the outcome may vary, being beneficial via Kalmarism or detrimental via the adoption of the Neo-Taylorist regime.

There are, however, a number of criticisms of the work of Leborgne and Lipietz (1988, 1990). Firstly, although they recognise that Post-Fordism can lead to two alternative types of labour organisation, Kalmarism (whereby workers either benefit from functional flexibility experiencing multi-skilling and job enrichment, enjoying a greater degree of responsibility) or Neo-Taylorism (whereby workers suffer the drawbacks of numerical flexibility, performing one, often unskilled operation and being subject to flexible working arrangements). Leborgne and Lipietz (1990) fail to recognise that another type of labour organisation may prevail, based on job enlargement, whereby workers perform a wider range of similar status tasks but are restricted from performing higher status tasks requiring a greater level of responsibility. As has already been pointed out, this scenario may occur in two key circumstances. Firstly, when the Swedish model of team working (what Leborgne and Lipietz refer to as Kalmarism) is introduced, but the wider workplace cultural changes (based on training provision) required to stimulate a dissolution of responsibility are absent (Wood, 1986). Secondly, when the Japanese variant of team working and accompanying manufacturing systems of JIT are in operation, which are based on the introduction of new technologies to enable operatives to perform a wider range of deskilled tasks, at a faster rate (Buchanan, 1994). Leborgne and Lipietz therefore need to incorporate this alternative form of work organisation (job enlargement) into their analysis, drawing upon the work of various authors such as Wood (1986, 1989), Buchanan (1994) and of other Regulationists such as Aglietta (1979).

A second criticism is that the range of possible replacements for Fordism that are provided by Leborgne and Lipietz (1988, 1990) (Neo-Taylorism, Kalmarism and Toyotism) are not explored in any substantial detail. The implications for labour relations are discussed but not in any great depth, whilst the production changes experienced under these models are virtually ignored.

Thirdly and linked to the previous point, Leborgne and Lipietz present the various choices of Fordist replacements in graphical form (figure 1), but simply place various countries on the diagram in a range of positions, without at any stage providing supporting empirical evidence that these models are emerging in reality. Sweden, for example, is placed close to the Kalmarism regime, yet there is little provision of evidence that it deserves to be so placed.

Fourthly, the industrial districts of the third Italy which dominate much of the economic restructuring literature (both Regulationist and institutionalist) are totally ignored with no attempt to place them on the Post-Fordist diagram.

The final, and in this context, perhaps most important criticism, is that although Leborgne and Lipietz (1988, 1990) redress the Institutional problem of failing to examine, in detail, the implications of the search for flexibility on labour, they do not extend this examination to a detailed analysis of the possible implications for gender relations. There are many occasions where Leborgne and Lipietz mention gender, but they all too often fail to elaborate. Perhaps the best example of this is their statement (without any explanation or elaboration) that the dualistic coexistence of Kalmarism and Neo-Taylorism in the form of Toyotism may be determined by gender (Leborgne and Lipietz, 1990, p. 13).

2.3.2b A Flexible Mode of Regulation

According to the basic principles of the Regulationist theory, any new regime of accumulation is accompanied by a corresponding mode of regulation. However as Tickell and Peck (1992, 1995) and Painter and Goodwin (1995) rightly point out, little research has been undertaken in this area. The absence of such a discussion is perhaps surprising, given the fact that the core of the Regulationist theory is to gain an understanding of how regulatory and institutional forms arise in certain localities and how these forms relate to and are influenced by new patterns of accumulation (Moulaert and Swyngedouw, 1989). Even Leborgne and Lipietz (1990), who offer perhaps the most developed analysis of the possible replacements for the Fordist regime, have failed to examine explicitly the corresponding modes of regulation, a factor which they do however concede.

The majority of the limited research carried out in connection with the new mode of regulation tends to concern the changing role of the state. Most commentators examining this issue argue that the move from a Fordist to a Post-Fordist regime of accumulation has been accompanied by a decline in the Keynesian welfare state. This is primarily explained by the fact that the small batch, semi-customised production of constantly changing products no longer requires the mass consumption which was made possible by this mode of regulation. Jessop (1993) argues that the Schumpeterian Welfare State (SWS) has emerged as the new regulatory body of Post-Fordism which is based on Neo-liberalism and has two distinctive features. The first feature centres on innovation driven structural competitiveness, a factor which Jessop argues is becoming central to the successful performance of the economic functions of the contemporary capitalist state. Whilst the second feature concerns a major reorientation of social policy away from redistributive

concerns based on expanding welfare rights to more productive and cost saving concerns in an open economy.

This second point is also noted by Tickell and Peck (1992) and Moulaert and Swyngedouw (1989). These commentators agree that in recent years the welfare state has disintegrated and as a consequence the provision of social security payments have diminished. More recently, Bakshi *et al.* (1995) have developed work in this area further, suggesting that there have been three broad changes in the British welfare state, each of which have implications for gender and race relations. Firstly, they suggest that welfare discrimination and immigration controls have intensified, thereby strengthening the oppression of women and black people. Secondly, they suggest that new modes of regulation have developed in order to help secure the conditions for expanded economic growth. They cite the reorientation of vocational training within a workfare context as an example of this. Thirdly, and perhaps most importantly, they suggest that there have been attempts to remove forms of regulation which have been associated with the Fordist crisis, such as state intervention, and that this has led to increasing privatisation and commodification of welfare.

This latter point is highlighted in Britain, which has, since 1979 under consecutive Conservative administrations, experienced a major deregulation of social security laws. Indeed the number of people eligible for unemployment benefit, income support and housing benefit has been dramatically reduced in the last few years. As a consequence incomes have become polarised, with the top one fifth of UK households experiencing a rise in the proportion of total disposable income between 1976 and 1986, while the bottom one fifth experienced a fall in the proportion of total disposable income during the same period (McDowell, 1991). Hence the gap between the 'haves' and 'have nots' has become wider than ever. Moulaert and Swyngedouw (1989) therefore argue that the regulation of the welfare state is being replaced by an entrepreneurial state for the well off and by a soup kitchen state for those caught in the doldrums of persistent unemployment. The result is the emergence of a more diversified, frequently changing demand, for semi-customised commodities from those on high incomes. While those on substantially lower incomes demand low cost, low quality commodities (Tickell and Peck, 1992), perhaps explaining why mass production has continued to exist alongside this more flexible mode of production.

Bakshi *et al.* (1995) point out the welfare state itself led to gender inequalities in society, on the one hand treating women as a cheap source of labour, providing low paid, part-time work for predominantly female employees, and on the other hand discriminating against women

as users of the service. However, they recognise that its disintegration may be even more damaging for women as long as they have the main responsibility for caring and domestic tasks. The removal or privatisation of welfare effectively means that the responsibility for provision of social services such as childcare, care for the elderly etc. are removed from the state and directed at the family and therefore ultimately at women. Consequently McDowell (1991) argues that some women may be forced out of paid employment and back into the home, while others face the double burden of going out to work and taking on board the responsibility for the care of dependants.

Despite the recognition of these changes in the mode of regulation, particularly in the welfare state, recent commentators (Bakshi *et al.*, 1995, Painter and Goodwin, 1995, Peck and Tickell, 1994, and Tickell and Peck, 1995) have argued that these changes are not sufficient to signify a new Post-Fordist mode of regulation but indicate that we are now experiencing a stage of transition in the mode of regulation and that a new one has not actually formed at present. Instead they suggest that the welfare state is in 'limbo' (Bakshi *et al.*, 1995, p.1552). Moreover, they argue that the nature of the mode of regulation varies geographically, which is a sensible suggestion given previous evidence that the regime of accumulation varies by locality (Leborgne and Lipietz, 1988, 1990). Peck and Tickell (1994) suggest that this uneven development indicates that the present situation is unstable.

As previously stated, even less research has been conducted on the wider social regulatory structures such as the church, the school, the family and the media. However, Harvey (1988) does attempt to redress this problem by examining the role that the media has played in the new mode of regulation. Harvey argues that the media has reinforced the effect of a polarisation of incomes by generating a whole series of rapidly changing special market niches. He suggests that the media have presented a pattern of frequently changing fashion trends therefore encouraging individuals to constantly change consumption patterns.

It can therefore be seen that Regulationist research concerning the new mode of regulation is limited and further more detailed research in this field must be conducted if the Regulationists are to offer an adequate alternative to the Institutionalist theory of Flexible Specialisation. The recent work of Bakshi *et al.* (1995), Jessop (1993), Painter and Goodwin (1995), Peck and Tickell (1994), and Tickell and Peck (1995) requires further development and other avenues beyond the welfare state also need to be explored. One possible source of this research could be the work of the Institutionalist themselves. The Institutionalist have carried out some research into the regulatory mechanisms of Flexible Specialisation

and in particular the regulation of industrial districts, looking at regional level structures such as high trust environments and mechanisms balancing competition and cooperation.

2.4 CONCLUSION: TOWARDS A MODEL OF POST-FORDISM

The two principal theoretical perspectives in relation to economic restructuring, the Institutional School and the theory of Regulation tend to agree on the existence of the four stages of economic development present throughout industrial society: craft production; Taylorism; Fordism; and a more flexible mode of production. However, when analysing explanations for both the rise and decline of Fordism and its subsequent replacement, a polarisation between the two theories emerges. This is hardly surprising given that they each explore economic development and its restructuring from substantially different theoretical, ideological and political backgrounds.

The conflicts and contradictions between the Institutionalists and the Regulationists are perhaps at their greatest when examining the emergence of the more flexible replacement for the Fordist mode of production. The Institutionalists on the whole offer a more indeterminacy view of proceedings, arguing that a range of new technological paradigms are possible, i.e. Multinational Keynesianism or Flexible Specialisation and that which ever emerges can be explained by a number of chance decisions taken at certain historical conjunctures. The Regulationists, on the other hand, tend to have a more deterministic view of economic development, arguing that it is governed by the principles of the capitalist mode of production. Moreover within the Regulationist School a diverse range of theories exist, with some observers such as Aglietta (1979) advocating that a regime of accumulation based on Neo-Fordism is the only possible solution to the decline of Fordism, while others such as Leborgne and Lipietz (1988, 1990) and Lipietz (1987) provide a more convincing account, stating that the replacement regime of accumulation can take a variety of forms, which differ by locality.

For the Institutionalists the new technological paradigm of Flexible Specialisation is centred around FMS, CNC, CAD, CAM and so on, which facilitate the flexible small batch production of more diverse, semi-customised commodities. Thus Flexible Specialisation advocates such as Piore and Sabel (1984) and Hirst and Zeitlin (1991) tend to focus a substantial amount of attention upon production flexibility, failing to examine in any detail the implications on labour relations. The work carried out by Piore and Sabel (1984) and Sabel (1989) assumes in passing that Flexible Specialisation is necessarily beneficial to labour, allowing workers to experience the benefits of job enrichment and the wider advantages of functional flexibility.

They fail to acknowledge that workers may also be adversely affected by the search for flexibility in the form of either job enlargement or numerical flexibility, suggesting that in these circumstances the restructuring can be more accurately classed as a modification of mass production rather than the emergence of Flexible Specialisation.

For the Regulationists, on the other hand, the reverse is true. Most Regulationist observers concentrate on the implications for labour relations, but fail to analyse changes in production organisation in any detail. Leborgne and Lipietz (1990) provide a good analysis of the implications of the adoption of Post-Fordism on labour, revealing in diagrammatic form (figure 1, page 43) that workers may be affected in a variety of ways, benefiting from the functional flexibility of Kalmarism but also suffering from the disadvantages of the flexible wage contract involved in Neo-Taylorism. They additionally point out that a mixture of these two models can emerge in the form of Toyotism, whereby some core workers experience enhanced working conditions, while other peripheral workers receive substantially less employment rights. However, like the Institutionalists, the Regulations fail to take account of the fact that the workforce may also experience another drawback under Post-Fordism in the form of job enlargement, whereby workers are expected to perform a wider range of similar status tasks, hence enduring labour intensification.

The work of the Regulationists on the replacement of the Fordist regime of accumulation appears less advanced and developed than their previous research on the rise and decline of Fordism and more importantly here, than the parallel work of the Institutionalists. Indeed, Piore and Sabel (1984) and Sabel (1989) suggest that Flexible Specialisation can take two principal forms, industrial districts and the reorganisation of multinational corporations and more importantly they provide a detailed analysis of these systems together with supporting empirical evidence. However, even the more advanced work of Regulationists such as Leborgne and Lipietz (1990) fails to provide a comprehensive account of the new regimes of accumulation. Although Leborgne and Lipietz offer a range of forms which Post-Fordism can take (Kalmarism, Neo-Taylorism and Toyotism), they fail to explore these in any detail. Moreover they locate a range of countries on various positions within the model (figure 1, page 43) but do not attempt to provide any supporting empirical evidence to justify these positions.

Additionally, Leborgne and Lipietz largely ignore the corresponding modes of regulation, a factor which is surprising since the regulatory structures of accumulation are central to the theory of regulation. Some limited progress has been made in this direction (Bakshi *et al.*,

1995, Harvey, 1988, Jessop, 1993, Painter and Goodwin, 1995, Tickell and Peck, 1995) although with the exception of Harvey (1988) they concentrate solely on changes in the welfare state. Revealing that a great deal more empirical research on the emergence of Post-Fordism and on the corresponding modes of regulation is required by Regulationists in this context.

Neither the Institutionalists nor the Regulationists provide a comprehensive analysis of gender relations, indeed gender appears to be an issue largely missing from the restructuring debate. Consequently very few examples of working women are cited and little effort is made to utilise gender neutral language, with the worker constantly referred to as 'he'. Moreover when women are incorporated into the discussion they are often seen as marginal and as Jenson (1989b) points out, not like 'real' workers. The Institutionalists are perhaps the worst culprits here as they totally ignore the issue of gender. The Regulationists (Leborgne and Lipietz, 1988, 1990), on the other hand, do appear to recognise that women and men are often located in different positions in the labour market and therefore may be influenced by the development of Post-Fordism in different ways. They suggest that the extent to which the labour force experience the functional flexibility of Kalmarism or the numerical flexibility of Neo-Taylorism may be determined by gender. However all too often they 'skirt' around the issue of gender, failing to elaborate on these issues in any substantial detail. In one article the possible implications of Post-Fordism for gender relations is left until the final statement (Leborgne and Lipietz, 1988).

The absence of a discussion of gender relations in the Regulationist account of the restructuring process has recently also been recognised by Bakshi *et al.* (1995) who have made some attempts to redress this with respect to the mode of regulation. These authors have begun to explore the gendered and racialised character of the welfare state and the way in which this is currently being redefined.

Thus it can be seen that neither the work of the Institutionalists on Flexible Specialisation, nor the work of the Regulationists on Neo or Post-Fordism provides a comprehensive explanation of the restructuring process and the resulting replacement for the Fordist mode of production. Indeed, both the Flexible Specialisation and the Post-Fordist theories have a number of strengths and weaknesses (illustrated in table 3). Whilst the analysis of the Institutional theory of Flexible Specialisation in table 3 is derived from a number of authors, it must be noted that the corresponding analysis of Post-Fordism is principally derived from the work of Leborgne and Lipietz (1988, 1990), this is primarily due to the fact that their work

Table 3. The Strengths and Weaknesses of Flexible Specialisation and Post-Fordism

Flexible Specialisation	Post-Fordism*
<p>Production Flexibility Production flexibility is analysed in detail, looking at the small batch production of semi-customised commodities as a result of new technologies i.e. CNC, FMS, CAD, CAM.</p>	Fail to analyse production flexibility in any detail.
<p>Labour Flexibility Fail to provide an analysis of the effect of the search for production flexibility on labour relations. Assume that Flexible Specialisation is beneficial to labour via functional flexibility, failing to acknowledge that workers may be adversely affected by either numerical flexibility or job enlargement.</p>	Provide a good analysis of the implications of production flexibility on labour relations, revealing that workers may be affected by flexible production in a variety of ways, principally by functional and numerical flexibility. However fail to explore an additional possibility in the form of job enlargement.
<p>Regulation Despite the fact that regulation is not at the centre of the theory, research has been undertaken into the regional regulatory structures of industrial districts.</p>	Claim that regulation is the backbone of the theory but only look at the regulatory mechanisms of the state, failing to examine wider regulatory institutions such as the media.
<p>Empirical Evidence Provide empirical evidence to support the theory of Flexible Specialisation, i.e. evidence of industrial districts in Italy, the reorganisation of multinational corporations in Germany.</p>	Fail to provide empirical evidence to support the theory of Post-Fordism, i.e. no evidence from the USA, UK, France, Japan, Germany or Sweden to support their location on the diagram with respect to the position of Neo-Taylorism, Toyotism, Kalmarism.
<p>Gender Totally ignore gender relations</p>	Skirt around the issue of gender relations but often fail to elaborate in any detail.

*This is primarily drawn from the work of Leborgne and Lipietz (1988, 1990).

is the most advanced and well developed of the Regulationist School.

Table 3 reveals that a more comprehensive and concise analysis of the restructuring process could be provided by a combination of various aspects of the two restructuring schools. This would be best achieved by taking the basic theory of the Regulationist School and developing their points of weakness as described in table 3, by adding insights from the institutionalist supposition. Therefore in order to develop a more comprehensive model of Post-Fordism the basic diagrammatic theory (figure 1, page 43) provided by Leborgne and

Lipietz should be retained but modified. As the interaction between production and labour under the Fordist mode of production has been both well researched and empirically tested Fordism can remain on the diagram in the original position, as can the triangle of inconsistency. However to the three forms of Post-Fordism originally advocated by Leborgne and Lipietz (Neo-Taylorism, Kalmarism, Toyotism) a fourth scenario needs to be added, based on job enlargement, whereby workers perform a wider range of similar status tasks but are not awarded the responsibility necessary to perform tasks of a higher status. Explanations for the existence of the three original forms of Post-Fordism (Neo-Taylorism, Toyotism and Kalmarism) are somewhat lacking and therefore substantially more research on these forms of Post-Fordism is required. Empirical evidence supporting the location of the various countries on the diagram is likewise absent and in order to adequately justify the position of the nations on the diagram this needs to be redressed. The empirical research of the Institutionalists could be utilised here, drawing upon the concept of industrial districts and the reorganisation of multinational corporations. However the empirical evidence of these two models primarily concerns production flexibility and therefore more detailed research on the implications of this production flexibility for labour is required.

A further requirement of this proposal is the expansion of research into the regulation of these various forms of Post-Fordism. This could be derived from the work of the Institutionalists on the regional regulatory structures of industrial districts and also by an extension of the existing work on state regulatory mechanisms by Regulationists such as Bakshi *et al.* (1995), Jessop (1993), Goodwin and Painter (1995), Tickell and Peck (1995).

This utilisation of the basic theory of Regulation within which insights from the Institutionalist supposition can be added is important as it enables an analysis of the implications of economic restructuring on gender relations. The Regulationist theory examines historical concepts, viewing the restructuring process as an outcome of a number of social, political and economic struggles, thus recognising that all social relations are constructed. This is particularly significant here as gender relations are considered to be socially constructed, this being exemplified by one of the oldest themes of the women's movement, that 'women are made and not born' (Jenson, 1990a, 1990b).

However, within this Regulationist framework, further research concerning the implications of economic restructuring on gender relations is required. This is particularly important if a gender dimension is to be incorporated into the existing restructuring debate. Women and men are located in different positions in the labour market and consequently will not

necessarily be affected by the move towards Post-Fordism and the accompanying search for both production and labour flexibility in the same way. Leborgne and Lipietz (1990) have already made some limited inroads in this direction with respect to the regime of accumulation, suggesting that the presence of either functional flexibility under Kalmarism or numerical flexibility under Neo-Taylorism may be determined by gender. However the implications for gender relations do not stop here. As has been previously pointed out, some authors (Wood, 1986) have explored the extent to which Post-Fordism stimulates the development of either job enrichment or job enlargement and the degree to which this is determined by gender. Some limited research has also recently been conducted into gender and the mode of regulation, particularly in relation the welfare state (Bakshi *et al.*, 1995).

However, neither of these issues are explored in any substantial detail and they are undoubtedly not the only implications of the move towards Post-Fordism for gender relations, indicating the need for more theoretical and empirical research in this whole area. This is addressed in the subsequent chapters of this thesis.

CHAPTER THREE: THE IMPLICATIONS OF POST-FORDISM FOR GENDER RELATIONS AT WORK

3.1 INTRODUCTION

From the discussion in the previous chapter concerning the theoretical debate of economic restructuring and the recent search for flexibility, it is clear that both the Regulationists and Institutionalists fail to systematically address the issue of changing gender relations as part of their account of flexibility. This is exemplified in table 3 (chapter two) which suggests that the issue of gender is totally ignored by the institutionalists, and only rarely discussed in Regulationist accounts of events. Leborgne and Lipietz (1988, 1990) mention gender relations in their accounts of the restructuring process but fail to elaborate in any substantial detail and although Bakshi *et al.* (1995) devote a paper to gender, race and class it is solely concerned with changes in the mode of regulation and particularly the welfare state.

Consequently, much of the restructuring analysis tends to be 'gender blind'. As explained in section 2.4 of the previous chapter, little attempt is made to use gender neutral language, with workers constantly referred to as 'he'. It is uncommon to find examples of working women and when female workers are cited they are portrayed as different, peripheral and somehow not like 'real' workers. This is obvious when analysing Piore and Sabel's, *The second industrial divide* (1984). Throughout this book, when occasionally referred to, women are viewed as peripheral workers merely forming a reserve army of labour. Likewise Berger and Piore (1980) portray women as marginal workers in the secondary sector, who along with peasants and migrants differ in their relations from the 'customary labour force' (Jenson, 1989b). Furthermore Berger and Piore make assumptions about women's social and economic position, defining women as dependent upon men,

"The migrants (foreign and domestic), the rural workers and the women are attractive because they belong to another socio-economic structure and view industrial employment as a temporary adjunct to their primary roles. They are willing to take jobs because they see their commitment to these jobs as temporary and they are able to bear the flux and uncertainty of the industrial economy because they have traditional economic activities upon which to fall back."

(Berger and Piore, 1980, p.50)

This omission of gender relations from the restructuring debate is unwise given the fact that 'feminisation' of the labour force is occurring at a unrelenting pace. Women now account for 44% of the civilian working population in Britain and almost 50% of employees in employment (Central Statistical Office, 1995). More importantly as deindustrialisation continues, and the tertiary sector which traditionally employs large numbers of women expands, the number of women entering the workforce looks set to increase further still. It is therefore essential that further research concerning the implications of economic restructuring on gender relations is carried out. This is imperative given the fact that men and women are located in different positions in the labour market, working in different industries and often in separate locations within the same workplace (Jenson, 1989b). Moreover the workforce is becoming increasingly polarised in terms of gender, this being highlighted by the fact that many women are concentrated in jobs which are classified as unskilled or semi-skilled. Consequently women workers will not necessarily be affected by Post-Fordism in the same way as their male counterparts.

Given the lack of existing research in this area, the task of incorporating a gender dimension into the restructuring debate is enormous, but not impossible. Bakshi *et al.* (1995) have recently begun to examine gender relations with respect to the mode of regulation, exploring the transition of the welfare state. This work is at an early stage but is undoubtedly a step forward. However, there still remains a lack of research into gender relations and the regime of accumulation. A study of this aspect of Post-Fordism is required to complement the ongoing work of Bakshi *et al.* (1995).

There is a large amount of feminist literature which can be drawn upon to explore the gender implications of the Post-Fordist regime of accumulation, in particular literature concerned with the labour market and related issues such as the core/periphery model (Beechey, 1987, Hakim, 1990a, Walby, 1989), the social construction of skill (Phillips and Taylor, 1980, Jenson, 1989b) and the gendering of new technology (Cockburn, 1983, 1985, Wajcman, 1991). By utilising certain elements of these feminist theories it is possible to examine the implications of economic restructuring on women in terms of labour processes.

Some feminist commentators (Christopherson, 1989, Jenson, 1989b, McDowell, 1991, Walby, 1989) have carried out, albeit limited, research into the implications of economic restructuring on gender relations, however, often their work is limited to an analysis of the

tertiary sector. Thus they fail to analyse the manufacturing sector in any detail. The importance of this omission cannot be understated. The majority of the mainstream economic restructuring theories (both Regulationists and Institutionalists) focus specifically upon manufacturing industries. In order to adequately incorporate a gender dimension into these theoretical perspectives due regard therefore needs to be given to the manufacturing sector.

The aim of this chapter is to address these inadequacies in existing feminist literature by expanding upon their existing explanations of the restructuring process to encompass a preliminary analysis of manufacturing employment. In order to achieve this, examples are drawn, wherever possible, from the implementation of one form of Post-Fordism, that of team working in the manufacturing sector. Team working is drawn upon in this context as it is the focus of the empirical investigation for this thesis (see chapter four for a detailed analysis).

Two main issues emerging out of the restructuring debate are examined in this chapter, workforce flexibility and technological change. Both these issues are analysed in turn and form separate sections within the chapter (3.2 and 3.3). The former was briefly addressed in the previous chapter and encompasses a discussion about numerical flexibility as well as the debate surrounding functional flexibility, particularly focusing upon the conflict between job enrichment and job enlargement. Within each section, existing feminist literature is examined, expanded upon and incorporated into the economic restructuring debate in order to begin to develop a series of issues concerning the implications of Post-Fordism for gender relations. These issues are outlined in the conclusive section (3.4) and are then developed to form a series of questions in chapter four, which are empirically explored in chapters five and six.

3.2 WORKFORCE FLEXIBILITY

Post-Fordists (Leborgne and Lipietz, 1988, 1990) argue that in recent years there has been a search for greater flexibility, both in terms of production and labour and that this has wide implications for workers in general and women workers in particular. Leborgne and Lipietz (1990) argue that labour flexibility can be achieved in quite different ways, providing a list of possible Post-Fordist scenarios: Neo-Taylorism; Kalmarism; and Toyotism. An analysis of these scenarios in the previous chapter revealed that labour flexibility takes two principal directions, via functional flexibility and via numerical flexibility. Functional flexibility is present under the Kalmarism model of Post-Fordism and

involves reducing job demarcations between occupations and encouraging individuals to perform a wider variety of tasks thus stimulating the development of polyvalent skills which can be adapted to match output. Numerical flexibility, on the other hand, is prevalent under Neo-Taylorism and refers to changing the size of the workforce in response to changing demands for goods and services, so that the number of workers are adapted to match output. This is often associated with the use of atypical or non-standard work, such as part-time, temporary, casual, self employed or fixed term contracts (Atkinson, 1984, Green, 1994, Wood, 1989). Leborgne and Lipietz additionally argue that as functionally flexible workers are not expected to bear the brunt of numerically flexible tasks, a mixture of the two may prevail in the form of Toyotism. As firms search for these different types of worker flexibility, the labour force becomes segmented. Leborgne and Lipietz (1990) indicate that this segmentation may be determined by gender, but fail to explore this issue further.

This form of dualism can be likened to Atkinson's *Flexible Firm* (1984) (see section 2.3.1b) whereby the labour market is divided into both a core and periphery. The core is depicted by multi-skilling, polyvalency, highly skilled tasks, full-time work, job security, high pay, promotion prospects, reskilling and retraining, the availability of pension and insurance schemes. The periphery in contrast is characterised by semi and unskilled tasks, part-time work, temporary contracts, low job security, low pay, few employment rights, little chance of training and disposable labour, i.e. the 'hire and fire' principle. It is widely argued (Harvey, 1990, Jenson, 1989b, Walby, 1989, Wood, 1989) that functional flexibility characterises the core and numerical flexibility the periphery.

Christopherson (1989) confirms this, arguing that the search for labour flexibility has led to a need for a smaller but more skilled 'core' workforce and a less skilled and quite vaguely defined 'peripheral' workforce. As explained briefly in the previous chapter (2.3.1b), this pattern is evident in the industrial districts of Italy, where there are a few core final firms surrounded by a buffer of peripheral stage firms, which provide numerical flexibility, and hence protect the core firms from economic fluctuations. In the Carpi textile industrial district for example, the final firms are innovative, trade directly with international markets, continually update, modify and redesign products and consequently have a multi-skilled workforce, who experience job enrichment. These firms therefore provide functional flexibility (Solinas, 1982). Surrounding these core firms are a large number of peripheral stage firms which are subcontractors (or even domestic outworkers) providing numerical flexibility for the core firms. These subcontractors specialise in just

one operation, such as buttonholing, packing or ironing. Thus the workers perform low skilled, monotonous, repetitive work and are easily dispensed of when the core firms reduce or switch subcontractors (*ibid*).

Some authors (Brusco, 1992b) commenting on Italian industrial districts refute the existence of this core/periphery model suggesting that the relationship between final firms and subcontractors is reciprocal. This may be true in some respects as subcontractors and final firms often have a close working relationship, cooperating in order to produce the required commodity. Nevertheless, despite this relationship subcontracting firms are often utilised in a numerically flexible manner and therefore can be classed as peripheral. The degree to which subcontracting firms are used in a numerically flexible manner is determined, in part, by the number of final firm customers. For example, the jobs of staff working for a subcontractor which is dependant upon one final firm are more precarious than those working for subcontractors who 'spread their risk' working for a number of final firms.

Benetton is a classic example of the core/periphery scenario. Indeed the main characteristic of the Benetton network model is labour fragmentation between 'peripheral' and 'core' workers (Belussi, 1992). Benetton retains in its plants the tertiary activities and highly crucial phases of control, coordination of production and distribution, these being executed by an internal, skilled, core, labour force, who are predominantly white collar, male workers, while in contrast the peripheral, blue collar, repetitive and fragmented work tends to be feminised (*ibid*). This issue therefore has important implications for gender relations, supporting the claims of Leborgne and Lipietz (1990) that within the Post-Fordist model labour may be fragmented (in terms of functional and numerical flexibility) according to gender. Much evidence (Beechey, 1987, Walby, 1989) confirms the occurrences of the Benetton model elsewhere, providing further supporting evidence to the claims of Leborgne and Lipietz (1990).

This existing literature therefore raises certain questions in relation to the implications of Post-Fordism on gender relations, suggesting that the search for labour flexibility may lead to the maintenance of existing gender segregation in the workplace, whereby women form the majority of the numerically flexible workforce (the periphery) whilst male employees enjoy the functional flexibility of the core. However, as indicated in the previous chapter, the debate is a lot more complex than these authors would have us believe and cannot be discussed accurately in such a dualistic fashion.

The functional flexibility sought under Post-Fordism may be manifested in a number of different ways. In some circumstances functional flexibility may prove beneficial to the labour force enabling them to experience the advantages of job enrichment. However, in other cases the ethos of functional flexibility may be only partially adopted and in these situations workers may instead experience the drawbacks of job enlargement. As explained in chapter two (2.3.1b), this may occur when new work practices are implemented, either based on the Japanese model of team working or on a variant of the Swedish prototype without all the accompanying cultural changes. This therefore indicates that while some workers will enjoy job enrichment benefiting from the functional flexibility involved in Post-Fordism, others will inevitably suffer, experiencing job enlargement.

This suggests that the possible implications of Post-Fordism for gender relations are more complex. It is therefore insufficient to discuss the extent to which men experience functional flexibility, whilst women experience numerical flexibility, as existing authors have done. What is required is an examination of the degree to which Post-Fordism leads to various forms of flexibility, numerical flexibility or functional flexibility (either in the form of job enrichment or job enlargement). Moreover, the extent to which the prevalence of each are determined by gender requires careful consideration. In order to cast some light on these issues, the concepts of both numerical and functional flexibility require further exploration.

3.2.1 Numerical Flexibility

As previously stated numerical flexibility relates to changing the size of the workforce in response to changing demands for goods and services and it is often associated with the use of atypical forms of work. Atypical work can be defined as any form of employment that lies outside the traditional full-time employment model. It therefore includes a range of employment practices such as shift work, weekend work, self employment, temporary work, homework and part-time work (OECD, 1994). Such atypical work is often precarious, being unprotected by legislation enabling employers to achieve numerical flexibility, hiring and firing workers at their own discretion (Mazey, 1988).

Most of the existing feminist debate surrounding the implications of Post-Fordism on gender relations (McDowell, 1991, Walby, 1989) focuses specifically upon the increase of these numerically flexible work practices. These commentators examine the expansion of numerical flexibility through the development of part-time work, temporary contracts and

homeworking, concluding that such flexible work practices are detrimental to women who, with the prime responsibility for caring activities, tend to be forced into these jobs and therefore form part of the peripheral workforce, which is subject to 'hire and fire' work practices.

Much of this feminist research explores the issues surrounding Post-Fordism and gender relations from a theoretical perspective, providing statistical supporting evidence of the changing ratio of permanent, full-time jobs to more atypical employment practices. This evidence is drawn from nationwide surveys encompassing all industrial sectors, without the provision of detailed empirical evidence from a particular industrial sector. Moreover in the few cases where empirical evidence from a specific industrial sector is provided (Christopherson, 1989), the research is often limited to an analysis of the tertiary sector. As previously stated, the failure of feminist authors to examine manufacturing employment is problematic, particularly as much of the Post-Fordist literature addresses the manufacturing sector.

In order to examine the validity of the claims of these commentators (Christopherson, 1989, McDowell, 1991, Walby, 1989) their research findings together with the work of other feminist authors examining more general aspects of numerical flexibility are drawn upon. Again the evidence available here relates to all industrial sectors and is not grounded in any particular industry. Empirical evidence from a particular manufacturing sector, the clothing industry, in relation to these issues, is provided in chapter five (see chapter four for a detailed explanation for the choice of this sector).

Three main issues are explored in this part of the chapter: the extent to which Post-Fordism has been accompanied by an expansion in numerically flexible work practices; the degree to which these jobs are performed by women; and the extent to which domestic and caring responsibilities influence this. The first two of these issues will now be explored together, followed by an examination of the third.

3.2.1a Post-Fordism, Numerical Flexibility and Gender: the Evidence

During recent years the balance has been steadily changing from traditional, permanent, full-time employment towards atypical employment practices (Hakim, 1990b). This trend has been dominant throughout the European Union, but varies in each member state. It has been particularly pronounced in Great Britain where 38% of all people in employment in 1993 were classified as belonging to the flexible workforce (Green, 1994). This process has been taking place for a number of years but has escalated in the last two and a half

decades. Indeed the number of workers employed on a full-time basis in Britain has fallen from 85% in 1971 (Office of Population, Census and Surveys, 1971) to just 65% in 1993 (Office of Population, Census and Surveys, 1993). Simultaneously the number employed on a 'non-standard basis' have increased, with part-time workers increasing from 15% of employees in employment in 1971 (Office of Population, Census and Surveys, 1971) to 35% in 1993 (Central Statistical Office, 1994b). Self employed workers have similarly increased from 9% (Central Statistical Office, 1993a) to 14% (Central Statistical Office, 1994b) in the same period.

Most authors writing in this field recognise the growing importance of numerically flexible contracts, however Pollert (1988) is a notable exception. She rejects the significance of the growth of numerical flexibility during this period, arguing that it is nothing new and has always been present during the post war period. To this extent Pollert is correct, however she refuses to recognise that with the emergence of Post-Fordism during the 1970's and 80's, the speed of this casualisation of the workforce has escalated. As Hakim (1990a) points out, these are not new forms of work, they are old, however the pace of change is new. Pollert's work is further impaired as she fails to acknowledge that the reasons behind the search for labour flexibility have changed in recent years with the demise of the dominance of Fordism. During the last two and a half decades the use of numerically flexible workers has been determined by different motives than those of the preceding two decades. This is reaffirmed by Beechey's study of Coventry's manufacturing industry, which concluded that during the 1950's and 60's part-time labour was utilised as a means of cutting costs, while in the 1970's part-timers were employed to maintain continuous production and to provide a flexible labour force (Beechey, 1987).

This growth of atypical work has implications for gender relations. Hakim (1990b) argues that throughout Europe non-standard work, particularly part-time jobs are frequently held by female employees. The various types of atypical work practices (encompassing part-time work, temporary contracts and homeworkers) will now be analysed in order to examine the extent to which they constitute numerical flexibility and the degree to which they are occupied by female employees.

Part-time employment. Part-time employment is usually defined as regular work, carried out during working hours which are distinctly shorter than normal (Robinson, 1988). Part-time work has been a key element in the move to atypical employment and therefore numerically flexible work and has recently spread throughout the European Union

(European Commission, 1992). However the dominance of part-time work does vary enormously between different countries. Part-time work is almost non-existent in Southern European countries like Italy, Greece and Ireland. It is about 10% in France, Germany and Belgium and more widespread in the Netherlands and Denmark (Hakim, 1990b). Part-time employment is most pronounced in Great Britain. There has been a growth of part-time work during the post-war period in Britain, with 27% of the working population now employed on a part-time basis (Employment Gazette, 1993).

Blanchflower and Corry's (1989) survey suggests that part-time work is capable of being numerically flexible, revealing that employers regard the use of part-time labour as an extremely desirable, if not the most important element of a flexible workforce. Further evidence reaffirms the precarious nature of part-time work with most part-time jobs having poor social cover and protection. As a result part-time employees have fewer employment rights than their full-time counterparts, in terms of maternity leave, health insurance, pension schemes, social security benefits and protection from unfair dismissal (Hakim, 1990b, Social Europe, 1992).

Until recently part-time workers in Britain have been identified as the least protected in Europe, enjoying substantially fewer employment rights than their full-time counterparts and therefore being subject to dismissal at the will of the employer. Employees must have worked at least sixteen hours a week with the same employer for two years to be eligible for employment rights, such as protection from unfair dismissal, paid maternity leave and redundancy pay. Additionally those who work between eight and sixteen hours a week must have been with an employer for five years to qualify for security of employment (Walby, 1986).

In other European countries such as France, part-time workers have had greater employment rights and in particular protection from unfair dismissal. However even in these countries part-timers have been used in a numerically flexible manner, being employed on a temporary basis so that their contract can be terminated just before they reach two years service and therefore before they can claim the right to protection such as statutory redundancy payment and compensation for unfair dismissal (Social Europe, 1992).

Recent pressure from the European Union has forced the British government to bring the UK in line with European equality directives and since February 1995 all distinctions in

employment protection legislation based on the numbers of hours worked per week have been removed. Part-timers are now entitled to the same statutory rights as full-timers. Thus all workers irrespective of hours worked are eligible to employment protection once they have completed two years continuous service with the same employer² (Industrial Relations Service, 1995a, 1995b). There is, however, widespread ignorance of the legislation and a large proportion of both employees and employers are not aware of the changes. It is therefore too early, at this stage, to examine the implications of this law, but it could be suggested that in the future British employers will increasingly award part-timers temporary contracts, as in other European countries, in order to retain numerical flexibility. This is an issue which cannot be addressed by this thesis but will require detailed research and investigation in the future.

It can therefore be seen that compared to full-time workers, part-timers in Britain (until recently) have enjoyed fewer employment rights, providing employers with a greater potential to utilise part-time workers in a numerically flexible manner. Consequently, it appears on the surface, that as part-time work has expanded both male and female workers have become numerically flexible and thus part of the peripheral labour market (Employment Gazette, 1993). A more in-depth analysis, however, suggests that women and men have not been influenced by this expansion of part-time work in the same way. Part-time work is traditionally occupied by female as opposed to male workers. Indeed the majority of the part-time work is available in the service sector, which employs a large proportion of women. In 1990, for example, there were nearly four times as many service sector employees working on a part-time basis in the UK than in the manufacturing sector (Anon, 1990, OECD, 1994).

The dominance of women in part-time employment is evident throughout Europe. In 1990 85% of part-time workers in the European union were female, with 30% of all the females employed working on a part-time basis, the comparable figure for all males in employment was just 4% (Eurostat, 1990). This pattern is even more pronounced in Britain, with 46% of women in paid employment in September 1992 working on a part-time basis, compared to just 10% of the male workforce (Employment Gazette, 1993).

Temporary Workers. There are two predominant forms of temporary work: Temporary Work Agencies (TWA), where a worker is contracted out to a firm for a specified period of

2

As the empirical research took place prior to these legislative changes, for the purpose of this thesis, part-time work is viewed as one way in which numerical flexibility can be achieved.

time; and fixed term contracts, where individuals are employed directly for a fixed period of time, i.e. with a specific termination date (OECD, 1994). Synonymous with part-time work, temporary employment has been growing recently. By 1991 in OECD countries there were as many as eighteen million temporary workers, employed for either a Temporary Work Agency or on fixed term contracts. This trend has likewise been mirrored in Europe. There has been a clear tendency towards temporary employment in both France and Spain, where permanent employment fell marginally between 1983 and 1991, while temporary employment increased by 15% and 25% respectively during the same period. In the Netherlands and Ireland temporary employment growth was approximately double that of permanent employment during that period and all other European countries, in fact, showed small positive growths in both permanent and temporary employment, except Italy where permanent employment increased marginally, while temporary employment fell by about 2% (*ibid*).

Since 1991 both temporary and seasonal work has become particularly important in Southern Europe and is even spreading to Italy. In the public sector in Italy, for example, young women are hired for three months or less, once or twice in the same year in the postal or telephone service, in local government and in education, thereby allowing the public services to be flexible to changes in demand (Stratigaki and Vaiou, 1994).

Like part-time employment, temporary work is capable of being numerically flexible. Temporary workers tend to have fewer employment rights and social protection, are subject to automatic dismissal procedures, have no entitlements to severance pay and therefore have little employment security (OECD, 1994). As a result temporary workers are easily disposed of and therefore form part of a short term industrial reserve army of labour, being hired and fired to meet fluctuations in demand (Christopherson, 1989). Drewes Nielsen (1991) suggests that temporary employment continues to exist as there are no costs involved to the employer when firing employees.

The extent to which temporary work can be classified as numerically flexible obviously varies between different countries and is primarily dependant upon the degree of government regulation. The greater the degree of government regulation, the less likely that temporary contracts will be used for numerically flexible purposes. An overview of government regulations for both fixed term contracts and Temporary Work Agencies in Europe is provided in tables 4 and 5 respectively. Regulation for temporary workers is

Table 4. Temporary Work: Fixed Term Contract Regulations and Requirements, 1990

Degree of govt regulation	Contract regulation	Restrictions	Max duration (months)	Renewable (No. of times)	Termin- ation benefits	Open ended benefits	Dismissal protection	Conver- sion to open ended
<i>Minimum</i>								
Austria	Y	N	N	Y	N	Y	Y	-
Denmark	N	N	N	Y	N	Y	Y	N
Ireland	N	N	N	Y	N	N	Y	N
UK	N	N	N	Y	N	Y	Y	Y
<i>Moderate</i>								
Belgium	Y	N	N	N	N	N	Y	Y
Germany	Y	Y	18	N	N	Y	Y	N
Greece	Y	Y	N	2	N	Y	Y	Y
Netherlands	Y	N	N	Y	N	Y	Y	N
Sweden	Y	Y	N	1	N	Y	Y	Y
<i>Severe</i>								
France	Y	Y	24	2	Y	Y	Y	Y
Italy	Y	Y	6	N	Y	Y	Y	Y
Luxembourg	Y	Y	24	2	N	Y	Y	Y
Portugal	Y	Y	36	2	Y	Y	Y	Y
Spain	Y	Y	36	Y	Y	Y	Y	Y

(OECD, 1994, p.19)

minimal in Austria, Denmark, Ireland and the UK. In these countries fixed term contracts can be renewed at will with no restrictions and Temporary Work Agencies are governed by minimal regulations. As a result temporary workers hold precarious jobs and can be dismissed at the will of the employer (OECD, 1994).

In other European countries such as France, Italy, Luxembourg, Portugal and Spain temporary fixed term contracts are highly regulated. In all these countries except Luxembourg the payment of termination benefits is a requirement and tight restrictions are placed on renewal, duration and the conditions for using these contracts. Italy and Spain further regulate the use of temporary employment by prohibiting Temporary Work

Agencies outright. This legislation is also practised by Finland, Greece and Sweden. Although France does allow Temporary Work Agencies, severe regulations over their utilisation are in operation. Termination benefits must be paid to employees working for a Temporary Work Agency and these payments are increased by 50% if the agency does not offer a new assignment within three days after the end of a prior assignment (*ibid*).

Table 5. Temporary Work: Contract Regulations and Requirements Through Temporary Work Agencies, 1990

Degree of govt regulation	Temp contracts regulated	Temp agencies regulated	Restrictions	Max duration (months)	Renewable (no. of times)	Termination benefits	Contract agency/ employee	Open ended benefits	Dismissal protection
<i>Minimum</i>									
Austria	Y	Y	N	N	Y	N	Y	Y	N
Denmark	N	Y	N	3	Y	N	Y	Y	Y
Ireland	N	Y	N	N	Y	N	N	N	N
UK	N	Y	N	N	Y	N	N	N	N
<i>Moderate</i>									
Belgium	Y	Y	Y	3	1	N	Y	Y	Y
Germany	Y	-	Y	6	Y	N	Y	N	Y
Luxembourg	Y	-	N	N	2	N	N	Y	Y
Netherlands	Y	-	N	6	1	N	Y	Y	N
Portugal	Y	Y	Y	12	N	N	Y	Y	Y
<i>Severe</i>									
France	Y	N	Y	24	2	Y	Y	Y	Y

(OECD, 1994, p.20)

There is some evidence to suggest that temporary workers are predominantly female, with women more likely than their male counterparts to be employed on temporary contracts. The available data suggests that 12% of women and 8% of men in the European Union in 1990 were employed on a fixed term contract. The percentage of women in temporary contracts was higher than for men in all member states except Greece (European Commission, 1992). Women in Sweden often work in temporary jobs, in fact women's share of temporary work in Sweden is the highest in Europe, with 70% of those holding temporary jobs in 1991 being women (Forsberg, 1994). In the same year

64% of those employed on a temporary basis in Belgium were women, the comparable figure for the United Kingdom being 63% (OECD, 1994).

This trend has been developing throughout the 1980s and 90s, with most European countries experiencing a fall in the number of men in temporary employment whilst the number of women in temporary work has steadily increased (OECD, 1994). Moreover a lot of temporary contracts are on a part-time basis, again this particularly affects women, who are more likely than their male counterparts to be working part-time. In 1990 approximately 40% of women on a fixed term contract in the European Union were also employed on a part-time basis, this compares to just 20% for men (European Commission, 1992).

Homeworking. Homeworking is another form of atypical work and refers to people who work at home, away from the traditional workplace. With more than two million homeworkers in Europe it is an important source of atypical work and therefore numerical flexibility (European Commission DGV, 1995). However, its precise incidence and range is difficult to assess. This is partly because homeworkers are often not officially registered and work for the 'black economy' and partly due to difficulties with the definition of homeworkers, with official statistics tending to combine those who work *at* home with those who work *from* home. The homeworkers that concern us here are those who work *at* home, performing a range of activities, both manufacturing such as sewing garments and soft toys, assembling small products, and service activities, such as typing, secretarial duties, data input and childminding etc. (Rigg and Miller, 1991).

Homeworkers are especially dominant in the Mediterranean countries, there are approximately one and a half million manufacturing homeworkers in Southern Europe (Anon, 1990). In Greece and Italy, for example, homeworking is a widespread phenomenon. In Greece homeworking is predominant in the clothing industry, while in Italy homeworking is widespread across all industrial sectors (Stratigaki and Vaiou, 1994). The dominance of homeworkers in Italy is partly due to the Italian labour law which states that firms which employ no more than ten employees and five apprentices are considered as artisanal and can avoid minimum employment rights, unfair dismissal laws etc. In order to keep below these levels and thus qualify, firms employ homeworkers (Solinas, 1982). Britain also has its share of homeworkers, and although the precise number is difficult to predict, there were an estimated quarter of a million homeworkers in Britain in 1991 (Rigg and Miller, 1991).

The importance of homeworking has grown in recent years throughout Europe and Wajcman (1991) argues that the expansion of white collar homeworking over the last two decades has played a large role in this. This expansion of white collar homework has been facilitated by the development of computer systems and telecommunications which have made it feasible for large numbers of people to work from terminals at home.

Homeworkers are a particularly important form of atypical work as they enhance numerical flexibility. Homeworkers often work on an informal basis, operate without an official contract, have few if any employment rights, such as social security benefits, sickness pay and have no security of employment. They can be dismissed without either motive or compensation, allowing firms to adapt quickly to changes in demand (Stratigaki and Vaiou, 1994). In Italy, for example, as was explained in the previous chapter (2.3.1b), homeworkers are utilised in order to enhance numerical flexibility, allowing core firms to adapt to changes in demand without the internal workforce being directly affected (Solinas, 1982). In addition to these precarious employment practices, homeworkers are often paid on a piecework payment system and earn a lot less than comparable office or factory workers, earning in some instances just fifty pence an hour, as well as having to meet their own overheads/costs (Rigg and Miller, 1991, Wajcman, 1991, Phizacklea and Wolkowitz, 1995).

It is widely acclaimed that the majority of these homeworkers throughout Europe are women (Allen and Wolkowitz, 1987, Rigg and Miller, 1991). This is supported by the Council of Europe, who in 1989, found that women in Southern Europe accounted for 80-90% of the estimated 1.5 million homeworkers (Stratigaki and Vaiou, 1994). Allen and Wolkowitz (1987) and Phizacklea and Wolkowitz (1995) reveal that the majority of homeworkers in Britain are women, with a high percentage being from ethnic minority groups. Belussi (1992) similarly points out that the majority of Italian homeworkers are women, aged seventeen to twenty-five.

It must however be recognised that some homeworkers are men, however they tend to work *from* home rather than *at* home. These men are often self employed professionals or managerial staff operating a small business from home, earning substantially higher wages than their female counterparts (Wajcman, 1991). The majority, but not all, of such professional homeworkers are male. In fact in 1990 only 10% of all women in work in the European Union worked for themselves compared to 20% of all men in work (European Commission, 1992).

3.2.1b Numerical Flexibility and Gender: the Explanations

Having revealed that atypical employment practices such as temporary work, homeworkers and, until recently, part-time work are capable of being numerically flexible and that the majority of these workers are female, it is important to examine the reasons for women being employed in these jobs. These explanations are primarily centred around the fact that women perform a dual role in society in terms of work. They participate in paid employment in the formal labour market and in unpaid work in the informal labour market. This unpaid work essentially concerns the performance of domestic and caring activities. The main responsibility for these informal activities tends to lie with women, restricting their ability to participate comprehensively in the formal workforce. As a result, women often find it difficult to work on a full-time basis, resorting to part-time and temporary jobs and even jobs based at home in an attempt to accommodate their domestic and caring responsibilities. The extent to which women's participation in paid employment is constrained by these unpaid, informal activities will now be examined.

Firstly, to examine women's role in domestic responsibilities. It is widely recognised that society has been constructed in such a way that it is perceived as the 'norm' for women to perform the majority of domestic and household tasks (Pollert, 1981, Westwood, 1984, Rigg and Miller, 1991, Showstack Sassoon, 1987). This pattern is dominant throughout Europe but is probably most pronounced in Southern European countries where traditional values concerning the respective gender roles remain intact (Stratigaki and Vaiou, 1994). However, even in Northern European countries where there has been some reversal of the gender roles, domestic and household chores remain the prime responsibility of women. This social construction in terms of women and domestic work makes it difficult for women to participate in the labour market on a full-time, permanent basis.

This is exemplified by Pollert's (1981) study of women tobacco workers. Pollert interviewed numerous female workers and found that the majority carried out most of the domestic duties at home, as well as taking the major responsibility for childcare. As a result they viewed part-time work as a more viable option, with full-time work being too demanding alongside domestic and childcare responsibilities. Westwood's study (1984) reaffirms this, with many of the women she talked to stating that they were too tired at the end of the week to sustain two full-time jobs - paid work and housework. In fact one

women who Westwood worked with explained *"we do two jobs, one here and one in the house. We'd earn a fortune if we ever got paid for both"* (Westwood, 1984, p.164).

It is widely believed that it is men who are guilty of having such stereotypical views of women and work, however, this is not necessarily true. Women themselves often reproduce these values. The women that Westwood (1984) spoke to felt that they were doing 'proper' feminine work when they were doing housework and tended to bring their children up in the same gender stereotypical ways.

Alongside domestic tasks women also have responsibility for caring activities. These are likewise perceived as the responsibility of women in society. This restricts the terms on which women can participate in paid employment and creates a number of conflicts over the balancing and use of time (Dell'Orto, 1993). As women have the main responsibility for caring they may find it difficult to participate in paid employment at all, moreover if they do manage to accommodate their caring responsibilities alongside paid employment they will be more likely to be employed on a part-time or temporary basis (Rigg and Miller, 1991). The caring role of women involves two principal groups, the elderly and children, both of which will now be briefly explored. However, it must be noted that women's caring role also extends far beyond these to include the mentally ill, those with learning difficulties, the long term chronically ill and the physically disabled (Graham, 1984, Finch, 1989).

As the population is rapidly ageing, care of the elderly is becoming an increasingly important issue. In Great Britain during the last twenty years the number of women and men over the age of sixty-five has increased by one third. The number of very old i.e. those over seventy-five and those over eighty-five is expected to increase by 21% and 50% respectively by the end of the century (Showstack Sassoon, 1987). This trend is mirrored throughout the European Union, with the number of elderly people who are sixty-five years and over increasing by 22% between 1977 and 1993 (Euromonitor, 1994). Consequently people are living longer and are therefore reaching an age where they need help and assistance in caring for themselves.

The majority of caring for the elderly is performed by female friends or relatives. This is reaffirmed by the 1985 General Household Survey which revealed that in Britain one adult in seven were providing informal care and that one in five households contained a carer. Furthermore 82% of these carers were looking after someone who was over the

pensionable age and the carer was most likely to be a woman (Parker, 1993). This pattern is reflected in other countries such as Italy where care of the elderly is almost exclusively performed by families and the primary carer is almost always a woman, often a daughter or daughter-in-law (Dell' Orto, 1993).

There is usually enormous societal pressure on women to care for elderly relatives. It is deemed as the 'right thing to do' if a woman, particularly a daughter, relinquishes her job to look after an elderly relative, the female carer consequently receives public endorsement (Finch, 1989). Women are defined culturally as being more able to provide personal care for the elderly than men are. Indeed it is women, in general, who are expected to do the personal, intimate, dirty caring jobs, as one General Practitioner who Twigg and Atkin spoke to commented,

"it may seem very sexist but certainly women seem to be much more involved with the intimate messy jobs.... You don't really tend to expect a sort of man to go and do a lot of things, you know, or involving a lot of urine, faeces, that sort of thing, which you might expect a woman to do. You just don't really... You're always surprised when the men do it".

(Twigg and Atkin, 1994, p.69)

Some studies have suggested that these stereotypical views of women as carers extend to the 'gatekeepers' of welfare provision. Twigg and Atkin (1994) reveal that the home help service in Britain has been allocated on a gender-biased basis. The respondents to their survey referred to a time when there had been explicit rules and practices that discriminated against younger female relatives and although officially the policy has changed Twigg and Atkin reveal that it is still in practice in some localities. As one organiser said,

"We don't normally give service where there's a daughter at home. When there's a son at home, then we put the service in. That used to be the rules but we use our own discretion".

(Twigg and Atkin, 1994, p.58)

In addition to care of the elderly, women also have responsibility for the care of children. It is widely acknowledged that in western society it is the 'norm' for women to have the prime responsibility for the care of young dependants (Beechey, 1987, Dex, 1988, Walby, 1986). Both childbearing and rearing are perceived as exclusively female domains. Historically it was seen as damaging to the child if the mother was not there to look after it. This is exemplified by the work of John Bowlby, a social psychologist (Riley, 1983). In

the 1950's he argued that the nature of the mother/child bond was central to the mental health of the future adult and his work was widely interpreted to mean that any separation of mother and child was damaging. This resulted in the production of a pamphlet in 1958 entitled 'can I leave my baby'. The advice he gave suggested that apart from a brief shopping trip, the answer was no! (Riley, 1983, p.10).

This exemplifies the way in which gender roles are socially constructed in society and stereotypical views of both masculine and feminine roles are formed. As a consequence of this process both women and men tend to hold the view that childrearing is the main responsibility of the female. Thus women themselves often fail to question their role in the childrearing process, accepting it as an inevitable outcome. This is confirmed by Westwood (1984), who found a general consensus about marriage and childbirth amongst the women she spoke to in a company study. The majority of the women expressed a wish to marry and once married anticipated having children and remaining at home to care for them, meanwhile their husbands would fulfill the 'breadwinner' role. Further, women tend to perpetuate these stereotypical roles in society, encouraging their friends, relatives and daughters to follow suit.

It is often extremely difficult for both men and women to depart from these traditional gender roles. Men who wish to take the main responsibility for childrearing are seen as strange and effeminate, while women who choose not to take the main responsibility for childrearing, are viewed as masculine, uncaring and 'bad mothers'. This pressure to conform comes not only from society but from individuals themselves. Many women take the prime responsibility for childrearing as they are overcome by feelings of guilt.

One of the main arguments put forward in support of women being the prime carers is that their participation in paid employment is less significant than that of their male counterparts. Women are deemed as the natural carers and men as the natural breadwinners, therefore women tend to be viewed as more readily available for caring tasks, whilst men have other, more important commitments in the formal labour market (Finch, 1989). However in recent years there has been a growth in female participation rates in the European labour force, with all European countries experiencing an increase in the number of women entering paid work during the last two decades (OECD, 1994). The only exception to this trend has been in the Scandinavian countries of Finland, Sweden and Norway, where female labour force participation rates, although by far the highest in Europe, have fallen slightly in the 1990's (ibid).

As a consequence of this growth in female participation rates, women are experiencing greater pressure. They are increasingly entering paid employment but remain the prime carers. In attempts to perform these two conflicting roles, more and more women will therefore search for atypical employment, working less hours, often on a part-time basis or taking less permanent employment contracts. Indeed an analysis of women in employment in the European Union reveals that mothers with a child under the age of ten are more likely to be in part-time employment than those without a child (Moss, 1990). This is particularly pronounced in Great Britain, where, in 1991 only 21% of women with no dependent children worked part-time, compared to 48% of those with a youngest child aged between five and nine (Central Statistical Office, 1993b). Moreover, due to their caring role some women may be effectively housebound unable to participate in paid employment away from their place of residence, hence resorting to homeworking (Finch, 1989).

The extent to and terms on which women are able to participate in paid employment, while performing both these domestic and caring activities, is dependant upon the welfare provision available. Welfare policies permit, encourage or discourage the participation of women in paid work. The greater the provision of welfare services such as childcare, employment leave (maternity, parental and family), institutions for the elderly, home helps and so on, the higher the propensity of women to participate in full-time, paid employment. Welfare provision varies from country to country and hence so do the terms on which women participate in paid employment.

In some countries, such as Sweden, extensive welfare provision is available. Public facilities cater for a large percentage of pre-school children and Sweden has one of the highest percentage, in the western world, of children under six years old enrolled in public day and childcare institutions (Siim, 1991). Similarly Sweden has very generous paid leave provision for parents. Women in Sweden are entitled to 8 weeks paid leave before and six weeks after the child's birth and additional nursing leave. Either parent is entitled to full-time parental leave until the child is one year old, with 90% pay or half-time leave with 50% pay until the child is two years old. Parents retain their job and can, on returning to work, reduce their working hours by two hours a day in addition to 90 days a year family leave for care of sick children (Anon, 1990). As a result of these welfare policies there has been an increase in the number of women with children participating in the labour market, particularly on a full-time permanent basis and as previously stated Sweden now has one of the highest female participation rates in paid employment in

Europe (OECD, 1994).

Welfare provision in other countries such as Britain is substantially different. In recent years Britain has experienced a reduction in welfare provision. For a number of years childcare provision in Britain has been viewed as insufficient and more recently has been eroded further still, particularly since 1979 under the Conservative administration. As a result childcare provision is now one of the worst in Europe, with less than a quarter of all under fives receiving some form of childcare (McDowell, 1991). The availability of statutory maternity leave and pay have likewise been reduced over the last few years. In 1988 only 60% of the employed new mothers were entitled to return to their former employer after maternity leave (Scheiwe, 1994).

So, although Britain has one of highest employment rates for women in Europe, a large proportion of these work on a part-time basis. Moreover mothers with young children often remain outside the workforce. Indeed employment rates for women with children under ten years of age dramatically fall. In Britain a mother with two children will drop out of paid work for an average of 15.9 years according to research by Davies and Josh in 1990 (Scheiwe, 1994).

Lewis (1992) explains these variations of the participation of women in full-time permanent employment by the dominance of the male breadwinner model which advocates gender segregation of tasks i.e. that men principally perform the breadwinning activities, whilst women are primarily responsible for caring and home-making. Lewis argues that some countries such as Britain and Ireland have a strong male breadwinner model, France has a modified model, while the male breadwinner model in Sweden is weak. Swedish women therefore find it easier to participate in paid employment, particularly in full-time employment, than British women. However this has not eliminated all the problems for women in Sweden. Stereotypical gender attitudes towards caring and household tasks have not changed and therefore their role in unpaid employment remains (Forsberg, 1994, Lewis, 1992).

It can therefore be seen that the emergence of Post-Fordism in recent years has been accompanied by a search for labour flexibility and one way in which this has been manifested is in the form of numerical flexibility. Consequently both male and female employees have become numerically flexible and thus part of the peripheral labour market. However from the evidence provided it would seem that women workers are the ones most profoundly affected. The majority of the numerically flexible workforce are

female, with women constituting a high proportion of homeworkers, those on temporary contracts and part-time employees (which until recently could be utilised in a numerically flexible manner). This can primarily be explained by the fact that women have the main responsibility for both household chores and caring tasks. Moreover the extent to which these responsibilities constrain women from entering full-time, permanent employment is dependant upon the welfare provision available and therefore the dominance of the male breadwinner model. In Britain welfare provision is poor, the male breadwinner model is strong and therefore women are less likely to enter full-time, permanent employment, being forced into numerically flexible jobs.

Therefore, as Post-Fordism stimulates an expansion of numerically flexible work practices this may have drawbacks for women employees in Britain. As female workers constitute the majority of this numerically flexible workforce they experience the disadvantages of the peripheral labour market and will continue to do so as long as investment in welfare provision remains inadequate. As previously mentioned, feminist authors such as McDowell (1991) and Walby (1989) have arrived at similar conclusions in terms of the implications of Post-Fordism on gender relations, at least in respect to numerical flexibility.

3.2.2 Functional Flexibility

Despite the fact that Institutional and Regulationist authors define and explain the replacement of the Fordist mode of production in quite different ways, they agree that there has recently been a search for greater workforce flexibility and that one of the outcomes of this is functional flexibility. As noted in the previous chapter (2.3), Piore and Sabel (1984) suggest that the development of industrial districts in the 'Third Italy' has enabled the workforce to experience functional flexibility, whilst Sabel (1989) and Leborgne and Lipietz (1988, 1990) argue that the reorganisation of corporations on the basis of groups (team working) is also capable of achieving functional flexibility. As explained in chapter two, the key differences between these two schools of restructuring are that the Institutionalists suggest that Flexible Specialisation necessarily leads to functional flexibility, whilst Regulationists argue that Post-Fordism may instead result in numerical flexibility.

Despite these fundamental differences between the two theories, they both define functional flexibility in the same way, as beneficial to labour, leading to job enrichment. They typically describe functional flexibility as involving a reduction of job demarcations

between occupations, with individuals encouraged to perform a wider variety of tasks which stimulates enhanced involvement, multi-skilling, the performance of higher order tasks and polyvalency. In order to achieve flexibility these polyvalent skills are adapted to match output.

However, as was briefly mentioned in the previous chapter (mainly in section 2.3.1b), the functional flexibility sought under Post-Fordism may not necessarily lead to job enrichment but may instead lead to job enlargement, a factor which both schools of restructuring appear to omit from their analysis. It has been suggested (Wood, 1986) that this may have implications for gender relations with women's job's being enlarged whilst men's are enriched. This is therefore an important issue for this thesis and is discussed in more detail in this section of the chapter. Three main issues are addressed in the following section, each of which constitute separate sub-sections. Firstly, the circumstances in and extent to which the search for functional flexibility under Post-Fordist production leads to job enlargement rather than job enrichment is highlighted, this is followed by a discussion of the degree to which this process is determined by gender and finally explanations for such occurrences are explored.

3.2.2a Post-Fordism: Job Enrichment or Job Enlargement

A number of authors (Dawson and Webb, 1989, Tomaney, 1990, Buchanan, 1994) have suggested that the emergence of Post-Fordism has led to a type of functional flexibility which is not necessarily beneficial through the development of job enrichment but which compels the workforce to experience the drawbacks of job enlargement. This process of job enlargement is exemplified by Dawson and Webb's (1989) study of the microelectronics industry. They found that the majority of assemblers, following the introduction of flexible production methods, worked on a range of products and carried out a variety of tasks but that the tasks were at a similar level.

Further evidence is provided by a Ford worker, describing the effects of the 'After Japan' strategy introduced at Dagenham. He states,

"Flexibility means every 102 seconds a car comes by and not only do you have to screw something into the car, but in between you have to tidy up, check your tools, repair things and check you've got enough parts. You do not have a single job any more. If there is no work on the line, they move you to where there is work. You are working the whole time."

(Leadbeater and Griffiths, 1988, p.18)

For this worker Post-Fordism has resulted in horizontal job enlargement as opposed to vertical job enrichment (Tomaney, 1990).

The extent to which the workforce experience either job enrichment or job enlargement as a result of the emergence of Post-Fordism is determined by the way in which work is reorganised. This is evident when analysing the implementation of team working. As stated in the previous chapter (2.3.1b), there are two main systems of team working, the Japanese and the Swedish prototypes. Within the Japanese model the emphasis is upon achieving flexibility by technological innovation. Machines are introduced which enable individual tasks to be shortened and made as easy as possible thus enabling operatives to perform a greater number of activities. As Tomaney (1990) points out, in some instances when the Japanese style of team working is adopted, individual workers are expected to perform a wider range of similar activities, utilising several different machines as opposed to the one used on the traditional production line. At the same time management and supervisors retain control over the workforce, preventing them from performing higher order tasks requiring a greater degree of responsibility and judgement. The overall result is that the jobs of operatives are enlarged rather than enriched, they find themselves performing a wider range of tasks all of which are at a similar level (Buchanan, 1994).

As explained in chapter two (2.3.1b), ideally the Swedish prototype of team working should have contrasting effects on the labour force, stimulating job enrichment rather than job enlargement. In fact advocates of the implementation of team working in the British clothing industry justify its implementation for precisely these reasons. They suggest that its introduction can enhance the working experiences of the labour force, encouraging them to experience the benefits of job enrichment (NEDO, 1991b, Tyler, 1994). It is frequently argued that this model of team working involves a move of emphasis away from machine utilisation to operative utilisation thereby promoting the development of polyvalency, whereby workers carry out more tasks of a discretionary nature, such as decision making, problem solving, line balancing, conducting team meetings, participating in the setting of production targets and performing work study tasks (Carrere and Little, 1989). Individual talents and knowledge are therefore utilised and workers are appreciated as a valuable resource, enjoying greater autonomy and responsibility. Team working advocates such as Farrands and Totterdill (1990) argue that this can facilitate career progression, providing operatives with greater confidence and status, serving to encourage some to seek promotion to supervisory and management grades.

However, even the Swedish model of team working will only have this enriching effect on the workforce if management adopt a systematic approach to its implementation. There are a number of clear constraints which may prevent this 'ideal' model of team working being developed and in these circumstances the workforce may instead experience job enlargement. These potential constraints encompass management style, and as initially indicated in the previous chapter (2.3.1b), training, both of which require further consideration.

The first potential constraint is management style. This can take two principal forms, responsible autonomy and direct control (Friedman, 1977). Under responsible autonomy managers give workers enhanced status, authority and responsibility in an attempt to gain worker loyalty. Direct control, on the other hand, is a strategy aimed at limiting the scope of labour power by the use of coercive threats, close supervision and by reducing individual responsibility.

If management are to adopt the full ethos of the Swedish prototype and all the cultural work place changes that accompany it, the labour force must be controlled by responsible autonomy. It is only with this type of management, that team members are able to work autonomously and reap the full benefits of job enrichment (McLellan et al., 1996). However management may be wary of such a change and feel that by giving enhanced powers to the labour force their own position will be undermined. As a consequence management may attempt to implement team working while maintaining the traditional autocratic style of management necessary under line production and therefore retain direct control over their work force (*ibid*). In these situations companies merely pay 'lip service' to the Swedish notion of team working and as a result team members are deprived of the enhanced responsibility, autonomy and control which is evident when the Swedish 'ideal' is adopted. Instead they experience job enlargement, performing a wider range of similar status tasks.

The second issue governing the extent to which workers in a team work environment experience job enrichment or job enlargement concerns the type and quantity of training provided. Training of all members of staff involved in team working is vital and should be extended to all levels of the employment hierarchy from operatives, to supervisors, to management if it is to enrich the jobs of team members (Tyler, 1994). This issue was referred to in the previous chapter, but requires further consideration here.

Within team working, operatives should receive continuous training and education in both technical and social skills if the workforce are to experience job enrichment. In the clothing industry, for example, team members should be trained to perform a wider range of machining tasks facilitating multi-skilling, while simultaneously acquiring the ability to perform more tasks of a discretionary nature, as mentioned earlier, such as problem solving, line balancing etc. (Carrere and Little, 1989). Moreover it is essential that this training is provided by qualified and experienced personnel utilising either an internal or external training school. This ensures that thorough and adequate social and technical training is provided, that standardised techniques are adhered to and that the workforce experience an enrichment of their working lives (McLellan *et al.*, 1996).

Team working, on the other hand, can be introduced without such comprehensive training. This is often related to the fact that management are reluctant to invest such large amounts of resources into training workers who may subsequently leave the company. This is explained by Weintraub (1987) who argues that extensive training produces a number of increased risks and costs and turnover often becomes a 'death knell' for the company, with management fearful of investing large amounts of resources into workers who may eventually leave. Reluctance to invest in staff training can result in two situations, firstly management may refuse to provide staff training and may instead utilise operatives in order to cross train each other. NEDO (1991b) in fact advocated that each team member should train their fellow colleagues in their main skill. Secondly, training may be provided but not to an adequate level. This may occur when management refuse to train staff in wider social techniques, limiting education to pure technical skills. In both these situations team members are able to perform a wider range of operative tasks but their ability to perform tasks of a more discretionary nature is restricted. In these circumstances it is more likely that the workforce will experience job enlargement rather than job enrichment.

If team working is to enrich the jobs of operatives, training of both management and supervisors is also essential. Management require extensive training if they are to adapt to a new role which facilitates increased worker responsibility and autonomy. They must be trained to discard the day to day 'fire fighting' techniques utilised under line production, to trust the ability of their workforce, to become person managers and to be responsible for teaching individuals how to be involved and how to work as team members (Tyler, 1994). Supervisors likewise require training if operatives are to experience the benefits of job enrichment. As stated in the previous chapter, supervisors must be trained to become

'facilitators', 'coachers' or 'enablers' (Carrere and little, 1989), instead of 'policing' operatives as in line production. They must learn how to devolve tasks to operatives for whom they were previously responsible (*ibid*). However, if both management and supervisors fail to receive comprehensive training of this nature, they will be less likely to devolve powers and responsibilities to the workforce. As a result, team members will be expected to carry out more tasks of a similar nature leading to job enlargement but will not be given the opportunity to perform the more discretionary tasks involved in job enrichment.

The type of management style adopted and the quantity and quality of training provided therefore act as barriers preventing team members working within the Swedish prototype from experiencing job enrichment.

However, when analysing the impact of team working (either the Swedish or Japanese variant) on the workforce it is also important to examine the type of payment systems adopted as this governs whether or not team members are financially awarded for obtaining more skills and influences the way in which both job enrichment and job enlargement affect the workforce. Team working may be accompanied by a variety of different payment systems which tend to be variations of either flat rate or piecerate. A flat rate payment system infers that team members are all paid the same, fixed amount each working week. This would at first sight appear to benefit the workforce providing them with stable earnings and security of income thus reducing the uncertainty which is so characteristic of piecework. However the workforce will only benefit if the guaranteed level of earnings are both realistic and competitive (Tyler, 1994).

The piecerate payment system, on the other hand, involves operatives being paid 'by results', thus workers are encouraged to speed up tasks and get financial reward for doing so. Piecerate is often deployed under the traditional production line as it is believed to be the only method of staff motivation. The more able and quicker members of the workforce often benefit from piecework as they are able to earn substantial amounts of money (*ibid*). However, piecework has its drawbacks, it fails to provide security of income with operatives experiencing week to week fluctuations in take home pay and it is unfair to those workers who are slower or are placed on slower operations.

Tyler (1994) suggests that ideally the introduction of team working should be accompanied by a flat rate payment system, however a variation of piecerate may often

be retained. This, in many cases, involves the development of a group piecework payment system, whereby each team member is paid a common wage which is related to the overall group performance in terms of output. This obviously has wider drawbacks for the workforce, with individual wages being dependent on the performance of team colleagues. Slower operatives may reduce the overall performance level of the team, leading to ill feeling, particularly amongst the fast performers, the so called 'high flyers'. Further peer pressure may also arise from group piecework payment systems, with operatives who are genuinely ill being reluctant to take time off work, developing feelings of guilt for 'letting the side down' (McLellan *et al.*, 1996).

3.2.2b Job enrichment, Job Enlargement and Gender: the Evidence

There is some evidence to suggest that the way in which work is reorganised, and therefore the extent to which the workforce experience job enlargement or job enrichment, may be determined by gender. Authors such as Wood (1986), Elger (1991) and Dawson and Webb (1989) suggest that women's jobs will be reorganised in such a way that they are enlarged, whilst the jobs held by their male counterparts will be reorganised in a way which enriches. This again highlights the presence of the core/periphery model, whereby women are allocated peripheral activities.

Elger's (1991) study of electrical engineering sites concluded that while white male jobs were enriched following the introduction of flexible production methods, female jobs were simply enlarged. Similar evidence is provided by Dawson and Webb's (1989) study of the micro-electronics industry. They found that the introduction of Just In Time (JIT) and Total Quality Control (TQC) led to both up and deskilling. The upskilled work tasks were carried out by men, whilst the deskilled, routinised, computer controlled, tasks were allocated to women. Dawson and Webb state that,

"the reskilling of women assembly workers has largely been restricted to the adoption of Totally Quality Control (TQC) techniques to service on line quality control rather than the acquisition of technical knowledge to enable the free movement of assembles across a wider range of tasks. Consequently, significant labour flexibility remains the preserve of the male dominated technician and graduate engineering workforce."

(Dawson and Webb, 1989, P.230)

Further evidence that work restructuring is not without gender bias is provided by Wood (1986). Wood examined the introduction of team working in the automobile industry and found that team working differentially affected men and women.

"For example, on the final inspection section, it fostered genuine group working; for many of the male production workers, who were working individually, the scheme had basically facilitated regular small group (quality circle) meetings; whilst for the women who were working on short assembly lines at various points in the production process, it largely meant job rotation, that is increased mobility between very limited tasks, albeit on a basis worked out by the women themselves. This example illustrates how the different relationships which various groups of workers have to technology.....remain even in the modern, more integrated factories and more importantly mediate the effects of worker participation schemes."

(Wood, 1986, p.426)

3.2.2c Job Enrichment, Job Enlargement and Gender: the Explanations

Wood argues that team working has differential gender implications due to the distinct relationships that women and men have to technology. The issue of technology and gender is expanded in section 3.3 of this chapter, but is not sufficient, alone, to explain why women's jobs are more likely to be enlarged and men's to be enriched. Feminist theories concerning the social construction of skill are crucial here. The idea that skills are socially constructed is not new. Jenson has argued for many years that skilled work is defined by a variety of social mechanisms and that these skill differentiations are often identified in terms of gender. Jenson points out the jobs that men do are seen as skilled, whereas the jobs that women perform are often classed as unskilled, merely involving some sort of natural 'female talent' (Jenson, 1989b).

Pollert expands on this, arguing that qualities such as close concentration, accuracy and manual dexterity require obvious skill and training, but are relegated to 'natural' and untrained 'aptitudes' when performed by women (Pollert, 1981, p.65). Birnbaum summarises these points, *"it is the sex of those who do the work, rather than its content which leads to its identification of skilled or unskilled work"* (Truman and Keating, 1987, p.27).

This is exemplified by Truman and Keating, who point out that when machining in the clothing industry has been carried out by men it has been seen as skilled, but when performed by female workers it is classed as unskilled. These gender differentiations are justified by the separation of male and female workers, thus historically male machinists have been tailors manufacturing individual, high quality garments, whilst female machinists have manufactured standardised garments in large factories (Truman and Keating, 1987).

The notion that skill is socially constructed is based on the idea of identity formation and at the very heart of this is the process of differentiation, i.e. the establishment of 'sameness' and 'difference'. Jenson (1989b) explains that this process of forming identities is prevalent in class formation, whereby boundaries are set around a class in order to establish an understanding of those who share a common set of interests and those whose interests are different. Gender identities are formed in much the same way, boundaries are established between feminine and masculine lives. This is clear in Cockburn's (1985) historical study of the printing industry. Cockburn found that when the compositors craftsmanship was threatened by the introduction of new technology, they fought it as a challenge to their own power, which included their power to be men. Cockburn argues that the identity of these printers as skilled craftsmen not only encompassed the boundaries between themselves and the owners and themselves and unskilled men, but also a gender boundary. The printing craft involved the social construction of printers as men and as skilled workers, with the two elements being inseparable (*ibid*).

This concept of the social construction of skill can be explicitly linked to the debate concerning job enlargement and job enrichment and is evident when examining the introduction of the various forms of team working. Male employees are viewed as capable of working autonomously in small work groups carrying out polyvalent tasks and therefore tend to benefit from the search for flexibility via job enrichment. This can be contrasted to female workers, who may be viewed as incapable of working more autonomously. As a consequence when team working is implemented amongst a female workforce, they may not experience the benefits of job enrichment but instead suffer the drawbacks of job enlargement. This suggests that different forms of team working may be implemented in accordance with the sex of the employees. Hence, if the workforce are predominantly male, the Swedish prototype which enriches individual jobs may be introduced. However, if the workforce are predominantly female, either the Japanese or the variant of the Swedish model which stimulates job enlargement, may prevail. This process can be explained by two key factors: management may be unwilling to change their style of management when employing a female workforce; and management may be unwilling to invest in staff training at any level in the company hierarchy when the workforce are female.

Firstly to explore management style. Instead of changing their style of management to responsible autonomy when implementing team working, management may retain direct

control over their female workforce believing that the predominantly female team members are not capable of handling a greater degree of responsibility, autonomy and control. Management are frequently male and may feel that their masculine power is being threatened by empowering female employees, whom both they and the women themselves view as marginal and unskilled workers (Forsberg, 1994). In these circumstances women workers will be deprived of experiencing the benefits of job enrichment when team working is implemented and will instead suffer the drawbacks of job enlargement, performing a wider range of similar status tasks.

Secondly to explore the issue of training. Women are not only viewed as incapable of performing skilled work requiring any responsibility and discretion they are also often viewed as naturally 'unreliable', the most common reasons stated being menstruation and pregnancy (Westwood, 1984). With these stereotypical opinions of women and work, when team working is introduced into a company with a female workforce, the likelihood of management investing in sufficient training provision is low and as a result job enlargement rather than enrichment may prevail. Management may refuse to adequately train female employees for two main reasons. Firstly, they may believe that it is not worth investing large amounts of resources into training a female labour force who may become pregnant and subsequently leave the company (Cockburn, 1983, Westwood, 1984). As one male employer states *"it costs £5000 for the boss to train a woman up and what if she then toddles off and has a baby?"* (Cockburn, 1983, p.178). In these circumstances women workers will be expected to learn additional skills themselves or from a willing colleague. The second explanation can again be linked to the social construction of skill. As female workers are viewed as unskilled and peripheral in the workplace, management may have the opinion that although they are capable of acquiring more skills of a similar status they are unable to perform tasks of a more discretionary nature (Horrell *et al.* 1990, Jenson, 1989b). In this case management may provide technical but not wider social training.

It is even less likely that managers of a female workforce will receive training of any significance when team working is implemented. This is particularly true in Britain where management 'learn by doing' rather than by technical education and training. In fact the majority of British managers throughout the industrial sectors receive only minimal training (Nicholson and West, 1988). A large proportion of British managers possess no post-school qualifications at all and are very rarely provided with training, even when they change jobs (Lane, 1989, Nicholson and West, 1988). This has therefore created a

culture in Britain whereby management resist training believing that they 'know best' in terms of management technique.

The reluctance of managers to receive training may be especially severe if the workforce are female. It is argued that management believe that they require less training to manage a female workforce, who in general are viewed as rather stupid when it comes to paid work and hence easier to manage (Cockburn, 1985). In effect women are seen to be less assertive, less confident, and less sure of their own abilities than men and are therefore believed to 'do as they are told' without question, being more reluctant than their male counterparts to question managerial decisions (Cockburn, 1985, Nicholson and West, 1988, Wajcman, 1991).

As a result of these conventional views of gender, skill and employment, work may be reorganised in a way which enlarges rather than enriches the jobs of female employees. Suggesting that when team working is introduced with a female workforce, the prototypes which enlarge and therefore have a negative effect on the workers will be selected. This may be exacerbated by the payment system adopted. Some evidence suggests that women employees are viewed as marginal and peripheral workers and not really serious about paid work, carrying out certain activities just for 'a bit of pin money' (Forsberg, 1994). Thus management may believe that the only way in which they can motivate their predominantly female workforce is by adopting a modification of piecework, via a group payment system. In this situation, as previously stated, individual wages will be explicitly linked to the overall performance of the team. This will particularly affect the quicker team members, whose earnings may be reduced by the presence of slower operatives within the team. In order to counteract this, quicker machinists may find themselves working harder to raise the team's (and therefore their own) earning capacity.

These stereotypical views of women and work are perpetuated throughout society, in the mass media, in comics, magazines, on television, in advertisements, at school and at home etc. and are therefore difficult to break down. As a consequence women themselves may view 'women's work' as inferior, believing that they are not capable of performing the higher order tasks involved in job enrichment and that such tasks should be left to their male counterparts. This is revealed in Pollert's (1981) study of tobacco workers, where most of the female employees had a fixed idea of their future lives. They would get married, leave work and have children - after all work is really for men!

Trade unions have also played a large part in perpetuating these traditional views of gender and skill. They have conventionally placed 'skilled' labels on their male members in order to exclude women, keeping the labour supply low, wages high and therefore protecting the skill of the male craftsman (Coyle, 1982). Hartmann suggests that men have an interest in sustaining job segregation by sex, as it enforces lower wages for women and keeps them dependant upon and subordinate to men both at work and at home (Hartmann, 1976).

Furthermore even if women are viewed as being capable of performing the highly skilled work involved in job enrichment they are often constrained from doing so. As a result they may experience job enlargement instead. Skilled, powerful jobs are often accompanied by overtime, evening and weekend work and as women tend to have the prime responsibility for household duties and caring activities, this serves to hold them back into unskilled, part-time work. This is illustrated by a company examined by Cockburn (1985). In the company in question, women on the sewing and cutting floors worked part-time, but full-time work was essential for supervisory occupations. Cockburn found that this constrained women with children from both seeking and gaining supervisory positions. One women interviewed by Cockburn said that in order to further her engineering career she had decided not to have children at all (*ibid*).

Women are therefore in a catch twenty-two situation whereby stereotypical views within society pressurise them to take the main responsibility for the care of young dependants, while (predominantly) male employers fail to provide adequate childcare facilities. Women are then told that they cannot have skilled jobs with responsibility because they will eventually leave to give birth to and rear children.

Existing literature (Dawson and Webb, 1989, Tomaney, 1990, Wood, 1986 etc.) therefore suggests that the search for functional flexibility involved in the adoption of Post-Fordism may not necessarily lead to job enrichment as authors concerned with the economic restructuring debate (Plore and Sabel, 1984, Sabel, 1989, Leborgne and Lipietz, 1988, 1990) suggest, but may instead lead to job enlargement. Moreover the extent to which either job enlargement or job enrichment prevails will be dependant upon the way in which work is reorganised. Thus, when examining the implementation of team working it appears that if the Japanese rather than the Swedish model is implemented job enlargement will prevail. Moreover, in situations where the Swedish model is implemented there appear to be a number of clear constraints (encompassing

management style and training) which may prevent the workforce experiencing the benefits of job enrichment. The system of payment also plays an important role in this process.

It has been suggested that the way in which work is reorganised and therefore the extent to which the workforce experience either job enlargement or job enrichment may be determined by gender. Thus as men's jobs are enriched, women's will simply be enlarged. This process is evident when examining the implementation of team working. When the workforce are predominantly female the Japanese or the variant of the Swedish model which lead to job enlargement may be more likely to be implemented. This can be explained by the existence of stereotypical images of female employees as being unskilled, unreliable and unserious about paid work.

3.3 TECHNOLOGICAL CHANGE

In the previous chapter it was explained that new technology is an essential component in the Post-Fordist debate. Fundamental innovations in micro-electronics have enabled the development of computer controlled technology which has resulted in Flexible Manufacturing Systems (FMS) such as Computer Numerical Control (CNC), Computer Aided Design (CAD) and Computer Aided Manufacturing (CAM), all of which help to achieve the flexibility required in a Post-Fordist economy. These computer controlled innovations have facilitated the small batch, flexible production of high quality commodities so crucial to Post-Fordist production. A range of product items can now be produced by a single machine with minimum cost and delay, simply by changing from one specification to another. Meanwhile as this new automated equipment attains unprecedented high levels of accuracy, optimum levels of quality can now be achieved (Child, 1985, Mitter, 1992).

It must nevertheless be noted that this technological innovation does not just concern the machinery and its implications for the production process but encompasses wider issues; how, by whom and for what means the machinery is utilised (Farrands and Talladay, 1994). Indeed this rapid technological development in recent years has fundamental implications for the labour process. The way it is being implemented is transforming the character of work, the control of the labour process and the structure of the workforce (Wajcman, 1991, Wood, 1989).

Both the Institutionalists and the Regulationists suggest that technological innovation is an essential component of the Fordist successor. However, to varying degrees, they both fail to examine the wider implications of this technological change. As was highlighted in the previous chapter, the Institutionalists, in particular Piore and Sabel (1984), focus upon the production flexibility achieved as a result of these technological advances. They do not, however, examine the implications on the labour force. Regulationists such as Leborgne and Lipietz (1988, 1990) likewise recognise the importance of new technology in their model of Post-Fordism. In contrast to the Institutionalists they do begin to examine the way in which it is implemented and the implications on the labour force, suggesting that the introduction of new technology in the Post-Fordist economy can upskill some jobs and deskill others, thus they state "*new technologies foster the separation between highly skilled intellectual designers and engineers, and poorly skilled operatives*" (Leborgne and Lipietz, 1990, p.3).

However, like their analysis of the workforce flexibility sought under Post-Fordism, Leborgne and Lipietz's examination of this technological revolution is problematic. They fail to examine the implications of technological change on the workforce in any substantial detail and omit a discussion of the specific implications that new technology has on gender relations. In order to redress this, an in depth analysis of the implications of the technological change involved in Post-Fordism on the labour force in general and gender in particular is required. Each of these two issues will now be discussed in turn, forming separate sub-sections.

3.3.1 Post-Fordism, Technological Change and Labour

A large proportion of the research into technological innovation and labour appears to be conducted by labour process theorists, Braverman's publication of *Labour and Monopoly Capitalism* (1974) pioneering this debate. Braverman suggests that technological innovation is fundamental to capitalist society and that capitalism by its very nature requires the continuous application of new technology in order to fragment and reduce the cost of labour. Given these aims of capitalism he points out that new technology has a detrimental effect on the labour force, leading to a degradation of work, whereby the skill content is withdrawn from certain job categories. Moreover, Braverman believes that there is a deliberate tendency for capital to utilise technology in this way as a furtherance of a general trend towards the deskilling of labour. Braverman may in part be correct, but his analysis is flawed to a certain degree as he fails to acknowledge that the technology introduced in order to deskill labour may simultaneously lead to the creation of new job

descriptions which involve a higher degree of skill content. As Thompson (1983) points out, there is no technological inevitability about deskilling, new upskilled work can simultaneously be created.

From this analysis it can therefore be inferred that the technological innovation characteristic of Post-Fordist production may have a dual effect on the workforce, deskilling some jobs and upskilling others, thus supporting Leborgne and Lipietz's initial claims. Very little research in this field exists, although a few studies have been conducted in the clothing and textile industry (Cockburn, 1985, Truman and Keating, 1987, Wajcman, 1991) which appear to confirm this process.

Cockburn's study (1985) of the introduction of FMS in the clothing and textile industry provides a good example of the way in which Post-Fordist technology can be utilised both to deskill and upskill work tasks. Cockburn studied both traditional and Flexible Manufacturing Systems and concentrated primarily upon the resulting changes within the pattern room. In a traditional company three prime activities are carried out in the pattern room; pattern making, pattern grading and lay making, all of which are skilled activities. Cockburn found that in order to achieve greater flexibility and quality some companies had introduced FMS in the form of CAD. As these CAD systems were introduced, she found that the skills involved in these pattern room tasks were reduced. This is exemplified by an examination of the pattern grading job. The traditional grader utilises grade rule tables, which specify the number of millimetres involved in each size step to enable the patterns to be cut in a range of sizes. A number of pieces of card are then staggered out by the required distance, with the master pattern placed on top. The grader then cuts through the various sized cards and adds grain lines, seam lines and darts etc. However once CAD is introduced the grader's task is virtually eliminated as the computer memorises grade rule tables and can produce patterns for new styles in a range of sizes at the touch of a button. Cockburn discovered that the introduction of CAD in the pattern room did not just lead to this deskilling but simultaneously highly skilled job categories were created. These new jobs mainly involved the control and maintenance of the CAD system, and resulted in the requirement of highly skilled computer analysts, programmers and engineers.

Truman and Keating (1987) similarly found that the introduction of the new technology involved in Post-Fordist production can have a dual effect on the workforce. Like Cockburn's research, they too focused upon the clothing industry, examining the way in which micro-electronic sewing machines have been installed in order to achieve flexibility

and small batch production. They found that these electronic machines are often pre-programmed to carry out and repeat specific operations, thus reducing the amount of skill and discretion needed by machinists. Gebbert (1992) similarly researched the introduction of these sewing machines and concluded that this deskilling process has an additional drawback of labour intensification. She points out that following the introduction of microelectronic sewing machines there has been a growing tendency for one machinist to feed two or three or even more automated machine units, reducing the number of operatives required. At the same time as deskilling work tasks, Truman and Keating found that these electronic machines also led to the requirement of highly skilled computer programmers. This may at first sight appear beneficial to the machinists yet the reality is much less encouraging. These computer programming activities were not performed by the machinists but by other personnel, further withdrawing machinist control over the production process.

Wajcman (1991) found further evidence of this dichotomy, with the introduction of numerical controlled machine tools. She discovered that when these numerical controlled machines were introduced in the clothing industry, the jobs of the machinists were deskilled, as they became mere 'button pushers' but simultaneously new planning, control and computer programming jobs were created which were invariably performed by other employees in an office which was often located away from the shop floor.

This limited amount of empirical research therefore provides further supporting evidence to the claims of Leborgne and Lipietz (1990) that the new technology involved in Post-Fordist production has a dual effect on the workforce, deskilling existing operative jobs, whilst creating new job descriptions involving a high degree of skill content. However this research does not go far enough, although it examines the implications of the technology involved in Post-Fordist production, it fails to recognise that the extent to and way in which this technology is utilised and therefore the way in which it affects the workforce, is dependant upon the wider characteristics of Post-Fordism, in particular the way in which work is reorganised. This is exemplified by examining the way in which technology is utilised when different forms of team working are implemented.

As previously explained in both this and the previous chapter, there are two principal models of team working, one being derived from the Toyota revolution in Japan and the other from Sweden. Buchanan (1994) and Tomaney (1990) explain that each of these prototypes and the nature of their implementation has specific implications for the way in which the workforce are affected by technological change. An examination of the

introduction of the Japanese style of team working reveals similar conclusions to those provided by Cockburn (1985), Truman and Keating (1987), and Wajcman (1991). Technological change is central to the Japanese philosophy of team working. Computer controlled technology is purposely utilised in order to reduce the complexity and therefore skill content of each operative task, enabling team members to use various workstations, performing a wider range of operations at a greater speed (job enlargement). As these operative tasks become easier and team members are expected to be multi-skilled, they may be required to utilise several machines each, hence stimulating labour intensification. This can be exemplified by the case of a garment company in the UK, where a typical team has twenty one workstations with seven operatives, thus each machinist operates three machines (NEDO, 1991b). The workstation to operative ratio varies in this company and in some instances there can be as many as twenty four workstations to just five operatives.

Within this Japanese model of team working the majority of the power and control remains with management, indeed as Sabel (1989) points out, increasing worker knowledge and autonomy is not a characteristic of the Japanese style of team working. It is therefore not surprising that the new, highly skilled, autonomous tasks created as a result of the introduction of the very technology which deskills operative tasks are not performed by the team members but by other personnel. Revealing that when team working is implemented, operatives suffer the drawbacks of deskilling and labour intensification, whilst others benefit from this process, performing jobs with a high degree of skill content.

Literature concerning the introduction of the Swedish model of team working, on the other hand, suggests that importance is placed on operative skills rather than technological change. So instead of introducing new technology to deskill individual work tasks, team members are encouraged to become multi-skilled not only performing a wider range of similar status tasks but carrying out tasks of a more discretionary nature, hence increasing operative control and autonomy (Carrere and Little, 1989, Tyler, 1994). The preceding section (3.2.2) has examined these issues in detail and therefore a comprehensive discussion of these concepts shall not detain us. It is suffice here to restate that the workforce will only enjoy these benefits if the full ethos of the Swedish prototype are adopted, involving a change in management style and the provision of comprehensive training to all levels of the employment hierarchy.

As the Swedish model of team working promotes the development of polyvalent operatives who are able to perform tasks of a more discretionary nature (Tyler, 1994), the division between production and control tends to become less apparent. Functions such as planning and line balancing, which under traditional methods of production, are the preserve of the 'technical elite' become the responsibility of the team members (Farrands and Totterdill, 1990, Totterdill, 1994). So even if some new technological innovations are introduced which deskill operative tasks, it is likely that operatives will be trained to perform the newly created, highly skilled, autonomous, tasks such as computer programming and may consequently benefit overall from the technological change. Although the skill involved in their everyday machining tasks may diminish, team members will be compensated by the ability to perform higher status tasks, gaining greater control over the production process.

However, this Swedish prototype of team working may not always be implemented in its entirety. As previously stated, team working may be introduced without either changes in management style or adequate training provision. Under these circumstances it is unlikely that team members will be encouraged to perform tasks of a more discretionary nature and therefore they will not receive enhanced autonomy and control over their working lives (for a detailed analysis see section 3.2.2). In this situation, if new technologies are introduced, team members (like those working on the Japanese model) will suffer the drawbacks of deskilling. The skill content of their existing tasks may be reduced and they will not be allocated the discretion and autonomy necessary to benefit from the newly created, highly skilled activities such as computer programming.

It can therefore be seen that the new technology involved in Post-Fordist production affects the labour force in a variety of ways, in some instances upskilling work tasks and in others reducing the level of skills required. This process is not only determined by the nature of the machinery or equipment adopted but by the way in which technology is utilised, which is in turn determined by the nature and structure of work reorganisation.

3.3.2 Post-Fordism, Technology and Gender

This process may have important implications for gender relations at work. Both the structure and nature of work reorganisation and the way in which technology is utilised may be determined by gender. The former has already been explained in the preceding section of this chapter and therefore a further discussion shall not detain us. However, the latter issue concerned with the fact that the way in which technology is utilised may

also be determined by gender has yet to be examined and therefore requires further analysis.

A number of feminists writers (Cockburn, 1985, Jenson, 1989b, Wajcman, 1991) argue that women are considered to have different aptitudes and attitudes to technology than their male counterparts. They suggest that the very definition of technology is gender biased. The word technology is synonymous with 'masculine' images of industrial machinery, computers and cars but excludes 'feminine' technology concerned with cooking, childcare and so on. Wajcman (1991) argues that technology is identified with manliness and that this is not inherent in biological sex differences but is a result of the historical, social and cultural construction of gender. Women are seen as closer to nature, more emotional, less analytical and weaker than men are, and these associations play a powerful role in the ideological construction of women as inferior in terms of technological know how.

The crucial issue with regard to women's relationship to technology is how definitions of skill are established. Women's jobs are often said to be low paid because the work they do is unskilled, but the skill content of jobs is socially determined (Cockburn, 1985, Jenson, 1989b, Wajcman, 1991). A nursing job, for example, requires a high degree of training and ability as well as technical knowledge, however it is still not recognised as a technical job because it is deemed as 'women's work' (Wajcman, 1991). Sewing machining similarly is a job predominantly performed by women. This is perhaps one area where women are most at ease with machines and yet it remains seen as unskilled. It is viewed as a job that women have a natural aptitude for and consequently the technical skill required is devalued and underpaid. However, as Wajcman (1991) rightly points out, a sewing machinist is a skilled job, to be a competent sewing machinist requires knowledge and experience of the machine.

Women's work has therefore been socially constructed as unskilled and as a consequence is undervalued. Definitions of skill are less related to technological competencies and associated more with ideological and social constructions. This process consequently produces stereotypical images of women as technologically ignorant and incompetent and as a result they are viewed as incapable of invention. Until recently it was widely accepted that men are the main inventors. Moreover, when women have made discoveries their inventions have been accredited to men, particularly to their husbands (Wajcman, 1991). However new evidence suggests that during the industrial era women invented or contributed to the invention of various things such as sewing

machines, small electric motors and the Jacquard loom (*ibid*). Furthermore, it is now recognised that women have played a major part in the development of computers and computer programming. Lloyd and Newell (1985) suggest that the first person recognised as a computer programmer was a woman, Lady A. Lovelace, a mathematician.

Technology is therefore more than a set of artifacts, it also concerns knowledge and processes which are historically and socially constructed as masculine activities (Wajcman, 1991, Cockburn, 1987). As a consequence of these differential gender relations to technology a number of observers (Cockburn, 1985, Jenson, 1989) have argued that new technology is gendered. Jenson explains these varying gender relations to technology by three principal factors: the design of machines; the assumptions made by managers; and women themselves make a substantial contribution to gender segregation in relation to technology.

Firstly, to look at the design of machines. Machines are constructed in a way that can easily be manipulated by men, this is primarily because the design itself incorporates assumptions about body size and strength. Cockburn (1983) utilises a study of the printing industry to illustrate this. She argues that the compositor's job is not just physically demanding by chance but men have contributed to this outcome historically in two ways. Firstly, they have been influential in excluding women from the kinds of experience (including work) that develops physical strength and confidence. Secondly, they have been influential in designing labour processes. Men have used their 'political muscle' within trade unions to fight against excessively heavy tasks, but only when and to the degree which suits them. In certain instances men have found it advantageous to retain within their 'craft' certain tasks which are too heavy for the average woman.

The assumptions made by managers is another way in which technology is gendered. Milkman (1983) argues that managers often determine if a particular job is *feminine* or *masculine*, for example light industry is considered as suitable for women and therefore in the 1930's and 40's managers filled the vacancies in the electrical sector with women. Milkman argues that within the electrical industry women and men were frequently employed in similar jobs, but women carried out the 'light' coil and armature winding, while their male counterparts performed 'heavy' winding, moreover women worked on 'small' drill presses and men on 'large' ones.

Finally, women themselves make a substantial contribution to gender segregation in relation to technology. Stereotypical views that women are not able to deal with technology are reproduced in society through the education system, the family, the media and so on. As a consequence women themselves feel that they are not competent where technology is concerned. Indeed, women's own identity often contains a notion of *femininity*, which excludes the fact that technological skill or familiarity with the machine is feminine. This is exemplified by the 1987 British Social Attitudes Survey which reveals that 62% of women interviewed felt that a job as a car mechanic is only suitable for men (Central Statistical Office, 1990b). Cockburn (1985) reports that women find themselves in a 'cleft stick' with regard to technological work, whereby if they are unfamiliar with technology they are viewed as 'real' women. Whilst if they become competent technologists they are seen as some kind of 'iron maiden', undesirable to men (Cockburn, 1985).

These gender inequalities towards technology start at a very young age. Children's toys vary depending on the sex of the child and the skills which children learn from these toys lay the foundations for mathematical, scientific and technological learning. Boys are encouraged to be assertive, to experiment with construction and therefore regard technical aspects of toys with confidence and familiarity. By contrast, girl's toys such as dolls are associated with caring and social interaction (Cockburn, 1983, 1985, Wajcman, 1991). Computers provide a good example of this process, as soon as they came onto the market they became gendered. This is exemplified by an Equal Opportunities Commission study in 1985 which found that of all British households owning microcomputers, boys were thirteen times more likely than girls to be using them (Wajcman, 1991). Moreover children quickly learn their respective gender roles from their parents and Wajcman found that only 4% of mothers living in a household with a computer actually used them.

The education system further perpetuates these gender inequalities. Schools, the family and the mass media all transmit values and cultures which identify masculinity with machines and technological competence. At school the hidden curriculum ensures that teachers treat boys and girls differently according to their gender and as science is generally taught by male teachers they provide gender role models which guarantee that fewer females participate in science based subjects (Wajcman, 1991). Gender is also important in the children's perceptions of themselves. Girls feel a need to behave in a certain way to be classed as feminine, and these feminine qualities are incompatible with

the qualities supposed necessary for technological competence. This situation is exacerbated as pupils choose their GCSE options at the age of fourteen - at a time when they are most vulnerable and in attempts to prove their masculinity and femininity, choose gender appropriate subjects (Spencer and Podmore, 1987). Therefore girls are less likely than their male counterparts to study scientific subjects such as maths, physics and computers at school (Wajcman, 1991).

As a consequence of this gendering process of technology, women are seen as technologically incompetent and as incompatible with machinery. Whilst technology is seen as an integral part of the male gender *"technology enters into our sexual identity: femininity is incompatible with technological competence, to feel technically competent is to feel manly"* (Cockburn, 1985, p.12). This is particularly evident in the workplace, thus some men are quoted by Cockburn as saying, *"women are too temperamental to work with machinery"....."they [women] aren't happy with machinery like a man is"* (Cockburn, 1983, p.177).

Wajcman (1991) argues that class is also an important issue here and that as women are not a homogenous group they do not have the same relationships to technology. There are obvious differences between the technical skills of women factory workers and of technically trained professional women. However Cockburn argues that despite these differences, both groups of women are found to be operating but very rarely controlling and manipulating machinery (Cockburn, 1985). Women therefore tend to be allocated the low status, low skilled controlled role of the operator, whilst their male counterparts control and reproduce the technology, occupying highly skilled jobs based on design, development, sales, installation and maintenance (Cockburn, 1987, Jenson, 1989b, Wajcman, 1991).

This is exemplified in Westwood's study of a Hosiery company. The company made a sharp distinction between the jobs women and men could perform. The majority of the women workers were machinists whilst their sewing machines were serviced and repaired by mechanics, all of who were male (Westwood, 1984). Hence, the relationship to new technology, like the relationship to skill, is socially constructed, men are not born 'handy' any more than women are born without the confidence to use a screwdriver (Jenson, 1989b).

This differential relationship of men and women to technology has led to some (albeit limited) research into issues surrounding Post-Fordism, technology and gender relations (Chiesi, 1992, Cockburn, 1985, Crewe, 1990, Zeitlin, 1992). These authors appear to come to similar conclusions, suggesting that as the new technology involved in Post-Fordist production deskills some jobs and upskills others, the former will be allocated to women, whilst the latter will be performed by male employees. Zeitlin's (1992) study examines the introduction of CAD in pre-assembly stages of pattern development in clothing companies and concludes that it has led to a replacement of skilled men by women merely performing data entry tasks.

Further evidence is available if we return to Cockburn's (1985) study of the clothing and textile industry. As CAD was introduced into the pattern room, the pattern making, grading and laying jobs were deskilled. Subsequently, the number of women employed in these activities increased. Indeed, in the companies with traditional production methods, Cockburn found just three women employed in the pattern room, this can be compared to eleven female workers in the companies that had introduced CAD. As new technology was introduced into pattern room activities, the once skilled, male domain was replaced by a semi-skilled, female workforce. Moreover, the newly created, highly skilled job categories of computer analyst were allocated to men, with not one woman employed as a systems analyst in the companies with CAD technology (Cockburn, 1985).

This is reaffirmed by Chiesi (1992) who found that the introduction of new technology in weaving and spinning occupations led to an abolition of some manual tasks, but also the creation of new tasks in the area of machine control. The manual tasks were previously performed by women, but the newly created job categories involving machine control were allocated to men. Moreover, in order to gain maximum benefit from the newly installed, expensive machinery three shifts (including a night shift) were set up. This had the direct effect of a substitution of men for women in the weaving department (*ibid*).

Crewe (1990) similarly found that the introduction of new technology in textiles and clothing firms in West Yorkshire is reinforcing and even intensifying traditional divisions, as female jobs undergo a process of deskilling while male jobs are re-skilled. Crewe goes on, arguing that many female workers who previously had skilled or semi-skilled status have since been reduced to machine-minders, whilst many men on the other hand are now finding themselves being upgraded from operators to skilled engineers or technicians.

This limited research concerning Post-Fordism, technology and gender is welcome but like the more general research concerning technology and labour, previously mentioned (such as Truman and Keating, 1987, Wajcman, 1991 etc.), it only partially examines the issues involved. Although the research considers the way in which Post-Fordist technology is gendered, it fails to acknowledge that the way in which it is utilised is also determined by the structure and nature of work reorganisation, which may itself be determined by gender (see section 3.2.2 for a more detailed analysis). Again this can be exemplified by exploring the implementation of different forms of team working. Given the evidence that both technological change and the nature of work reorganisation may be determined by gender, two scenarios may emerge when team working is implemented with a female workforce.

Firstly, as female workers are often perceived as incapable of performing highly skilled work involving autonomy, discretion and control over technology there may be a tendency to install the Japanese rather than the Swedish model of team working. This system is based upon the introduction of new technologies in order to deskill the jobs of the workforce. Female team members may therefore be encouraged to perform a wider range of simpler tasks but may not be awarded a higher degree of discretion or autonomy and thus may suffer the drawbacks of deskilling and labour intensification, becoming mere machine operators. As a result of the introduction of this technology, new, highly skilled, autonomous tasks will simultaneously be created. However the female team members may be seen as incapable of performing these tasks and consequently they may be allocated to other male personnel who are deemed capable of controlling technology and carrying out skilled work. Therefore female operatives may experience deskilling and labour intensification, whilst other male employees benefit from this process, performing jobs with a high degree of skill content.

Secondly, the Swedish model of team working may be introduced but without the changes in management style and training necessary for the female workforce to experience a higher degree of autonomy and discretion. The Swedish model, as previously explained, concentrates less on technological innovation and more on operative skills but in this situation if new technologies are introduced, female team members (like those working on the Japanese model) will be expected to perform a wider range of simpler tasks. The skill content of their existing tasks may therefore be reduced and they will not be allocated the discretion and autonomy necessary to benefit from the newly created, highly skilled activities such as computer programming. These tasks may be allocated to other male personnel who (unlike their female counterparts) are viewed

as capable of controlling technology. Female team members may therefore experience deskilling and labour intensification, whilst other (possibly male) employees will be awarded the jobs involving a higher degree of autonomy and control over technology such as computer programming.

It can therefore be seen that the technological change involved in Post-Fordist production can have a dual effect on the labour force, deskilling some existing operative jobs whilst creating highly skilled job categories such as computer programmer or analyst. Moreover, the extent to which the workforce benefit from this upskilling or experience the drawbacks of deskilling and hence labour intensification is not only determined by the type of technology introduced but by the way in which it is utilised, which is in turn determined by the nature and structure of the wider strategy of work reorganisation, together with the gender of the workforce. If the workforce are predominantly female, work will be reorganised and technology utilised in such a way that the jobs of existing female employees are deskilled whilst newly created highly skilled jobs are allocated to other male workers.

3.4 CONCLUSION

Post-Fordism and the subsequent search for labour flexibility has profound implications for the labour force. Much of the literature referred to in this chapter reveals that Post-Fordism can have a dual effect on labour, benefiting some workers whilst having detrimental implications for others. Some workers will enjoy the benefits of functional flexibility, job enrichment and the upskilling which is involved in the introduction of new technology. Others, in contrast, will experience the drawbacks of numerical flexibility, job enlargement and the deskilling and labour intensification which new technology likewise induces. Evidence suggests that the extent to which the workforce enjoy the benefits of the former or suffer the drawbacks of the latter is determined by the way in which work is reorganised and that this in turn may be determined by gender.

One way in which Post-Fordism has facilitated the search for greater labour flexibility has been through an expansion of numerically flexible working arrangements. This has resulted in an ever increasing proportion of the labour force working on a part-time basis, on temporary contracts or as homeworkers. Such contracts ensure that the workforce have considerably fewer employment rights, becoming part of the peripheral labour market. This trend obviously has connotations for both male and female employees, but from the evidence provided it is clear that women workers are the ones most profoundly

affected. The majority of the numerically flexible workforce are female, with women constituting a high proportion of part-time employees, homeworkers, and those on temporary contracts.

Explanations for women occupying the majority of these numerically flexible jobs are related to their dual role in society, having the main responsibility for unpaid domestic and caring activities, whilst simultaneously performing paid work. This dual role often acts as a constraint to women wishing to enter the labour force on a full-time permanent basis. These constraints may be mediated by the provision of welfare services such as childcare facilities, home helps and so on. This has been the case in Scandinavian countries, particularly in Sweden where welfare provision and therefore women's participation in full-time permanent employment are high. However, welfare provision varies considerably from country to country and therefore so do the constraints to women working full-time. In some countries such as Britain, welfare provision is low and therefore the constraints to women working full-time remain high. Moreover, this pattern will continue until issues concerning the availability and quality of welfare services are adequately addressed.

Another way in which Post-Fordism has facilitated the search for greater labour flexibility is via the expansion of functional flexibility. However as has been pointed out throughout this chapter the term functional flexibility is more complex than authors concerned with the economic restructuring debate (Piore and Sabel, 1984, Sabel, 1989, Leborgne and Lipietz, 1988, 1990) would lead us to believe. These authors rightly point out that functional flexibility may manifest itself in the form of job enrichment but fail to recognise that it may also result in job enlargement.

The extent to which the search for functional flexibility within the Post-Fordist economy results in either job enlargement or job enrichment is dependant upon the way in which work is reorganised. This is evident when examining the implementation of team working. If certain models of team working are implemented, particularly those based on the Swedish prototype, the workforce will experience the benefits of job enrichment. However, if the full ethos of this type of team working are not adopted or other variants of team working (such as the Japanese model) are installed, the workforce may instead experience the drawbacks of job enlargement and therefore labour intensification.

Within this chapter it has been suggested that the way in which work is reorganised and therefore the extent to which the workforce experience either job enlargement or job

enrichment may be determined by gender. As male employees enjoy job enrichment and polyvalency, their female counterparts may be exposed to job enlargement and labour intensification. Again this process has been exemplified by an examination of the implementation of team working. It has been suggested that when the workforce are predominantly female the Japanese or the variant of the Swedish model which lead to job enlargement rather than job enrichment may be more likely to be implemented. Feminist theory concerning the social construction of skill has been utilised to explain this form of gender segregation, with women being viewed as unskilled and therefore incapable of working autonomously and performing the higher order tasks involved in job enrichment.

Finally, it has been seen that the technological change involved in Post-Fordist production can also have a dual effect on the labour force, deskilling some jobs whilst upskilling others. However, the extent to which the workforce benefit from this upskilling or experience the drawbacks of deskilling and hence labour intensification is a complex issue. It is not only determined by the type of technology introduced, but by the way in which it is utilised, which is in turn determined by the nature and structure of the wider strategy of work reorganisation, together with the gender of the workforce. If the workforce are predominantly female, work may be reorganised and technology utilised in such a way that the jobs of existing female employees are deskilled whilst the newly created, high skilled activities involving and control and reproduction of technology are occupied by male employees. This differential effect of new technology in terms of gender can again be explained by the social construction of skill as well as by the fact that women are viewed as incapable of having any degree of technological 'know how' which is encompassed by the feminist theory that technology is gendered.

From the evidence provided in this chapter it can therefore be concluded that Post-Fordism has a dual effect on the labour force, benefitting some workers but proving detrimental to others. While it is acknowledged that all workers (both male and female) will inevitably experience the drawbacks of Post-Fordism, it appears that female workers may suffer the most, experiencing deskilling, job enlargement and labour intensification, while being forced into jobs which are numerically flexible and hence part of the peripheral labour market.

CHAPTER FOUR: METHODOLOGY

4.1 INTRODUCTION

Up until this point the thesis has been concerned with combining both economic restructuring and feminist theoretical perspectives in order to outline the implications of the development of Post-Fordism for gender relations at work. As explained in the previous chapter, there are three main strands to this debate: numerical flexibility; functional flexibility; and technological change. Each of these issues have been explored at a theoretical level in detail, drawing upon the work of a range of feminist writers. This has led to the development of a number of specific arguments in relation to the implications of Post-Fordism for women at work, which are outlined in the conclusions of the previous chapter (section 3.4).

In order for these arguments to be tested accurately it is necessary to go beyond the generalisations, causal inferences and assumptions of the theoretical and to draw upon empirical work, thus providing evidence from concrete experiences. To achieve this, an empirical investigation has been undertaken which focuses upon the development of one form of Post-Fordism - team working, in the Nottinghamshire clothing industry.

The aim of this chapter is to explore the nature and rationale for the empirical investigation undertaken. In order to achieve this, the chapter is divided into five main sections. The first section (4.2) examines the characteristics of the general methodology deployed and the research questions to be addressed. Explanations for the choice of methodology are provided and its anticipated aims explored (4.2.1). The questions addressed by the empirical inquiry are then outlined, and the way in which these questions test the theoretical arguments arising out of the previous chapter are discussed (4.2.2).

The next section (4.3) explores the Nottinghamshire clothing industry in more detail, providing information relating to: a) the reasons for and drawbacks of choosing the industry as the focus of the empirical inquiry (4.3.1); and b) the background and characteristics of the industry and the way in which it has recently begun to restructure (4.3.2).

The third section (4.4) of this chapter is again split into two. The first half (4.4.1) examines the way in which companies were identified to form a sample, outlining the criteria used for selection and describing the difficulties faced during the interviewing process. The quantity and characteristics of the companies chosen are also discussed. In the second half (4.4.2)

explanations are provided for the way in which different models of work organisation (production line or team working) were identified.

The fourth section (4.5) outlines the research methods utilised in each of the companies. These methods have been derived from the general methodology of the thesis (discussed in section 4.2.1) and the theoretical underpinnings of the thesis (explored in chapters two and three). This section is divided into three. The first part (4.5.1) concentrates on the way in which the research methods were designed and piloted. The second, (4.5.2) discusses the relative merits of qualitative research methods over and above quantitative techniques, as well as explaining the drawbacks of these methods and the way in which these drawbacks can and have been overcome. The third section of the chapter (4.5.3) examines the three specific research methods utilised in this study (questionnaires, group recall sessions and semi-structured interviews). The number and type of respondents are explored, together with the characteristics, reasons for use, and drawbacks of each of these specific interviewing techniques.

The chapter concludes with a final section (4.6) which looks at the way in which the results of this empirical investigation have been analysed.

4.2 METHODOLOGY AND RESEARCH QUESTIONS

4.2.1 Methodology

A sample of companies have been utilised to form the basis of the empirical enquiry. The empirical enquiry aims to test the arguments arising out of the theoretical debate outlined in the previous chapter, by analysing the development of one form of Post-Fordism - team working, in the Nottinghamshire clothing industry (explanations for the choice of this sector are provided in section 4.3.1). In order to achieve this objective, two broad groups of companies have been selected: companies utilising the traditional production line and companies which have implemented team working (explanations for the choice of these two categories of companies are provided in section 4.4.1).

As the questions raised in chapter three relate to gender relations in the workplace and in production systems, it was decided that the most appropriate means of approaching the enquiry would be in a qualitative and critical way. Feminist writing has a strong tradition of reflexivity, and of avoiding the generalising or universalising which is synonymous with traditional positivist social theory (originally represented in social science by Auguste Comte, later by John Stuart Mill, Emile Durkheim etc. and propounded in the first half of the twentieth

century by logical positivists such as Mach, Schlick and Carnap) (Hughes, 1980, Kolakowski, 1993, McNeill, 1985). Indeed, feminist theory has situated itself within a critique of positivist methodologies, a position which is anti-empiricist but not opposed to any form of empirical enquiry (for example, Finch, 1984, Harding, 1987b, Mies, 1993, Oakley, 1981, Reinharz, 1983). The forms of knowledge production created within this critique, privilege the standpoint of the subjects of the research, both as individuals and as members of particular groups, rather than privileging a universalising or 'causal law' based social science which would be characteristic of traditional empiricist approaches (such as those used by Blauner, 1964 and Glueck and Glueck, 1964).

This thesis is grounded in methods of enquiry which it seeks to use intelligibly and critically, but without adding distinctly to them. The originality of the thesis lies in novel research based on a interpretative engagement with Post-Fordism and feminist theory. It draws together those theories but does not significantly change them. Glaser and Strauss (1967) and Berger and Luckmann (1967) have developed an account of how theory can be built from the words, perceptions and construction of reality of researched subjects. They claim that theory should be grounded in the world view of its subjects rather than prior to and imposed upon its subjects (Turner, 1981). Other ethnomethodological theories also develop an epistemology which privileges the accounts of the research subject, and which requires detailed participant observation or in depth interview research without compromising the claim to rigour in the interpretation of results (writers with roots in the ethnomethodological tradition include McDermott *et al.*, 1978, Mehan, 1978 and Hester, 1985). It is in that tradition of enquiry that this study locates itself.

4.2.2 Research Questions

From the evidence provided in chapter three it is clear that the theoretical arguments to be tested by the empirical study fall into three areas of debate: numerical flexibility; functional flexibility; and technological change and are derived from the work of various feminist writers (Jenson, 1989b, Christopherson, 1989, McDowell, 1991, Wajcman, 1991, Walby, 1989 etc.). These authors are concerned with a broad analysis of all industrial sectors and where they do explore one industry in detail (for example, Christopherson, 1989), the analysis tends to be limited to the tertiary sector.

In order to empirically test the theoretical arguments outlined in chapter three, it is necessary to ask certain questions in the Nottinghamshire clothing industry. However given the specific nature of the clothing sector, particularly the fact that it is a manufacturing industry and has

a predominantly female workforce, the questions addressed by the empirical enquiry inevitably have to vary slightly from the theoretical arguments raised. The three areas of debate are explored below so as to highlight how the theoretical arguments are tested by the empirical questions. However, it must be noted that the area of debate concerning technology is pervasive and the empirical evidence suggests that it cannot easily be distinguished from other aspects of the change of production systems, this is even more the case, if 'technology' is defined, as it should be, as much more than just the machinery of production. Technology includes the system of production, the culture that supports that system, and the techniques and 'know-how' that it embodies. As a consequence, the chapter structure of the empirical enquiry is organised around numerical flexibility (chapter five) and functional flexibility (chapter six), with relevant questions of technological change and management incorporated into the latter.

4.2.2a Numerical Flexibility

i) Authors such as Leborgne and Lipietz (1988, 1990) suggest that the Post-Fordist economy is accompanied by an expansion of numerically flexible working arrangements, for example part-time work, temporary work and homeworking. In order to explore the validity of this argument it is necessary to see if team working, as one form of Post-Fordism, encourages an expansion of numerical flexibility. This is achieved by examining if the presence of numerically flexible working practices are greater amongst employees working in a team work environment than those working on the conventional production line. In particular the way in which team working leads to a greater level of redundancies and part-time work is explored and the extent to which part-time work in the clothing industry can be classed as numerically flexible is examined.

ii) Various feminist authors (Christopherson, 1989, Walby, 1989 and McDowell, 1991) argue that the majority of these numerically flexible jobs are performed by women, who consequently experience the drawbacks of the peripheral labour market. Explanations for women constituting the majority of those employed in numerically flexible jobs are provided by feminist commentators such as Pollert (1981), Rigg and Miller (1991) and Westwood (1984) and are linked to women's role in domestic and caring tasks. In order to test the validity of these arguments, it is necessary to examine the implications of the availability of numerically flexible work practices for female employees working in teams. The way in which this affects women who also work in the unpaid labour market, caring for children, elderly dependants and so on also needs careful examination.

iii) Feminist authors such as (Finch, 1989, McDowell, 1991 and Lewis, 1992) argue that welfare provision plays an important role in this process. They suggest that the lower the level of welfare provision, the greater the likelihood that women will be employed in numerically flexible jobs. Team working may have wider implications for female employees in this context; if its introduction is accompanied by the availability of flexible working arrangements and the provision of childcare facilities the constraints faced by working women will be mediated. It is therefore important to see if companies which have implemented team working are more likely to make such provisions than those operating the conventional production line.

4.2.2b Functional Flexibility and Technological Change

i) Commentators such as Dawson and Webb (1989), Tomaney (1990) and Buchanan (1994) conclude that the search for functional flexibility within the Post-Fordist economy can be achieved by job enlargement as well as job enrichment. Other authors such as Cockburn (1985), Truman and Keating (1987) and Wajcman (1991) suggest that the new technology utilised in the Post-Fordist economy can be used in a way which upskills some jobs and deskills others. In order to test these theoretical arguments it is necessary to see if team working enlarges or enriches the jobs of the workforce and uses technology in a way which upskills or deskills. Do women working in a team work environment perform a wider range of similar tasks than those working on the conventional production line or do they perform higher order tasks involving a greater degree of responsibility? Does team working utilise technology in a way which upskills or deskills the jobs of machinists? What are the implications for women working in teams? Is work more interesting? Does it lead to a greater level of satisfaction? Is it harder work? Does it lead to greater promotion opportunities?

ii) Buchanan (1994) and Tomaney (1991) suggest that the way in which work is reorganised within the Post-Fordist economy is one factor which determines if jobs are enlarged or enriched and if technology is used to upskill or deskill. They argue that some forms of Post-Fordism lead to job enlargement and use technology in a way which deskills, while others lead to job enrichment and use technology in a way which upskills. In order to test these arguments it is necessary to examine the extent to which the model of team working influences: a) the way in which jobs are enlarged or enriched; and b) the way in which technology is utilised. Particular attention will be paid to the way in which different models of team working are accompanied by wider cultural change (especially changes in management style and training).

iii) Various commentators suggest that gender also plays a role in this process. Wood

(1986), Elger (1991) and Dawson and Webb (1989) argue that women's jobs tend to be enlarged, while men's jobs are enriched. Other authors such as Chiesi (1992), Cockburn (1985), Crewe (1990) and Zeitlin (1992) suggest that the way in which Post-Fordist technology is utilised is influenced by the gender of the workforce and that this results in the deskilling of women's jobs and the upskilling of men's jobs. By drawing on the work of numerous feminist authors such as Cockburn (1983, 1985), Jenson (1989b), Truman and Keating (1987) and Wajcman (1991) etc. it can be argued that these gender differential effects are related to the concept of the social construction of skill and the notion that technology is gendered.

Given this evidence it can be suggested that forms of Post-Fordism which lead to job enlargement and utilise technology in a way which deskills will be prevalent when the workforce are female and those which lead to job enrichment and utilise technology in a way which upskills will be prevalent when the workforce are male. In order to empirically test these theoretical arguments it is important to see if gender is one factor which influences the type of team working and the wider cultural changes which determine how the jobs of the workforce are affected.

4.3 THE NOTTINGHAMSHIRE CLOTHING INDUSTRY

4.3.1 Explanations for the Choice

As previously stated, these theoretical arguments are empirically tested by a sample of firms operating both the traditional production line and team working in the Nottinghamshire clothing industry. This particular sector and locality has been selected for the focus for this empirical study for a number of specific reasons. First and foremost, the small amount of existing research concerning the implications of Post-Fordism on gender relations tends to provide an overall analysis without exploring any particular industrial sector. As noted previously, in the few cases where evidence from a particular sector is available, it tends to be limited to an analysis of the tertiary sector (Christopherson, 1989) with an examination of the manufacturing sector being almost non-existent. It was therefore felt important to reverse this trend, particularly as the mainstream economic restructuring theories (Regulationists and Institutionalists) have focused solely and specifically on manufacturing industries.

Secondly, the funding for this research was provided by the Nottinghamshire Work and Technology Programme and research involving the implementation of team working in the Nottinghamshire clothing industry was a requirement of the financial support received.

Thirdly and linked to the previous two points, the Nottinghamshire clothing industry was chosen as it represents a manufacturing sector which is in the process of undergoing considerable workplace restructuring. A series of public policy initiatives have been developed which are primarily based on the implementation of team working in companies operating the conventional production line. It was therefore felt that this would provide a good resource base and as the funding body of the research (the Nottinghamshire Work and Technology Programme) has been the main instigator of team working, it was anticipated that access to companies would be relatively easy.

Finally the industry was chosen as it is an employer of a large number of women and as such would be amenable to a study of the implications of workplace restructuring on female employees. This is exemplified in table 1, appendix 1 which reveals that female employees by far outweigh their male counterparts, accounting for 85% of employees in the companies interviewed for this thesis. This pattern is true irrespective of the type of work organisation in operation (the traditional production line or team working).

Despite the advantages and in some cases requirements of conducting this empirical research in the Nottinghamshire clothing industry, two main problems have arisen during the course of the research, which may not have been apparent had a different industrial base for the empirical research been chosen. The first difficulty concerns the debate about the extent to which the industry has ever been dominated by Fordism. Some commentators such as Wilkinson (1993) have argued that the clothing industry has never experienced Fordism to the same extent as other industrial sectors such as the automobile industry, and therefore question the extent to which the introduction of team working can be classed as Post-Fordist. In part, these commentators are correct, most industrial sectors during the post-war period have experienced Fordism, but by varying degrees of severity, and if placed on a spectrum of intensity, the clothing industry would probably be placed towards the lower end. However, this does not necessarily infer that Fordism was never prevalent in the industry, it was but not to the same degree. Nor does it infer that the adoption of team working is not substantially different from its predecessor and cannot be classed as Post-Fordist. Nevertheless had the research been conducted in another industrial sector better known for the presence of Fordism, the empirical investigation would have been open to far less scrutiny. The second area of difficulty concerns the fact that the majority of employees within the clothing industry are female. This renders a comparison of the respective implications of team working on male and female employees difficult.

4.3.2 Background and Characteristics

The clothing industry, along with the textiles sector is a key employer in Nottinghamshire, it employs approximately twenty four thousand people (Crewe, 1994). The majority of these employees are female, who constitute 62% of the workforce. Over half the workforce are employed in large firms, however the majority of the companies in Nottinghamshire are small, with over three quarters employing less than fifty people and only 6% employing more than two hundred. The clothing sector is particularly important in the region, with garment producers out numbering textile manufacturers by a ratio of two to one (*ibid*).

The Nottinghamshire clothing sector, like other industrial sectors throughout the western world has, during recent years, faced increasing competition from low cost countries in the far east, such as South Korea, Malaysia, Taiwan etc. and more recently from former Eastern European countries. In order for it to survive, the industry has been forced to reorganise and restructure during the last two decades. This reorganisation has involved some companies adopting a new strategy based on a pursuit of greater flexibility. There has been a change of emphasis away from the mass production of standardised, low cost, low quality garments, towards the adoption of smaller batch production of semi-customised, high quality garments with a degree of design content. Of particular importance to this pursuit of flexibility is the realisation that quick response to fashion change is paramount and consequently the traditional two season fashion calendar has been replaced by four or five.

These trends are exemplified in the 'Nottinghamshire Textile and Clothing Sector: a state of the industry report' (Crewe, 1994). The report reveals that the relative importance of large orders within the county has fallen, whilst the emphasis on medium sized and very small orders has increased. More than half the firms reported shorter lead times, highlighting the growing importance of quick response production. Furthermore, between 1992/3 and 1994 16% of the firms stated that their products had increased in value from the low to medium price range, indicating that price factors are becoming a less important determinant of competitiveness and that there has been a shift of emphasis in some companies from the production of low to higher quality garments. The report also revealed an increase in product diversity, signifying a move away from economies of scale towards economies of scope. Indeed 20% of the firms stated that product diversity had increased in recent years.

This restructuring of the Nottinghamshire clothing industry has been aided by a series of public policy initiatives, which during the 1980's and 1990's have aimed to enhance and improve the competitiveness of the local industry. One of the key initiatives deployed has

been based on the implementation of team working in traditional production line companies. The main instigator of the implementation of team working has arguably been the Nottinghamshire Work and Technology Programme. The Programme was created both as a resource to assist firms in making the transition to team working and as a laboratory for monitoring and improving its effectiveness. Along with various other consultants in the area, the programme is continuing to actively encourage companies to implement team working.

4.4 INTERVIEWING COMPANIES AND IDENTIFYING MODELS OF WORK ORGANISATION

4.4.1 Interviewing Companies

In order to adequately address the specific empirical questions outlined in section 4.2.2, it was initially decided to interview companies before the implementation of team working and at a specific time period after (a panel interview). It was thought that this would be possible via links with the Nottinghamshire Work and Technology Programme which, as previously stated, funded the research for this thesis. It was anticipated that interviews would be carried out in companies before the Nottinghamshire Work and Technology Programme implemented team working and returned to at a later date once the system of team working was up and running. However, members of the programme refused access to these companies, for reasons that were never made completely clear. In fact they insisted that the companies they had contact with should not be visited.

Given these constraints it was impossible to carry out panel interviews. It was decided that the next best alternative would be to visit two separate categories of companies: those operating the traditional production line and those utilising team working. This would enable a comparative study of companies with and without team working. Obviously this leads to methodological problems, since one is not comparing like with like. But this situation was partially overcome by, wherever possible, interviewing companies operating both the traditional production line and team working.

In order to identify potential companies, the researcher contacted, by telephone, all the companies listed in the Nottinghamshire Textiles and Clothing Industry Capacity Register³ (Wigfield, 1994b). Managers of twenty-five companies agreed to participate in the study, fifteen of which were operating the production line and ten of which were operating a model

³

The Capacity Register contains information about all textiles and clothing companies in Nottinghamshire and is used to market the industry on a national scale.

of team working. However, it was decided that this sample was too small and that it would be necessary to visit companies outside the Nottinghamshire region in order to obtain a large enough sample. A further eight companies were obtained through the snowball technique, all of which were located outside the Nottinghamshire region and agreed to participate in the study. These additional companies were identified by individuals employed by the Nottinghamshire Work and Technology Programme who had contacts with firms outside the immediate locality. Table 3, appendix 1 reveals the location of the companies in the sample. From this table it can be seen that the majority of the companies are located in Nottinghamshire (76%). Twelve percent of the companies using the traditional production line are located outside the Nottinghamshire region, compared to 37% of those operating team working. The sample of companies are situated in a range of urban and rural localities and this is the case for those in Nottinghamshire as well as those located in other geographical areas.

Despite the decision to omit panel interviews it can therefore be seen that difficulties were still encountered in gaining access to companies. Explanations for this are centred around the fact that the research methods utilised are predominantly qualitative and involve in depth interviews with the workforce, an issue which is expanded upon in section 4.5.3b. As a result of these difficulties, the choice of companies was inevitably limited and it was impossible to be selective in terms of employee size, principal products, location and so on. Basically it was necessary to research those companies which were willing to allow access. In total thirty-three companies formed the sample, seventeen of which utilise the production line as their principal method of production and sixteen of which have some form of team work in operation (table 2, appendix 1).

Although it was not possible to be selective in terms of the sample of companies, those which participated in the study produce a diverse range of products (table 4, appendix 1)⁴ and have various workforce sizes (table 5, appendix 1). Nevertheless, it must be noted that companies with more than fifty employees dominate the interview sample (76%), and none of the companies employ less than five workers. These tendencies towards medium and large size manufacturers are particularly pronounced in the team working companies, indeed not one of the companies operating team working has fewer than fifty employees. This may

⁴ One non-garment producing company was included, a producer of curtains. This company was included in the interview sample as it provides a particularly good and accessible example of team working.

indicate that the size of companies operating team working are, on average, larger than those utilising the traditional production line. This could suggest that the cost of implementing team working is beyond the reach of smaller enterprises and that they are inherently more flexible (particularly in terms of the workforce who tend to have a number of skills and can 'put their hand to almost anything') than larger ones (see section 6.2.1 for a more detailed explanation) and thus their need for the implementation of team working is less apparent.

Although the companies represent various geographical locations, product types and employment sizes, it must be noted that the sample is not large enough to attempt to identify or explain disparities which are determined by these criteria. The sample is, however, large enough to enable certain generalisations to be made about the overall implications of team working for gender relations. Indeed, all the companies which are known to be operating team working in Nottinghamshire have been included in the sample, together with an additional six companies from various other localities. The sample therefore represents a cross section of companies operating team working in the clothing industry. It must, however, be noted that none of the sampled companies utilised for this piece of research are owned by individuals from ethnic minorities. It is often difficult to encourage ethnic minority businesses to participate in empirical studies. Indeed the researcher has experienced difficulties in encouraging the managers of these firms to complete questionnaires for a separate study of the Leicestershire clothing and textiles sector.

4.4.2 Identifying Models of Work Organisation

From these thirty-three companies it has become clear that although there are very few differences in the methods of work organisation between the companies operating the conventional production line, the way in which work is organised within the companies utilising team working varies substantially. In order to illustrate this, the methods of work organisation utilised in both groups of companies (those operating the production line and those which have implemented team working) are now examined.

4.4.2a Production Lines

The specific nature of the conventional production line varies from company to company, however, all the companies in the sample which were operating this system of production appear to have a number of common characteristics. They can all broadly be characterised as having a rigid demarkation of operative functions. Operatives are generally seated at individual workstations which are located in long rows across the factory floor. Work is highly

fragmented and therefore operatives tend to remain on one operation each and every day, unless it is absolutely essential to move, i.e. due to absenteeism. As a result, individual machinists gain little knowledge about the broader process of garment construction and, particularly in larger companies, may never see the finished product that they are working on. Within this system, garments typically move in a unidirectional flow down the line, usually in bundles, and therefore work in progress is high. Some larger companies use an overhead conveyor system instead of bundles, but this was only apparent in one of the companies, which had recently implemented the Eaton System.

4.4.2b Team Working

It was explained, both in chapters two and three, that existing literature indicates the presence of two principal models of team working, those whose principles originate in Japan and those with Swedish origins. However, the systems in operation in the companies selected for this piece of research cannot easily be classified into these two categories. Instead, they all appear to utilise manufacturing philosophies which originate in Japan rather than in Sweden.

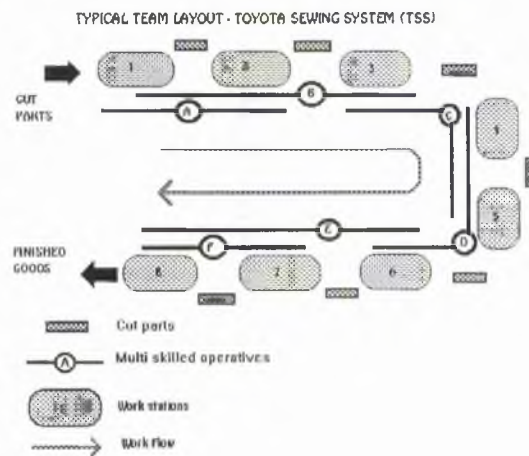
Sabel (1989) suggests that Japanese models of team working have two principal characteristics, they utilise both the Kanban and Just in Time (JIT) philosophies (see section 2.3.1b). However, the systems of team working in operation in the companies selected to form the sample tend to emphasise one of these two philosophies, rather than both. Some companies operate the single garment system (often referred to as the Toyota Sewing System - TSS) and place more emphasis on the JIT philosophy, while other companies operate a system of team working which emphasises the Kanban philosophy.

However, as is explained in chapter six, the fact that all the companies utilise either the Kanban or TSS principles is not sufficient to place them in the Japanese rather than the Swedish category of team working. The Japanese and Swedish models of team working highlighted in existing literature are 'ideal types' and in reality not all systems of team working fall neatly into one of these two categories. The way in which team working affects the workforce is a complex issue, which is not only determined by the nature of the system of team working implemented but also by the degree of cultural change experienced within the company. It is therefore a combination of these factors which determines if the companies can be likened to either the Japanese or Swedish ideal types.

The Toyota Sewing System (TSS) originally developed in the Japanese car industry, and

was pioneered in the mid-1980s as an application of Just In Time principles to garment assembly in the UK. Under this system several multi-skilled operatives work at a series of workstations, often on a 'U' shaped module. Operatives usually stand to sew in order to enable quick and easy movement between workstations, as well as to promote flexibility and communication within the system. Operatives work with single garments from a lay and work-flow progresses sequentially. A typical team lay-out in the single garment model can be seen in figure 2.

Figure 2. Typical Team Layout - Toyota Sewing System (TSS)

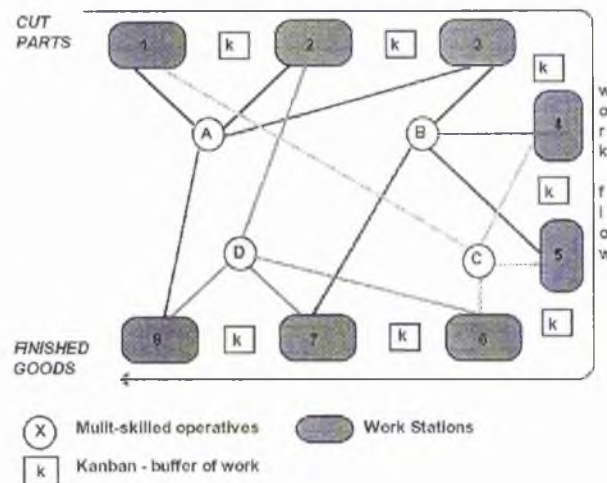


In this system there are eight workstations and six operatives. The operatives are each responsible for between two and three workstations. Production is pulled back through the line, by what is commonly referred to as the 'bump back' system. When the final operative - number eight, completes the garment, it is placed aside and the operative then moves back down the line to operative number seven and takes control of the work, even if operative number seven is mid way through an operation. Operative number seven then becomes free and obtains work from operative six, operative six obtains work from number five and so on, until operative number one is free to commence another garment. To do this operative number one pulls more work on to the line, taking it from a stack of cut work (NEDO, 1991b, Tyler, 1994).

The Kanban System, as its title suggests involves the use of Kanbans. The word Kanban is Japanese for 'Card' and is derived from the practice of using conveyance and production cards to direct work movements. A Kanban gives an operative authority to proceed or to produce. A Kanban is the buffer of work between operations which is set at a predetermined

level and is adhered to by the operators. Like the Toyota Sewing System, the Kanban system often takes the form of a 'U' shaped lay-out (although this is not a necessary requirement) within which multi-skilled, self organised operatives work. Under this system Kanban control of work-flow is a prominent activity and is used to control the inventory levels in the system. Bundles of work are generally used within this approach rather than single garments and so the maximum inventory in any buffer can be set at two, three, four or more bundles. When the Kanban is empty or only partly filled, the operator has the authority to fill it. When full, production on that operation must cease and the operative must move to another workstation where the Kanban is not full and where work is available. As bundles are used in this system, machining times at any workstation tend to be longer than on the Toyota Sewing System and therefore operatives in general remain seated. At intervals operatives leave their seats and resume work at a different workstation. A typical Kanban model can be seen in figure 3.

Figure 3. Typical Team Layout - Kanban



In this system there are eight workstations and four operatives. Each operative is responsible for four workstations. Operatives move from workstations where the Kanban is full to those where the Kanban is empty or only partially full.

The companies selected to form the sample all operate systems of team working which are variants of either the TSS or the Kanban model. This is revealed in table 6, which outlines

Table 6. Characteristics of the Team Working Systems in Operation

Company*	Kanban / Bump Back	Single Garment / Bundle	Stand / Sit	Operatives per Team
1	Kanban	Bundle	Sit	5
2	Kanban	Bundle	Sit	5
3	Bump Back	Bundle	Stand	9-10
4	Kanban	Bundle	Sit	5-7
5	Bump Back	Single Garment	Stand	10-12
6	Kanban	Bundle	Sit	4-9
7	Bump Back	Single Garment	Stand	5-8
8	Bump Back	Single Garment	Stand	5-8
9	Bump Back	Bundle	Stand & Sit	5
10	Kanban	Bundle	Sit	4
11	Kanban	Bundle	Stand & Sit	5
12	Kanban	Bundle	Stand	5-6
13	Kanban	Bundle	Stand & Sit	3
14	Kanban	Bundle	Sit	20+
15	Kanban	Bundle	Stand	4
16	Bump Back	Single Garment	Stand	5-8

* In all the companies, each team comprises of a number of multi-skilled machinists who move between workstations and each team produces a complete garment. The only exceptions to this are companies 6 and 14. Company 6 operates a cellular system whereby a number of teams collectively produce the complete garment. Each team produces a percentage of the garment and then passes it on to the next team in the line. Operatives on this system are multi-skilled and move between workstations. Company 14 operates a system of team work which is very similar to the traditional production line. Operatives are divided into a number of teams according to their skill. There is an overlock team, a flat seam team and a combination team. Machinists inevitably remain on one workstation. As one team completes part of the garment it is passed onto another team. This company is in the very early stage of implementation and is still developing the system of team working.

the key characteristics of the systems of team working in operation. Ten of the companies can be identified as operating a system of team working based on the Kanban prototype. Six of these have all the characteristics of the Kanban model (Kanban control of work-flow, bundles of work and a seated workforce), with a further four companies having these characteristics but with some or all of the workforce standing to sew. Six companies can be identified as operating the TSS model of team working. Four of these have all the features of the TSS model (bump back control of work-flow, single garment and operatives standing to sew), whilst a further two companies operate the bump back system characteristic of TSS

but utilise bundles of work rather than single garments. Although, as already stated, the companies selected to form the empirical enquiry represent various, geographical locations, product types and employment sizes, the sample is not large enough to attempt to identify if any of these criteria determine the system of team working implemented (i.e. either the TSS or Kanban model).

The size of the teams vary both between and within individual companies. Table 6 reveals that the size of the teams in the companies range from three operatives up to twelve. Company 14 is the only exception, with over twenty operatives per team. Teams as large as this are not usually conducive to team work and this reflects the fact that company 14 is still at an early stage of implementation and operates a system of team work which has not yet discarded the key attributes of the production line. The size of the teams appears to be determined to a certain extent by the type of team working system in operation, with those companies utilising the TSS prototype tending to have slightly larger teams than those operating the Kanban model.

It can therefore be seen that the models of team working implemented in the companies selected to form the sample cannot be classified by those with either Japanese or Swedish origins but must instead be categorised by those utilising either the TSS or Kanban philosophies. Moreover, the design of the team working system is entirely company dependant and sometimes the method adopted incorporates elements of each of these team working concepts. Consequently, throughout the empirical investigation in chapters five and six, rather than exploring the different experiences of machinists working in Swedish and Japanese ideal types of team working, the contrasting implications of the TSS and Kanban systems of team working for the female workforce are explored.

4.5 RESEARCH METHODS

4.5.1 Designing the Research Methods and Piloting

The methods utilised to analyse the sample of companies are multiple and pragmatic and involve both quantitative and qualitative techniques. The empirical research methods fall into three main categories: informal interviews with management; group recall sessions with female machinists; and questionnaires directed towards machinists participating in the group recall sessions. The first two more qualitative techniques were designed by myself, whilst the more quantitative formal questionnaire was designed by researchers within the Nottinghamshire Work and Technology Programme as a means of monitoring and evaluating all the companies in which the programme had actively implemented team working. Due to

the difficulties which had been encountered in identifying companies which were willing to participate, it was anticipated that by using this questionnaire comparative information could be gained for companies which had implemented team working with the aid of the Work and Technology Programme but were unwilling to allow me access.

Each of the three research techniques were initially piloted in order to highlight any deficiencies and hence make any necessary amendments to the interview/questionnaire schedules. Pilot interviews were conducted in February 1994 in four companies (encompassing companies operating both the production line and team working), two of which were returned to later. A few minor problems were found with the management interview and group recall schedules, but the structure of the questionnaire caused more concern. Difficulties with the questionnaire primarily concerned the inability of respondents to understand and adequately answer the questions and the fact that some of the questions were constructed in a potentially biased fashion (these issues are expanded upon in section 4.5.3a). However, in order for the results of the questionnaire to be directly comparable with those of the Nottinghamshire Work and Technology Programme, hence providing me with a wider data source, it was impossible to alter the questionnaire in any way. Therefore the group recall and management interview schedules were altered slightly, whilst the questionnaire design was left unchanged. The final interviews were conducted in all the sample of companies between the months of April and October 1994.

4.5.2 Reliance on Qualitative Research Methods

Due to the problems associated with the questionnaire, the qualitative research methods (informal semi-structured interviews and the group recall sessions) are the prime research methods relied upon in this thesis. The questionnaire findings are only utilised in order to provide background information or to support existing qualitative evidence and if discrepancies between the questionnaire and qualitative findings are discovered, the latter are taken as a more reliable and accurate reflection of the true feelings and beliefs of the respondents. Given these difficulties and with the benefit of hindsight the questionnaire should not have been utilised and another one constructed. As it turned out the Nottinghamshire Work and Technology Programme were only successful at implementing team working in a limited number of companies, all of which had been included in the sample anyway and hence the additional data source that their questionnaire results were to provide were of limited use.

The decision to concentrate upon qualitative methodologies was not, however, solely determined by the difficulties encountered with the machinist questionnaire but also by the general advantages of using qualitative rather than quantitative methodologies. It was felt important to use qualitative methodology as the primary data collection source in this research as it is believed that satisfactory explanations of work experiences, particularly with respect to gender relations, can be best provided by a strong appreciation and understanding of the perspectives, views and beliefs of the actors involved, something which quantitative methods cannot achieve. A number of distinct advantages of utilising qualitative methodologies such as informal semi-structured interviews and group recall sessions have been identified and are outlined below. It must, however, be noted that these refer to qualitative methodology in general, advantages of the specific techniques deployed in this research are examined in section 4.5.3.

The first advantage of qualitative methodology relates to the fact that the information collected is likely to be more accurate than that provided in formal questionnaire or survey techniques. This is because the interviewer is able to explain the question to the respondents in more detail thus preventing any inaccuracies or discrepancies.

Secondly, detection of false replies are much easier in qualitative 'face to face' interviews. They can be established by the tone of voice, facial expressions and physical actions and can be eradicated by returning to the same question at a later stage in the interview process.

The third advantage is that delicate issues can be handled more sensitively and effectively by personal contact during the interviewing process. If quantitative methods such as questionnaires are utilised, respondents can quite easily avoid answering such questions. But with qualitative 'face to face' interviews this is more difficult, the respondent is more or less forced to reply, even if it is only to say that they refuse to answer a particular question, in which case explanations for their reluctance to reply can be monitored. Additionally, if respondents appear likely to be offended by any further delicate questions they can quite easily be omitted from the interview schedule, something which is quite impossible with more formal quantitative techniques.

Finally, with qualitative 'face to face' interviews it is possible to adapt the language of the questions to match the ability/educational level of the respondents. If the participants are unable to understand the question it can be rephrased differently, again this is not possible with more quantitative methods.

As with all methodologies there are always some problems and imperfections and qualitative methodology is by no means an exception. Although qualitative methodologies such as informal interviews and group recall sessions are advantageous over and above quantitative techniques they are also problematic. The difficulties involved in utilising such qualitative methodologies are outlined below. However, the reader must be aware that certain interviewing techniques can be deployed and have been in this research in order to reduce these potential drawbacks wherever possible.

The first difficulty relates to the handling of the information collected. If not handled correctly certain elements of the information gained from qualitative research methods can be highlighted and used to confirm the researchers interests and suspicions, whilst at the same time, other elements which contradict the researchers views and beliefs and challenge or partially disrupt their interpretation can be excluded. In order to limit such imperfections from this research certain procedures were followed. As the data obtained from the semi-structured informal interviews and in particular the group recall sessions involved the examination and analysis of thousands of lines of transcripts it was decided to define criteria for selection of quotations before the data analysis process commenced. It was felt important that the quotations utilised were representative of the views and beliefs of the majority of the participants. This was achieved by classifying answers into a number of groups, identifying the most common group of answers and selecting those quotations. This procedure was more difficult for the group recall sessions than for the informal interviews as variations between the groups themselves not only existed but between individual responses within groups.

Secondly, the relative status of the researcher and those being researched may distort interviewee responses. In order to eliminate such distortions, wherever possible, in the research for this thesis measures have been taken to ensure that the relationship between the interviewer and interviewee are the same. However this is not always within the control of the interviewer, certain interviewees may interpret the relationship differently than others.

Another potential problem with qualitative methodology is that if the interview settings and the way in which the questions are asked vary only slightly between one interview and another, the replies of the respondents may be subject to bias. This may arise if questions are asked in a different tone of voice, if the interviewer states their opinions, and is visually surprised at or even comments upon answers. In order to avoid these potential biased situations, wherever possible, all interviews during this research programme were conducted

in similar settings, in a private room away from the factory floor, other personnel were not present, as far as possible identical questions were asked to each respondent or group of respondents and the researcher's own views and opinions were never expressed to the participants.

However, during both the informal semi-structured interviews with management and group recall sessions with machinists the interviewer was asked questions. Most of which concerned the nature of the research, why it was being conducted, what a Ph.D involved, if the results would be published and so forth. A conscious decision was made to answer these questions as honestly as possible. These people were investing time and effort into being interviewed and answering their questions seemed the decent thing to do. However, at the same time consideration was paid to previous research carried out (Sjoberg and Nett, 1968, Galtung, 1967) suggesting that interviewers should not enter into conversation with interviewees and particularly should not answer questions for fear of biasing the interviews. Nevertheless it was decided that by answering these questions the replies of the participants were not unduly influenced. It was, however, decided to refuse to answer some questions, particularly those questions asked by management in relation to the replies and statements that the machinists had made. An agreement had been entered into with the machinists participating in group recall sessions that everything they said during the discussion would be confidential and that nobody else would listen to the tapes or see the transcripts.

Given the advantages of utilising qualitative research methodology over and above more quantitative techniques and the fact that most of the potential drawbacks outlined here can be mediated by employing certain interviewing techniques, it is believed that the decision to concentrate upon qualitative as opposed to quantitative methodologies, has maximised the quality of the research undertaken.

4.5.3 The Nature of the Three Research Approaches

Each of the three empirical research methods deployed shall now be explored, examining their characteristics, the number and type of the respondents, the reasons for use and drawbacks. For reasons of accuracy and reliability all interviews were recorded on audio tape and then fully transcribed. Written notes were additionally taken in order to record the researcher's own reactions to certain situations and to reflect on the fieldwork as it progressed.

4.5.3a Operative Questionnaire

The questionnaire is based on the semantic differential measurement, pioneered by Osgood, Suci and Tannebaum in 1957 and is designed to assess similarities and/or disparities in the daily working lives of machinists working in both a production line and team working environment. The questionnaire involves the placement of a number of pairs of statements on a horizontal line with five boxes in between. The respondents are required to tick one of the five boxes in order to indicate which statement they agree with. The nearer to a statement they tick, the stronger they agree with that statement. If the respondents do not agree with either statement they are required to tick the central box. Two separate, but similar questionnaires were utilised for this purpose (see questionnaires in appendix 2), one for machinists working on the conventional production line and one for machinists working in teams. The questionnaire designed for machinists working in teams (as already stated) is utilised for monitoring and evaluating the implementation of team working by the Nottinghamshire Work and Technology Programme.

Wherever possible the machinists to be interviewed were picked by the researcher at random. This was achieved by selecting operatives working on various workstations from a schematic diagram of the shop floor. All machinists involved in the group recall sessions were asked to complete a questionnaire. It was decided to encourage respondents to complete the questionnaire in the presence of the researcher rather than in their own time. The reasons for this were twofold: respondents were able to ask for clarity over particular questions; and it was possible to ensure that the answers came directly from the respondent and were not influenced by the opinions of friends or relatives. Where possible and feasible, questionnaires were completed prior to the group discussion, this ensured that operative answers were not influenced by the comments of others during the discussion.

In total ninety-eight machinists completed questionnaires in twenty-nine of the thirty-three companies. Fifty-nine of the operatives were working in fifteen of the seventeen traditional production line companies and thirty-nine were working in fourteen of the sixteen companies operating team working (table 7, appendix 1). Due to circumstances beyond the control of the researcher it was impossible to conduct questionnaires with all the machinists (126) who participated in the group recall sessions. In some instances machinists were only allowed time to participate in one of the two types of interviews and in light of the problems of the questionnaire they were asked to participate in the group discussions rather than complete the questionnaire. Managerial restrictions also meant that questionnaires could not be conducted in four of the companies, but (as explained in section 5.43b) group recall sessions with machinists were carried out in these companies.

All the questionnaire respondents were female and represent a range of age groups (table 8, appendix 1), although quite clearly there are very few elderly respondents within the fifty-six to sixty-five age group. There appears to be a clear distinction between the age of the operatives working on the production line and those working in teams. The operatives working in teams tend, on average, to be younger than those working on the traditional production line. The majority (80%) of the respondents working in teams are below the age of thirty-six, the comparable figure for respondents on the production line is just 39%. This may be explained by the fact that older operatives have worked on the traditional production line all their working lives and are used to that system of production and the payment system that accompanies it and hence are more reluctant to change to team working. Moreover, the adoption of team working often involves operatives standing instead of sitting to work and this adjustment may prove more difficult for older operatives.

Table 9, appendix 1 reveals the length of time that the operatives have worked in the industry. From this table it is clear that operatives remain in the industry for substantially long periods of time. The majority of operatives who completed the questionnaire (55%) have worked in the industry between six to twenty years. Moreover 34% of all respondents have worked in the industry for more than twenty-one years, suggesting that once machinists enter the industry they very rarely leave. This can in part be explained by a lack of alternative employment opportunities and in part by the fact that the machinists have never experienced work elsewhere and therefore are reluctant to 'take a risk' and leave an industry with which they are, in general, satisfied.

A comparison of the length of time operatives working on the production line and in teams have worked in the industry reveals a contrasting pattern, with team working respondents on average (measured by the mode) working in the industry for just six to ten years, compared to twenty-one to thirty years for those working on the traditional production line (table 10, appendix 1). This can again be explained by the fact that operatives who are younger have less experience in the industry and of production line work and therefore are more amenable to working under new organisational methods such as team work.

Of those respondents working in teams at present, all but three (92%) had worked on a production line previously. Nearly half those working in teams had done so for between one and two years and only 3% had worked in teams for five years or more (see table 11, appendix 1), thus reflecting the relatively recent emergence of the concept of team working in the Nottinghamshire clothing industry.

The questionnaire was utilised alongside more qualitative techniques (explained in detail in sections 4.5.3 b and c) in order to obtain concrete facts about the working lives of the machinists and in particular the contrasting experiences of working on a production line to working in teams. It was envisaged that the questionnaire would generate and accumulate ordinal, objective and standardised data which could be subject to statistical manipulation. Such data is easily comparable and unlike the more qualitative methods deployed, is independent of the research setting or of the actions of the interviewer. Indeed machinists were left to their own devices to read and answer the questions and as such could not be unduly influenced by the way in which the questions were asked.

A number of difficulties were experienced with the utilisation of this questionnaire, all of which are outlined below:

Firstly, as stated previously, this questionnaire was designed by researchers of the Nottinghamshire Work and Technology Programme rather than by myself and as such contains several questions which are constructed in a potentially biased fashion. For example, in a number of cases the statements chosen are not opposites and therefore respondents may agree with both statements but can only tick one box, hence giving biased results. For example:

Working harder makes the day go quicker Working harder makes you tired

In this instance respondents may agree that working harder makes the day go quicker and that it makes them tired, but are only be allowed to agree with one statement.

The second difficulty with the questionnaire concerns the nature and characteristics of the respondents. The questionnaire appeared to be an obstacle for the machinists to overcome. Some machinists found this task quite daunting and were reluctant to answer questions or tick boxes for fear of 'getting the answer wrong'. It was explained to them that there are no right and wrong answers but nevertheless they remained apprehensive. The machinists often asked each other, "what have you put for this question?" as though their opinions were incorrect and had to be validated by their colleagues. This reluctance to complete the questionnaire can be explained by the fact that the machinists were predominantly working class women (this issue is expanded upon later), who tend to lack the required confidence and in some cases ability. Indeed a common reoccurring comment made was, "I can't answer that, I'm thick you see that's why I'm a machinist".

The inability of some machinists to complete the questionnaire is highlighted by the fact that quite a large number of respondents had difficulties reading and writing, emphasising their lack of formal education, for example a large number of the machinists had difficulties spelling simple words such as 'English'. Table 6, appendix 1 clearly reveals the low level of formal education received by these machinists, with 81% of all respondents having no formal qualifications. This pattern was similar for both those working on the production line and in teams, 86% and 72% respectively having no qualifications. This highlights the problematic nature of utilising complex questionnaires with such interview samples and reveals both the advantage and importance of conducting more qualitative interviewing techniques such as group discussions.

Thirdly, as with all formal questionnaires, problems concerning the trustworthiness of respondents inevitably arose and false replies appeared more difficult to detect than when more qualitative methods were deployed. Certain questions concerning the accuracy of the answers were evident, i.e. Is that what the respondents really think? Are they answering in a way that they think their friends would want? Are they answering in a way that they think the interviewer would want? In order to eradicate these potential problems certain interviewing techniques were utilised. In an attempt to remain neutral, the researcher's opinions and beliefs were not expressed during the interview process and it was made quite clear at the beginning of the interview that it was the interviewees' opinions that were being sought, nobody else's.

The fourth problem relates to sampling errors concerning the machinists chosen to participate in the questionnaire, particularly for those working in teams. As previously stated, wherever possible the machinists to be interviewed were picked by the researcher at random. This was achieved by selecting operatives working on various workstations from a schematic diagram of the shop floor. However, in some instances this was not possible and management chose the machinists to be interviewed. When this was the case those machinists who management knew enjoyed team working were often chosen in order to portray the system as beneficial as possible. Thus the results may be distorted slightly in a way that underplays the disadvantages of team working.

Given these difficulties with the questionnaire, particularly the biased nature and complexity of the questions, and with the benefit of hindsight (as stated previously) this particular questionnaire should not have been utilised and another one constructed.

4.5.3b Group Recall Sessions with Female Machinists

Group recall sessions were conducted with female machinists working on both the conventional production line and in a team work environment. The use of such group recall sessions in the clothing industry has been pioneered by David Middleton of Loughborough University who has utilised them as a means of identifying instruments to support team production and training. This approach has been designed to encourage people to jointly construct accounts of their experiences in conversations with one another and is helped by the fact that people habitually recall significant aspects of their individual and shared experiences with one another (Middleton, 1991).

According to Middleton carefully chosen key words and phrases should be used to prompt participants to recall events or significant circumstances within their day to day working life. During the pilot interviews this approach was utilised but later discarded. Those being interviewed did not respond to key words such as 'this factory' and more importantly felt uncomfortable with this structure. A list of questions were therefore constructed which all the group recall sessions could follow (appendix 3). These questions were designed to act as initial stimuli to encourage the interviewees to expand upon issues and take part in active dialogue with one another. This tended to place the participants in a situation which they were much more familiar and therefore comfortable with. These feelings of familiarity and belonging appeared to encourage the participants to feel at ease and so the voice of the first person often triggered other participants to recall their working experiences.

These group discussions appeared to prompt both agreements and disagreements amongst participants. In other forms of methodology disagreements reflect inconsistencies within the results and should be avoided. However both agreements and disagreements in this context can be utilised to explore certain issues in further detail and are therefore important analytical resources which should be encouraged.

Overall thirty-three group discussions took place, one in each of the companies and in total one hundred and twenty-six machinists participated. Seventy-three of these machinists worked in the seventeen production line companies and fifty-three in the sixteen team working companies. The number of participants in each of the group recall sessions ranged from two to six operatives. All the participants in these group recall sessions were female and, as previously pointed out, ninety-eight of these machinists, working in twenty-nine of the thirty-three companies also completed a questionnaire.

Various standard methodologies already exist for the examination and analysis of peoples experiences of work such as questionnaires, in depth interviews, attitude scales etc. and the issues raised in these group recall sessions could perhaps all have been raised by these alternative research techniques. However, group discussions are advantageous over the alternatives as they avoid the imposition of predefined answers on the respondents, raise issues within a group setting allowing for a joint production of accounts and provide an insight of what the 'real' working situation is like.

Group recall sessions were incorporated into this study for three main reasons: The social class of the respondents; the sex of the respondents; and the nature of the research topic. Firstly to examine the social class of the respondents. Although there are always some exceptions, the majority of the women machinists interviewed can be identified as working class, they belong to lower socio-economic groups (C2 and D), have often had very little formal education, leaving school at an early age without any official qualifications and tend to live close to the workplace in less wealthy geographical locations. As a group they therefore tend to be far less confident than their middle class counterparts and less comfortable when faced with quantitative research tools such as questionnaires, often being reluctant to answer questions for fear of 'getting it wrong'. This reveals the importance of more qualitative methodologies such as group discussions. With these group recall sessions machinists are able to discuss their working lives with each other in a situation which is not that far removed from their everyday experience. Hence avoiding a situation where a list of questions are fired at them as though 'under interrogation' by the interviewer.

The unwillingness of the working class to complete formal questionnaires and preference for qualitative methodologies has also been discovered in previous research projects initiated by the researcher. In one study carried out, investigating the impact of unemployment in three areas of Sheffield (Wigfield, 1988), clear differences emerged between working and middle class respondents in different areas of Sheffield. Those living in Broomhill (a middle class and predominantly student area) and Dore (an upper/middle class suburb) were quite willing to complete questionnaires, expanding on questions asked and approaching me to ask if they could help in any way. Residents at Burngreave (an inner city, working class area) on the other hand, were far less willing to respond to the questionnaire, believing that they 'might get the answer wrong' and often walking across the road in order to avoid being asked.

Secondly, to explore the issue of the sex of the respondents. As previously stated, all the machinists who were interviewed were female. However, women in general tend to be less

confident and less sure of their own abilities than their male counterparts. This can be explained by a variety of reasons all of which have been discussed elsewhere (Pollert, 1981 and Westwood, 1984) and are related to the social construction of gender relations in our society. Various feminist researchers referred to in section 4.2.1 (Finch, 1984, Harding, 1987b, Oakley, 1981, Mies, 1993, Reinharz, 1983) have pointed out that women tend to feel less comfortable answering formal questionnaires and therefore the need for more qualitative techniques is evident. A large part of these women's lives are spent socialising and talking to one another (Roberts, 1981) and therefore they appear far more at ease discussing their life and work experiences in this way, in a group, in a relaxed, friendly, familiar environment.

The third reason relates to the nature of the research project. It was felt particularly important to conduct group recall sessions in this piece of research as the main objectives are to discover the implications of the introduction of new organisational methods, such as team working, on gender segregation. As workplace gender segregation is socially constructed and therefore determined by societal perceptions and insights, it is important to examine such issues not just in terms of concrete evidence, i.e. payment levels, promotion opportunities etc. but in terms of attitudes and experiences.

Language is an important part of this process, and although some progress has been made to date (Pollert, 1981, Westwood, 1984) the majority of the accounts of the world in general and experience at work in particular have been narrated from a masculine account. In order to redress these tendencies it was felt important to let the women provide an account of their own working experiences. These group discussions provided a forum in which machinists could generate their own agenda of topics and hence *they* often defined the nature of their working experiences. It was envisaged that by conducting the research in this way, the women who were interviewed would have the opportunity to talk about, give an account of and interpret their own lives, rather than being talked about as is so often the case. As Calvert and Ramsey (1992) rightly point out, it is essential that women's voices are listened to, in this way women's unique experiences and perspectives are taken as the starting point and as central to the debate rather than as 'outsiders'.

Overall most machinists appeared to enjoy the group discussions and actually welcomed the chance to discuss their working lives, something which they rarely talked about in normal circumstances. The machinists would often ask "are you coming again to talk to us?", "could you stay a bit longer?". This was partly because they enjoyed the chance to discuss these

issues and learn from each others experiences and partly because they enjoyed time away from the monotonous, mundane, day to day machining tasks. This enthusiasm of the interviewees for the research programme meant that working to establish a rapport with them was not necessary, despite contradictory claims by various feminist authors such as Oakley (1981). Revealing similar evidence to that of Finch (1984), that qualitative methodology is quite definitely advantageous over other more quantitative methods ensuring the respondents are relaxed, enabling them to enjoy the experience and getting the 'best' out of them.

Although beyond the scope of the aims and objectives of the thesis, the group recall sessions have also stimulated additional benefits particularly to the women machinists being researched. By encouraging the machinists to embark into dialogue with one another, these marginal and previously silenced individuals were able to discuss the issues which most affect and anger them during their working lives and some of them, often for the first time, began to question their roles in society, the way in which they are treated at home and at work. By entering into conversation with each other, these women have to listen to the opinions of others which consequently gives them chance to reflect on their own opinions and possibly change the beliefs and views which they have held for so long.

All empirical methodologies have potential drawbacks and group recall sessions are no exception. Although the sessions appeared advantageous over the more quantitative formal questionnaire, some difficulties remained apparent.

The first and most obvious difficulty concerned the reluctance of managers to allow the group recall sessions to be conducted. Group discussions with machinists were the most difficult of the interviews to arrange and were frequently cited by management as the explanation for my frequent refusal of access to companies. Managers often became 'gatekeepers', they were quite willing to be interviewed but were reluctant to allow me to speak to machinists. This can partly be explained by the lost production time experienced while machinists are being interviewed and partly because management are reluctant that the views and opinions of their workforce be known to an 'outsider'.

The second difficulty relates to sampling errors. As stated earlier, it was not always possible to chose at random the machinists to be interviewed and in some instances managers selected the machinists who were to participate in the group recall sessions. In some circumstances managers chose a range of machinists who they thought would provide a

balanced view. In others, however, it was quite obvious that managers had been selective with their choice of machinists. Those chosen tended to be: those who were talkative; those with a lack of work; those who would not criticise the company; and in companies with team working, those who were in favour of or who were benefitting from the new system of production. Indeed, some machinists acknowledged that they were chosen purely on the basis that they preferred team working and stated that other machinists, who had not been chosen for interview, preferred the traditional production line method of working. Thus, as stated previously, the results may be distorted slightly in a way that underplays the disadvantages of team working.

Thirdly, managers occasionally asserted their authority in order to influence machinist statements. This was particularly apparent in team working companies where managers openly (in my presence) encouraged machinists to portray team working in a positive light. In all the group discussions it was explained to the participants that it was their personal views that were being sought, that the information gained from the interview would be kept in the strictest confidence, would not be accessible to the company and that no individual would be identifiable in the final thesis. However, in these circumstances where managers had attempted to bias the statements of the machinists, these points had to be stressed further still.

The fourth problem concerns the tendency of a few participants to dominate the discussion. During the group recall sessions some machinists started to control the discussion, preventing others from participating, particularly shy members of the group. This was overcome by employing specific interviewing techniques. Occasionally individuals who had not contributed were targeted and directly asked questions. This, in general, was successful and prevented most of the conversation being dominated by one individual.

The final problem experienced with the group recall sessions was one of potential exploitation of participants. It was quite easy to form a rapport with the machinists, often they willingly, without being asked, revealed confidential details about their private lives. Therefore, from the researcher's point of view, conducting these group discussions has been enjoyable and academically highly rewarding but at the same time it has revealed the way in which researchers like myself can exploit those being researched. As the researcher I have gained a great deal from these group discussions and the findings may eventually enhance my future career but what do the women machinists gain? In the short term the chance for a chat and half an hour away from their everyday boredom, in the long term a chance that this together with other similar research will draw attention to their plight and

eventually help to improve their situation.

This exploitation is compounded by the fact that in some instances the machinists actually suffered financially as a direct result of the group recall sessions. In most cases machinists were paid while they were being interviewed during the group discussion, but in some cases machinists were not paid for their time in the interview and so lost valuable earning time. On these occasions the situation was not revealed until the interviews had been completed. Had the situation been known prior to the interviews, they would not have taken place.

It is therefore quite clear that the relationship between the researcher and the researched is not equal. As the machinists themselves occasionally pointed out 'I am lucky', 'I have had a good education', 'I will eventually earn a large salary'. Meanwhile 'they have had very little education', 'they are restricted to their job as machinists' and 'they have little chance of changing occupations'.

However, as Finch (1984) points out, the exploitation does not stop here and hence, "*interviewees need to know how to protect themselves from people like me*" (Finch, 1984, p.80). Finch is quite right, who is going to protect these interviewees from researchers, "people like me". Agreed the researcher can ensure that when conducting research any potential avenues for exploitation are avoided. However, like Finch (*ibid*) I am concerned about the way in which the information provided so eagerly and readily in the group recall sessions can be used by others to act against the collective interests of women. Like Finch's research on playgroups and clergymen's wives, my own research could be misinterpreted by others to act against the interests of women. For example, on numerous occasions the women stated that they were the main child rearers and carers and that they were unconcerned about the lack of male participation in these roles. Although this was by no means the view of all the women who were interviewed and although some women had heated arguments about these issues, such statements could be used by others to infer that *all women want* to rear and care for children alone and do *not want* men to participate in this process.

4.5.3c Informal, Semi-structured Interviews with Management

These interviews were designed to ascertain comparable details of both work organisation and gender relations in production line and team work companies. The interviews followed a set of semi-structured questions which were asked in roughly the same order (appendix 4). Certain issues were expanded on where necessary, sometimes instigated by the

interviewer and sometimes by the interviewee. The structure of the interviews were similar for both groups of companies but obviously varied occasionally, particularly when discussing issues concerning work organisation. Managers were asked factual questions about the work organisation of the company and more subjective questions in order to ascertain their personal opinions, particularly with respect to gender relations.

These interviews were carried out in each of the thirty-three companies. The majority of the managers were male (61%) and this pattern was true in all the companies, in those operating both the traditional production line and team working (table 12, appendix 1), hence reflecting the dominance of men in managerial positions within the industry.

By utilising semi-structured interviews it was possible to gain comparable results similar to those gained with more quantitative methods but at the same time develop a greater, in depth insight into management's own understanding of events than quantitative methods would have allowed. This structure enabled a certain degree of flexibility within the interview process and managers were able to have some influence over the nature of the research agenda rather than simply choosing between a number of predefined answers characteristic of questionnaire or survey methods. Most managers were willing to talk extensively about their experiences and views and felt quite relaxed with this type of interview environment, thus enabling the researcher to 'get the best' out of the interviews.

By using semi-structured interviews it was possible to identify situations where the respondent may have been replying in a less than honest way. Indeed, the informal semi-structured interviews enabled constant cross checking of the data. This was achieved by returning to similar questions, on the same issue, on a number of occasions in order to assess whether or not the respondent answered differently a second or third time. In a number of cases managers often instigated a return to certain issues themselves without any encouragement from the interviewer. Such cross checking was particularly important in these interviews as discrepancies between management and machinist replies frequently occurred, an issue to be discussed in further detail shortly.

Two main difficulties were experienced with these interviews. The first difficulty relates to problems with the interviewees. In some companies managers clearly felt uneasy during the interviews. In these circumstances they attempted to 'get the interview over as soon as possible' by providing simple 'yes' and 'no' answers. This made the interviewing task more difficult and substantial effort was required to extract only limited information. In other companies managers failed to treat the interview seriously and thought it a huge joke, this

was particularly true of the questions relating to gender issues. In other cases it was quite clear that managers approached the interview with a view to 'painting the company in a good light'. This was evident when speaking to machinists during the group discussion which usually followed the management interview. Often the story that managers told, was quite different to that expressed by machinists. The management interviews have therefore had to be analysed with great care due to their potentially biased nature.

The second issue relates to problems of managers attempting to dictate the nature and direction of the interview. This was a particularly noticeable problem with the male managers who were interviewed. In some instances in an attempt to tell the interviewer what they wanted, they talked at length about issues of their choice and avoided answering the questions asked. In these circumstances the interviewer had to be particularly firm and inform the interviewees that a return to the interview schedule was required. This reveals a marked difference in the relationship between interviewer and interviewee in comparison to that experienced with the female machinists. The male managers obviously felt that they were in a commanding position, a position of power. The relationship with the women machinists, on the other hand, was quite different, the interviewer was seen as the one holding the 'power'.

4.6 DATA ANALYSIS

The empirical enquiry clearly involves the utilisation of numerous research methods, from which a large amount of data has been generated. For these reasons it was decided to perform a preliminary analysis of the results before the interviewing process was complete. Once sufficient data had been collected from the first few companies, it was analysed in order to ensure that the research findings were in line with the objectives of the thesis. The preliminary analysis revealed that the research was heading in the right direction and the interview schedules and questionnaire design were left unchanged. It was, however, clear at that stage that the amount of information being gathered was far too extensive and at times went beyond the scope of the thesis, a factor which required careful consideration during the final stage of analysis.

Once all the quantitative and qualitative data had been collected, it was analysed by various means. A database was established using FileMaker Pro (Claris) in order to analyse the quantitative data. The data was recorded on this software and then subjected to simple statistical analysis. The qualitative data, on the other hand, was at first analysed by a computer assisted package (AQUAD). However the package was too inflexible and

appeared incapable of handling such large data sets. Thus, after spending several months utilising the software it was decided to abandon this technique. Instead the data was analysed manually by utilising word processing techniques. The text of each company interview was examined, enabling identification of key themes such as pay, operative training, polyvalency etc. Separate computer text files were then created for each of these key themes and relevant sections of each company interview were copied and pasted into the newly created text files. This appeared advantageous over the software, ensuring both flexibility and accuracy.

The results of the empirical investigation are extensive and are detailed in the remainder of the thesis. The three areas of debate highlighted in the previous chapter (numerical flexibility, functional flexibility and technological change) are each dealt with in the following two chapters. Chapter five explores the debate concerning numerical flexibility, whilst chapter six examines functional flexibility, drawing upon issues concerning technological change where appropriate. Each chapter attempts to test the theoretical arguments which were raised out of the debate in chapter three, by exploring a series of questions (both the theoretical arguments and empirical questions are listed in section 4.2.2 of this chapter).

CHAPTER FIVE: TEAM WORKING AND NUMERICAL FLEXIBILITY

5.1 INTRODUCTION

This chapter attempts to test the theoretical arguments arising out of chapter three specifically those relating to the increase in use of numerically flexible work practices within the Post-Fordist economy. This is achieved by the provision of evidence from the empirical investigation of the introduction of one form of Post-Fordism - team working, in the Nottinghamshire clothing industry.

It has been explained in chapter two that, according to authors such as Leborgne and Lipietz (1988, 1990), the Post-Fordist economy can be accompanied by an expansion of numerically flexible working arrangements (i.e. part-time work, temporary work and homeworking). Furthermore, it is clear from the discussion in chapter three that the existing feminist theoretical debate surrounding the implications of Post-Fordism for gender relations at work specifically focuses upon this issue (Christopherson, 1989, McDowell, 1991, Walby, 1989). These feminist authors suggest that Post-Fordism leads to an increase in numerically flexible jobs, the majority of which are performed by women, who consequently experience the drawbacks of the peripheral labour market, being subject to 'hire and fire' work practices. They explain women's participation in numerically flexible jobs by the fact that women tend to have the main responsibility for both domestic and caring tasks and suggest that the likelihood of women being employed in numerically flexible jobs is particularly high in Britain due to the lack of welfare provision, in particular childcare facilities.

The main criticism of these feminist authors is that their evidence is drawn from a general analysis of all industrial sectors and that case study evidence from particular industrial sectors is not provided. Moreover, in the few cases where evidence from a particular sector is available (Christopherson, 1989), it tends to be limited to the tertiary sector. This highlights what has been stated previously in this thesis; that evidence from the manufacturing sector, concerning the implications of Post-Fordism for gender relations, is relatively absent.

This is a major drawback in the existing feminist critique of Post-Fordism, particularly as manufacturing industries tend to have inherently different work practices than the tertiary sector. Indeed, numerical flexibility is far less prevalent in manufacturing than service sectors in Britain (Eurostat, 1990, OECD, 1994). This suggests that the search for greater flexibility

within the Post-Fordist economy may be achieved by alternative methods in manufacturing industries, not necessarily through an expansion of numerical flexibility.

Given the possible variations between the level of numerical flexibility within the tertiary and manufacturing industries, it is important to test the theoretical arguments raised by feminist authors (Christopherson, 1989, McDowell, 1991, Walby, 1989), in a manufacturing context. The remainder of this chapter attempts to achieve this by exploring the empirical investigation of the implementation of team working in the clothing industry.

The chapter is divided into two main parts. The first is concerned with the extent to which team working, as one form of Post-Fordism, encourages an expansion of numerical flexibility (5.2). This is achieved by examining the extent to which the presence of numerically flexible working practices is greater amongst employees working in a team work environment than those working on the conventional production line. Particular attention is paid to the level of redundancies and part-time work in the industry and the extent to which each can be classed as measures of numerical flexibility.

The second part of this chapter (5.3) examines the implications of these findings for female employees working in teams and specifically for women who also work in the unpaid labour market, caring for children, elderly dependants and so on. The extent to which team working can have wider implications by mediating the constraints faced by many working women is also explored. This is principally achieved by an analysis of the degree to which companies utilising team working are more likely to operate flexible working arrangements and provide childcare facilities than those operating a conventional production line.

The evidence provided in these two main sections is then summarised in the conclusive section of the chapter (5.4).

This chapter relies upon qualitative evidence, which is drawn from both group discussions with machinists and informal interviews with management (refer to sections 4.5.3b and 4.5.3c for a detailed analysis of these research methods), although data of a quantitative nature is utilised on occasions as supportive evidence.

5.2 THE PRESENCE OF NUMERICAL FLEXIBILITY

In order to examine the extent to which team working leads to a greater level of numerical flexibility, two criteria are examined: the level of redundancies in the industry and the amount

of part-time work available.

5.2.1 Redundancies

The quantity and frequency of redundancies is one measure of the presence of numerical flexibility within the clothing industry. If numerical flexibility is widespread within the industry, employees will have few employment rights and as a result employers will have the power to 'hire and fire' the workforce according to the level of demand and therefore a high level of redundancies would be expected.

In order to establish the prevalence of redundancies and therefore provide an indication of the level of numerical flexibility within the Nottinghamshire clothing industry, managers of companies operating both the conventional production line and team working were asked if they had made any workers redundant in the last few years. It appears that redundancies within companies operating the traditional production line are extremely low. Just 13% of these managers stated that they had made workers redundant in the last few years (this figure and all other figures in this chapter, unless otherwise referenced, are derived from an analysis of the interviews undertaken). This is a remarkably modest level of redundancies for a period which has been marked by economic recession across most industrial sectors.

These managers explained the low level of redundancies by a high level of 'natural' labour turnover, arguing that employees regularly leave the company for a variety of reasons, such as pregnancy, in search of higher pay or better working conditions. Indeed, managers argued that labour turnover is such a problem throughout the industry that labour recruitment has been the main problem, rather than unwanted redundancies. As one manager pointed out,

"We made some redundant probably just after I started, probably three, four years ago, not since then. I would say that the problem since then has been recruiting labour. At the moment I would say it's a big problem trying to recruit labour, we've had a spell where for various reasons we've lost a few people and it's the people, the key workers on key operations who have given a number of years service and have been highly skilled, you tend to rely on those people and so when they go they take some replacing."

(Manager of production line company)

As feminist literature (Christopherson, 1989, McDowell, 1991, Walby, 1989) suggests that the presence of numerical flexibility is higher in the Post-Fordist economy, and given the fact that team working can be classed as one form of Post-Fordism (see chapters two and three), one would expect redundancies to be higher in companies which have implemented team

working. There are two main reasons for this: firstly, if team working leads to an expansion of numerically flexible employment contracts, employees will have few employment rights and as a result employers will have the power to 'hire and fire' the workforce according to the level of demand and therefore a high level of redundancies would be expected.

Secondly, it could be anticipated that in an attempt to increase the level of numerical flexibility, companies implementing team working will make permanent, full-time workers redundant with a view to re-employing them on a more flexible, part-time or temporary contract.

Initial observations provide supporting evidence to this effect, with 42% of the team working managers stating that they had made workers redundant in the last few years. This pattern appeared to be the same in companies utilising both Kanban and TSS based systems of team work. Revealing that managers of companies operating team working are three times more likely to make employees redundant than those in companies operating the conventional production line.

However, when the interviews are analysed in more detail, it becomes clear that the higher level of redundancies in companies operating team working does not necessarily indicate a higher degree of numerical flexibility but reflects the requirement for fewer indirect staff, such as examiners, when team working is initially installed. The team working companies which had made workers redundant in the last few years had done so as a direct result of the implementation of the new system of production. This was the case for both Kanban and TSS based systems of team work. A typical response from management was,

"When we changed over from line to Just In Time obviously we had what was called the examiners at the end of it. Now we tried to integrate them into the Just In Time way of thinking and tried to train them up on machining. We offered it and if they didn't want it then they were obviously made redundant. But we did offer everyone a job. Just In Time didn't need examiners."

(Manager of TSS team work company)

Managers of companies operating the Kanban based system of team working made similar comments,

"We did make some inspectoresses redundant though, because of team working, obviously inspection wasn't required any more. They weren't

trainable as machinists so there wasn't any other option."

(Manager of Kanban team work company)

In the longer term redundancies in companies operating team working, like those in companies with the traditional production line, appeared extremely low. Indicating that once the new system of manufacturing is up and running, managers in companies operating team working are no more inclined to make workers redundant than those in companies operating the production line. Therefore suggesting that team working does not stimulate a greater degree of numerical flexibility.

Explanations for the low level of redundancies in team working companies are similar to those previously stated for companies operating the production line, relating to the level of labour turnover. Advocates of team working (Farrands and Totterdill, 1990, Totterdill, 1995b, Tyler, 1994) suggest that one of the main benefits of its implementation can be a reduction in levels of labour turnover. They argue that team working can derive numerous benefits to the workforce such as multi-skilling, job enrichment, a fairer payment system, improved career prospects etc. (for further details see chapter six) thus facilitating labour retention. However, evidence from the discussions with managers of team working companies suggests that this has not been the situation, with only 31% of the team working companies experiencing a fall in labour turnover. The majority (69%) of managers of companies operating team working stated that labour turnover is still a problem despite the new system of production. Moreover two of these companies actually experienced increases in labour turnover following the implementation of team working.

There is also no evidence of companies which have implemented team working making full-time, permanent, machinists redundant and re-employing them on more flexible, part-time or temporary contracts. None of the managers or machinists in the team working companies suggested that this process had occurred since the change in the production process. Indeed, many managers interviewed (80%) indicated that if they required full-time machinists to work on a part-time basis they would simply instruct them to work less hours the following week, rather than re-employ them on a new contract. This is reflected by the fact that formal contracts are few and far between amongst machinists in the clothing sector. This absence of formal employment contracts reveals that the workforce in the clothing industry can be 'hired and fired' at will by the employer and therefore treated in a numerically flexible way. However, as previously stated, the high level of labour turnover in the industry means that this process is very rarely necessary. From the evidence available it therefore appears that

team working does not stimulate a higher number of redundancies, which is one indicator of a greater degree of numerical flexibility.

Furthermore, when team working managers were asked about future redundancies, those in eight companies which had only partially implemented team working, thereby operating the new system of production alongside the traditional production line, agreed that machinists from the latter would be chosen for redundancy rather than those working in teams. This was frequently explained by the fact that team working would eventually be implemented throughout the company and therefore it made sense to make production line workers redundant rather than team workers. Team members had been trained and were familiar with the multi-skilling that the new system of production required (see discussion on training in sections 6.2 and 6.4.2) and so if redundancies are required it would be easier to dispose of those working on the production line. Indeed, the managers claimed that as machinists receive training and become multi-skilled they are more valuable to the company than production line workers.

"I would take the redundancies off the lines if I was to make any, because they [team workers] are more skilled, we've invested time and money into them, they are more valuable as a workforce."

(Manager of team work company)

Some of these companies had implemented team working but had failed to invest into employee training (see section 6.2 for more precise details), a practice which advocates of team working, such as Farrands and Totterdill (1990) and Tyler (1994) are highly critical of. Nevertheless managers in these companies expressed similar sentiments, arguing that although they had not invested time and resources into training their staff, the machinists had cross trained each other and were more skilled and therefore more valuable to the company than those remaining on the traditional production line.

This evidence reveals that, in the sample of companies, although team working initially stimulates a requirement for redundancies, a high degree of 'natural' labour turnover within the industry ensures that redundancies are not required in the longer term. Moreover, after the initial installation period, if redundancies are required in companies which have both systems of manufacturing in operation, they are more likely to come from the production line. The machinists working in teams in these companies are therefore able to enjoy the benefits of job security to a greater degree than their production line counterparts. Therefore, contrary to the arguments of various feminist commentators (Christopherson, 1989, McDowell, 1991,

Walby, 1989), Post-Fordism, at least in the context of the introduction of team working in the clothing industry, appears not to produce a numerically flexible workforce which is treated as peripheral and can be 'hired and fired' at the discretion of the employer.

It must, however, be noted at this juncture that once individual companies implement team working throughout the factory, the benefits of job security presently experienced by team members in companies which are also operating the production line will be discounted. When redundancies are required in companies which are solely operating team working, it will no longer be those workers on the production line that are adversely affected, but those team members with the least number of skills. Therefore, in the absence of adequate training (as explained in the following chapter) and with the subsequent requirement of 'self teaching', this will affect those workers who refuse to spend unpaid time cross training and learning new skills and techniques.

5.2.2 Part-Time Work

Another indicator of numerical flexibility, which is often referred to by those examining the implications of Post-Fordism on gender relations (Christopherson, 1989, McDowell, 1991, Walby, 1989), is part-time work. These authors tend to focus upon the expansion of part-time work as part of the economic restructuring process, arguing that Post-Fordism creates a numerically flexible, peripheral workforce which consists of predominantly female workers.

Recent European legislation has had the effect of entitling part-time workers to the same statutory rights as full-timers, stifling the ability of employers to use part-time workers in a numerically flexible manner (Social Europe, 1992, Industrial Relations Service, 1995a, 1995b). However, as explained in chapter three (3.2.1a), at the time the empirical investigation for this thesis was conducted, part-time workers could be used in order to achieve numerical flexibility. Prior to this legislation employees must have worked at least sixteen hours a week with the same employer for two years to be eligible for employment rights, such as protection from unfair dismissal, paid maternity leave and redundancy pay. Additionally those who worked between eight and sixteen hours a week must have been with an employer for five years to qualify for security of employment (Walby, 1986). Up until very recently part-time workers therefore enjoyed substantially fewer employment rights than their full-time counterparts and were subject to dismissal at the will of the employer.

According to the suggestions of these feminist writers, Post-Fordism stimulates a greater amount of part-time work. As team working can be classed as one form of Post-Fordism

(see chapters two and three), it could be inferred that its introduction in the clothing industry will lead to an expansion of the availability of part-time work. However, as stated earlier in this chapter and in previous chapters of the thesis, the research of the feminist writers (in particular Christopherson, 1989, but also McDowell, 1991 and Walby, 1989) often refers to the tertiary sector which has substantially higher levels of part-time work than the manufacturing sector. In order to establish the extent to which this hypothesis can be transferred to manufacturing industries, those interviewed in the sample of companies were asked about both the availability of part-time work and the extent to which it is used in a numerically flexible manner.

Evidence from the interviews suggests that the availability of part-time work is relatively absent in the sample of clothing company. This is highlighted by the group discussions, with just 21% of the operatives (working on both the production line and team working) stating that they were employed on a part-time basis. All these part-time workers had family responsibilities, caring for both children and elderly dependants, and frequently cited these caring tasks as the main barrier to them working on a full-time basis. This trend was the same for operatives working on the production line and in teams, highlighting the difficulties of the dual role faced by many working women.

"Well I started part-time because I'd got children, and they've grown up and now I'm older I don't want full-time. My mother has took the place of my children now, I'm running round after me mum. "

(Production line operative)

"I work part-time because of the kids....I couldn't work these long hours and look after kiddies."

(Team member)

Evidence from the women therefore supports the comments of feminist commentators such as Beechey (1987), Dex (1987), Rubery (1994) and Walby (1989) that part-time work is crucial to a large number of working mothers. However, despite the importance of part-time work to these women, it is relatively scarce in the clothing sector, something which the above authors fail to comment upon. This absence can be explained by the fact that part-time working arrangements adversely affect the flow of the production process, causing problems for line balancing, creating bottlenecks when a part-time worker is absent and overall stifling the flow of production. Moreover, part-time work results in low levels of machine utilisation, with machines laying idle for long periods within the working day, as part-

time operatives are absent from the factory.

The difficulties involved in employing part-time workers are evident amongst companies operating the conventional production line. When machinists working on the traditional production line were asked if it was possible to work on a part-time basis, the answer was often negative.

C: "Part-time work is very difficult"

B: "They don't like you working part-time. No."

D: "I think it was possible at one time."

B: "At one time it was."

D: "But now they want full-timers, not part-timers."

C: [Because] "They want to get the production out."

(Group discussion of production line operatives)

Managers of these traditional production line companies likewise stressed the difficulties involved in employing machinists on a part-time basis and openly admitted to avoiding part-time work at all costs.

"Part-time workers affect the balance on the line, where normally if you had twenty girls all working full-time the work will flow, but because you have part-timers you end up having build ups at various stages.

(Manager of production line company)

Managers of three of the companies operating the conventional production line suggested that the difficulties experienced when employing part-time workers are so severe that they have a policy of recruiting machinists who are least likely to have childcare responsibilities and are therefore unlikely to require part-time work. These companies avoid employing machinists between the age of twenty and forty-five, instead preferring what they refer to as 'young girls', who have yet to have children and 'older ladies', whose children are now grown up.

"Well we might show a preference for an older lady who has probably had a family, which we have done before, as opposed to a younger person. I know it's a terrible thing to say but it's obviously something that you've got

to take into account, not just for problems with part-time work but pregnancy as well."

(Manager of production line company)

These sentiments were expressed by another manager of a different company,

"Yes, to be fair, to tell you the truth, most of my girls are under twenty or over forty-five, so they've either finished or yes had kids....and that's a deliberate policy on our behalf to limit part-timers."

(Manager of production line company)

The age of the labour force is therefore one factor which affects the availability of part-time work amongst companies operating the conventional production line in the clothing industry. However, in the absence of in depth discussions, specifically concerning the length of hours worked with machinists of certain age groups, this concept cannot be elaborated upon here.

Another factor which may affect the availability of part-time work in the clothing industry is the geographical location of the companies. For various socio-economic reasons companies located in certain parts of the country may be more likely to offer part-time working opportunities than those located elsewhere. Although the sample of companies chosen for this piece of research covers a range of geographical locations, a larger sample of companies from each region would be required in order to explore this issue further.

Despite the problems involved in employing machinists on a part-time basis, almost half the managers of companies operating the traditional production line (46%) stated that they do offer part-time working arrangements, if required by the workforce. These companies appear to be of a specific nature, in terms of company size and management attitudes/relations with machinists, both of which are interlinked. Managers of these companies had distinctly different attitudes to those in companies which refused to offer part-time work. Although most of them still viewed part-time work as problematic in the clothing industry, they accepted that as the majority of the machinists are women who have the main responsibility for caring, part-time work is a harsh inevitability in the industry. They recognise that, due to the stereotypical feminine image of the machinist's job and the accompanying long hours and low pay, few men are willing to enter the trade. They therefore acknowledge that they have to make the most of their female labour and appear to view them as a valuable resource to the company, often stating that 'part-time labour is better than no labour'.

"Part-time is an ongoing thing, but it's a contingency, you have to build it into your plans. Our ladies have to work part-time because of their kiddies and you have to accommodate that. It's just a fact of life, ladies need to work part-time, most of our workforce are ladies and so we have to provide part-time..... part-time labour is better than no labour after all..... they do a great job for us and so we have to treat them right. In that way we treat them right, they treat us right, that's how it works."

(Manager of production line company)

There does not appear to be any correlation between the sex of the managers and those expressing these opinions. Male managers are just as likely as female ones to recognise the value of part-time work to women employees. The size of the company, on the other hand, does appear to play a role in this process. The majority of the managers who recognise the value of part-time work to their female workforce work in small companies, with fewer than fifty employees. This can, in part, be explained by the fact that managers of smaller companies often have closer working relationships with their staff, frequently working on the factory floor with the machinists in order to complete orders on time. As a result they have some affinity with the machinists and appear to value their work to a greater extent. An additional explanation is that small firms will go to great lengths to both recruit and retain labour, including the provision of part-time work. The loss of one member of staff has a much greater effect on production levels and the cost of recruitment a much greater effect on profit margins than in larger companies.

The evidence from the companies operating the conventional production line therefore suggests that female machinists working in the industry often require part-time work in order to combine paid work and caring responsibilities. However, due to the difficulties experienced in the production process, many managers are reluctant to encourage part-time work. The managers who do offer part-time working opportunities appear to be those in smaller firms, who value their female labour.

To date there has been little research conducted into the relationship between team working and part-time work. However, it is agreed amongst both team working researchers and practitioners (McLellan, 1994, Hague, 1995, Totterdill, 1995a) that part-time work should theoretically be easier to accommodate in a team work environment. These commentators suggest that team working facilitates part-time work but are keen to point out that this will only be the case if team members are multi-skilled (see section 6.2.1 for a more detailed discussion about multi-skilling). In this situation individual operatives within teams will be able to cover for their part-time colleagues when they are absent, reducing the bottleneck

problems experienced on the traditional production line. In an attempt to bring some light to this issue and to establish the extent to which this hypothesis is true, the managers of companies operating team working were asked about the availability of part-time work.

The majority (75%) of the managers of team working companies stated that they did not offer part-time working arrangements to machinists working in teams. This figure is much higher than the equivalent for managers of production line companies (54%). Suggesting, contrary to the hypothesis posed, that part-time working opportunities are lower in companies with team working than in those operating the traditional production line. This is further reaffirmed by the group discussions with machinists working in teams, with just 8% of team members working part-time compared to 31% of those working on the production line. Similar evidence to this effect has also been discovered by Penn *et. al.* (1994) when analysing the availability of part-time work following the restructuring of the textiles industry in Rochdale.

In an attempt to explain this relative absence of part-time work amongst team members, the age groups of the respondents have been analysed. As mentioned earlier, the age of the workforce may have an effect on the availability of part-time working opportunities within individual companies. Women aged twenty to forty-five are more likely to have children and therefore to want to work on a part-time basis. However, table 7 reveals that the lack of machinists working on a part-time basis in teams cannot be explained by this phenomenon. A greater proportion of the machinists working in teams (90%) fall in the twenty to forty-five age category, compared to those still working on the traditional production line (63%). This suggests that other factors are important in determining the relative absence of part-time work in companies operating team work.

Some team working researchers, such as Hague (1995), suggest that these other factors can be attributed to falling rates of labour turnover following the introduction of team working. He suggests that part-time work is easier to accommodate in a team work environment but as the problem of labour turnover lessens, machinists are in a weaker position to negotiate for part-time working arrangements. However, as stated previously (5.2.1), only 31% of the companies operating team working indicated that labour turnover had fallen since the introduction of team working and no correlation was found between the team working companies which refused to offer part-time working opportunities and those with lower levels of labour turnover.

Table 7. Proportion of Questionnaire Respondents Aged 20-45 (%)

All Companies	72 (73)
Production Line	37 (63)
Team Work	35 (90)

The relative absence of part-time work in the companies operating team working appeared to be related to difficulties of incorporating part-time workers into a team work environment rather than low levels of labour turnover, suggesting that team working as a system of production, renders the availability of part-time work more, not less difficult. This is reaffirmed by evidence from the group discussions. When asked about the possibilities of working part-time, the machinists replied that it would be more difficult on team work than on the production line.

B: "Well I don't think the firm would allow it [part-time work] because they want all the teams to start and finish at the same time as regards full-time work."

C: "It depends though if everybody's on the same hours, if they're all on different hours you're gonna be up and down aren't you, forget where you are and go and do one persons job and then they're gonna come in the morning and say 'oh I've got no work' you know. It'd be harder to fit in than on the line."

(Group discussion of team members)

Half the managers of companies operating team working had experimented with part-time workers and had attempted to incorporate a mixture of full and part-time team members. However, many of these (6 out of 8) discovered that this created numerous problems, particularly relating to unfairness amongst team members.

"You couldn't integrate them [part-timers] onto the JIT system, we tried it and you couldn't. Say we've got eight, nine girls on this JIT, eight are full-time, one is part-time. It wouldn't work"

(Manager of team work company)

The explanations expressed by management for these problems were based on the fact that full-time team members were expected to cover for absent part-time colleagues, having to work harder and undertake a wider range of tasks once the part-timer had completed their

shorter working day. Moreover, team cohesion was stifled when part-timers were placed in teams with full-time workers and consequently they tended to feel excluded and not an equal part of the team.

"It [mixing full and part-time team members] just didn't work. Some girls were working a lot harder than others. Some were slogging all day, whilst others could take it easy and went home early. It just wasn't worth the hassle we got from the girls on full-time."

(Manager of team work company)

The six companies operating team work which had unsuccessfully experimented with a mixture of full and part-time team members consequently refused to allow machinists working in teams to be employed on a part-time basis.

Half the companies (8 out of 16) had only partially implemented team working, whilst continuing to operate on a production line basis. Two of the managers of these companies stated that they did allow operatives on the traditional production line to work part-time. These managers had chosen full-time workers to become team members, whilst retaining part-timers on the production line. This trend is exemplified by one of the operatives interviewed.

"If you are full-time you can't swap to part-time any more. I used to be a part-timer when I first came here and then when we went onto the teams they asked me to come in full-time and ever since I've been on full-time, I've stayed on it. There's no going back now, if you want to work part-time you've got to go onto line work again, back onto line."

(Team member)

This suggests that when these companies implement team working throughout the whole factory, those currently working part-time may be asked to convert to full-time, indicating that in the long run there may be a fall in part-time working opportunities within the industry, as more companies take on board the principles of team working. Indeed, six of the eight managers of the companies which had installed 100% team working refused to offer part-time working opportunities at all. This process is reaffirmed by a manager of a company which has only recently started to implement team working,

"Once we've got team work across the factory floor it'll be full-time, eight hours a day, none of this leaving early to pick the kids up, to take em to the

doctors. I want 100% commitment"

(Manager of team work company)

Only four of all the managers of team working companies (25%) stated that part-time working opportunities were available to operatives working in teams. Two of these agreed with the assumptions of the team working commentators previously referred to (Hague, 1995, McLellan, 1994, Totterdill, 1995a) stating that the employment of machinists on a part-time basis appears less rather than more difficult than on the conventional production line system of manufacturing. These two managers were both working in companies which had implemented a Kanban system of team working (companies 2 and 4, table 6, section 4.4.2b). None of the managers of TSS based systems of team working stated that part-time working opportunities were easier to accommodate in a team work environment. This therefore suggests that the nature of the system of team working has an effect on the ability of companies to offer part-time work.

These two managers stated that, as a result of the implementation of a Kanban system of team working, part-time working opportunities are now available to their workforce. These companies are the two mentioned earlier, which have successfully incorporated part-time workers into teams with full-time team members.

"It must be easier to have them [part-timers] on team working than on line production, but it's still harder than having them all as full-time. It's easier, not necessarily to have full-time workers but for them all to have the same hours..... it's much harder when you're trying to balance the line, if you've got part-timers because you've got truly a block in the line then when someone is off. If they are cross trained it is easier, it doesn't make any difference to the team, people just slot in there. It's easier to have part-time workers on teams. Yes, because at least someone can cover their job."

(Manager of Kanban team work company)

Contrary to the majority of the managers who were interviewed, these two managers have found it easier to accommodate part-time workers following the implementation of the Kanban system of team working. The companies within which these managers work do, however, have some common features which may explain why they have found it easier to employ workers on a part-time basis, whilst others have found it more difficult.

These companies have both provided comprehensive training for their team members (see chapter six for further details), encompassing both technical and social skills. The social

aspect of this training highlights the importance of working as a team. As a result, full-time team members appear less resentful towards their part-time colleagues, who consequently feel an equal part of the team. Feelings of unfairness amongst full-timers are therefore dispelled. The technical training complements this, ensuring that team members are very highly skilled, hence enabling full-time team members to adequately cover for their part-time colleagues when they are absent. This therefore suggests that part-time work is only easier to accommodate in a team work environment if the workforce are trained to be multi-skilled, thus confirming what various team work commentators (Hague, 1995, McLellan, 1994 and Totterdill, 1995a) have previously indicated.

The two remaining companies which offer part-time working opportunities to their staff have both experimented with a mixture of full and part-time teams. These companies both operate the TSS system of team working and although they provide technical training for their staff, they have failed to overcome the problems of accommodating part-time work.

It therefore appears that the availability of training and degree of multi-skilling are not the only factors determining the extent to which part-time work can be accommodated in a team work environment. The system of team working in operation also plays a major part in this process. The two main types of team working, Kanban and TSS were both explained in section 4.4.2b.

Within the Kanban model, operatives leave their workstations when the Kanban is full and resume work at a different workstation with an empty or partially filled Kanban. Operative movements are therefore largely governed by the condition of the Kanban. However, operatives do have some discretion relating to the workstation they move to next. It may be that two workstations have empty Kanbans, in which case operatives then have the responsibility of deciding which one to fill. This system therefore requires a high degree of flexibility and consequently operatives need to be multi-skilled, which is facilitated by training, either on a formal or informal cross training basis. These multi-skilled operatives are then able to accommodate part-time workers, using their discretion to cover their workstations when they are absent.

As explained in chapter four, the TSS style of team working is based on the bump back philosophy, whereby operatives have a pitch of three or four sequential workstations. When the final operative in the team completes a garment, he/she takes control of the work of the previous operative and so on until the first operative is free to commence another garment. Unlike the Kanban system of team work, the workstations which operatives can utilise are

tightly prescribed, often by management or supervisors. As a consequence, operatives tend only to have the skills required to operate workstations within their designated pitch. Therefore even though machinists are trained and multi-skilled, they do not have the discretion to cover when their part-time colleagues are absent. The only way in which part-timers can be accommodated is if team members are trained to operate additional workstations which fall in the designated pitch of the part-timers. However, management are reluctant to invest in any more training than is absolutely necessary (see sections 6.2 and 6.4.2 for a detailed discussion of training).

"We've tried intermingling full and part-time workers on teams, we have done especially with the nine till four, and it works if you've only got one [part-time worker] and you've got a very skilled team, where the girls can operate every workstation on the module, so that they can cover for that person....but of course however skilled they are, it's very rare that they can all perform all operations. "

(Manager of TSS team work company)

Due to the difficulties of combining full and part-time team members, these two TSS companies have since changed strategy and have attempted to operate a limited number of part-time teams. The hours that these teams work tend to correspond with school opening hours, starting at nine or quarter past nine, till three or quarter past three. One of these companies has also introduced a part-time team which they referred to as a 'mums shift'. This team work from quarter past nine till quarter past three and do not work during the school holidays.

However, managers of these companies stated that the operation of part-time teams also caused considerable problems, that they are reluctant to operate them and that in their opinion part-time working in a team work environment has actually created more problems than it did on the production line.

"[Part-time work] has actually created more of a problem with us with team working because those teams are left idle whilst they've gone. I mean we'd like to have all full-timers in here and we probably could get them in, we're not employing any more part-timers, the ones we've got we'd keep but saying that if somebody leaves in a part-time team we'd replace them, we've sort of got a waiting list for part-time."

(Manager of team work company)

The main explanation for the difficulties experienced in operating part-time teams are that

all workstations on a team are left idle for large proportions of the working day rather than individual machines, as on the production line. As a result, machine utilisation is low. This is particularly problematic with the TSS system of team work. As explained in section 6.2.1 TSS requires heavy investment in new technology and therefore low levels of machine utilisation are highly undesirable.

Difficulties relating to low levels of machine utilisation could be eliminated by the operation of two shifts instead of one, with one team operating in the morning and another resuming duties in the afternoon. One of the TSS companies actually expressed a wish to implement such a form of shift work but faced a number of obstacles.

"Well it would be [easier] if we could actually run shifts on the machines you've already got a machine utilisation of only about 60%, 65%, so then you'd only have those machines operating for two thirds of the day, it would need to be either an eight till twelve sort of thing, four hours in the morning and then you know you would actually need to utilise your machines for the full-time, so either it be a morning shift or an afternoon shift. But then you've got the problem of the kiddies, how will they fetch them from school?"

(Manager of TSS team work company)

The managers of these two TSS based team working companies operating part-time teams stated that part-time work was more difficult to accommodate in a team work than a production line environment. However, despite these difficulties encountered they continued to operate a small number of part-time teams. These companies did, however, have a specific feature in common. Like the managers of the production line companies, previously referred to, who offered part-time working opportunities despite the difficulties it caused, these managers too recognised the value of their predominantly female labour force and the importance of part-time working arrangements to them. In fact the managers of these companies appreciated the value of their labour force to such an extent that they offered part-time working arrangements despite the fact that they were operating 100% team working. This therefore suggests, that not all companies operating 100% team working will refuse to allow team members to work on a part-time basis, the extent to which they do so is dependant upon individual manager attitudes towards women and work.

Having assessed the degree to which team working facilitates the availability of part-time working arrangements in the clothing industry, it is also important to examine the extent to which part-time work within the sector can be used in a numerically flexible manner. Various

feminist writers (Christopherson, 1989, McDowell, 1991, Walby, 1989) have suggested that part-time work is used by 'Post-Fordist' companies as one way of achieving numerical flexibility. However, evidence from the companies suggests that part-time work within the clothing industry, in both production line and team working companies, cannot necessarily be classed as numerically flexible. Suggesting that these feminist theories cannot be directly transferred to the clothing sector.

Prior to the new legislation in relation to part-time work and employment rights, these feminist authors argued that part-time work was numerically flexible on the basis that employees working less than sixteen hours a week and with the same employer for less than five years were illegible for employment rights such as protection from unfair dismissal, paid maternity leave and redundancy pay. However, all the part-time women who were interviewed stated that they worked more than sixteen hours a week, working approximately six hours a day, therefore only working slightly fewer hours than their full-time counterparts. Part-time working hours tend to be from eight or nine o'clock in the morning till three o'clock or three thirty in the afternoon. These hours correspond with school opening hours and enable working mothers to take their children to and from school. This therefore reveals that the part-time workers who were interviewed are eligible for employment rights and cannot be classed as numerically flexible.

It could be argued that part-time workers can be used in order to achieve numerical flexibility in another way, irrespective of the number of hours worked. The hours of individual part-time workers could be altered on a week by week basis in order to effectively match output to demand. However, there was no evidence of this practice in any of the companies.

It can therefore be seen from the evidence provided in this section, that although team working can be classed as one form of Post-Fordism, the extent to which it stimulates a greater degree of part-time work in the clothing sector is limited. The majority of companies which have implemented team working have found that it renders the employment of operatives on a part-time basis more difficult than on the traditional production line. Furthermore, it is clear that the extent to which team working companies in the clothing industry offer part-time work is governed by the system of team working in operation, together with a number of complex interrelated issues relating to managerial cultures and attitudes.

These conclusions together with both the evidence that part-time work within the clothing industry can not necessarily be classed as numerically flexible and the evidence that team

working does not stimulate a greater level of redundancies (in the long term), therefore cast doubt upon the transferability of the theories of various feminist writers (Christopherson, 1989, McDowell, 1991 and Walby, 1989), particularly those relating to the expansion of numerical flexibility in the Post-Fordist economy, to the clothing sector.

5.3 IMPLICATIONS FOR GENDER RELATIONS

From the evidence provided in the first section of this chapter, it is clear that following the implementation of team working a limited number of companies continue to offer part-time working opportunities, whilst the majority, for a variety of reasons, stipulate that machinists working in teams be employed on a full-time basis. Whilst women working in the former companies will experience little change to their working lives, those working in the others will be affected in a number of ways. This section explores the way in which the withdrawal of part-time working opportunities in companies which have implemented team working affects the predominantly female workforce.

There is a collection of feminist literature which explores the implications of part-time work for women, examining both its potential values and drawbacks (Beechey and Perkins, 1987, Dex, 1987, Robinson, 1988, Rubery *et al.*, 1994). This literature suggests that although women often require part-time work as they have the main responsibilities for caring, particularly in Britain where childcare facilities are minimal, part-time workers are exploited. These authors suggest that part-time workers have lower pay, fewer employment rights and less chances of both training and promotion. They therefore argue that as the majority of part-timers are female (3.2.1a), the provision of part-time work in Britain has facilitated gender segregation in the labour market.

From this analysis it could be inferred that any women who are forced to work on a full rather than a part-time basis, following the introduction of team working, will benefit from higher pay, job security, more training and improved chances of promotion. However, once again these feminist concepts cannot be directly transferred to the clothing industry. It has already been pointed out that part-time work in the clothing industry is not numerically flexible and that part-time workers have the same employment rights as full-timers. Moreover, there was no evidence from the interviews conducted with either management or machinists that part-time workers receive lower wages than their full-time counterparts.

Nevertheless, despite the fact that part-time workers in the clothing industry have both equal pay and employment rights, employers may view them as marginal workers who are the first

to be chosen for redundancy and the last to receive training or promotion. There were hints of part-time workers being viewed as marginal from the interviews conducted, with managers agreeing that part-time workers could be the first to be made redundant. However the evidence is not sufficient to completely prove this hypothesis. Furthermore, the amount of training and promotion opportunities available in the industry is limited, not only amongst part-time workers but amongst full-timers too, as chapter six reveals. Further research involving detailed interviews with both management and machinists concerning the perceptions of part-time workers is therefore required in order to shed more light on this issue.

The feminist writers mentioned above, rightly point out that part-time work can lead to greater gender segregation in the labour market, but the extent to which this is accurate in the clothing industry is debatable and is, in any case, beyond the scope of this thesis. Machinists who worked part-time on the production line and are expected to work full-time in teams, may therefore gain very little from full-time employment and indeed, none of the part-time machinists interviewed believed that they would benefit from working full-time. On the contrary, discussions with machinists indicate that those who wish to work part-time but are 'forced' to work on a full-time basis will experience immense difficulties.

In chapter three (3.2.1b) the 'gendered' role of caring was discussed and it was explained that a number of authors (Beechey, 1987, Pollert, 1981, Walby, 1986, and Westwood, 1984) have argued that the socialisation process promotes caring to be viewed as an activity which is the main responsibility of the female. Women consequently face pressure to conform to these stereotypical gender roles, with those refusing to adhere being deemed as 'bad' mothers. As some women, who previously worked part-time on the production line (often due to caring responsibilities), are forced to work on a full-time basis in teams, as long as the task of caring remains the main responsibility of the female, and until childcare provision in Britain improves, these women may well have to work harder, being forced to perform two full-time jobs, one at home and one at work.

This process is reaffirmed by the evidence from the interviews with female machinists. The majority of whom took it for granted that they should have the main responsibility for childcare, and although they made it clear that working full-time and rearing children was not an easy process, very few of them actually advocated a need for more male involvement. The majority of the women interviewed, working on both the production line and in teams, talked at length about the difficulties they faced having the main responsibility for childcare and working full-time, thus supporting the evidence provided by the above feminist authors.

D: "I would say it's almost impossible working full-time."

E: "Impossible."

A: "It's impossible because of school holidays."

D: "Unless you've got a partner who's at home or somebody who lives virtually next door who can have them."

(Group discussion of team members)

The women expressed concern about the lack of part-time work within the industry, frequently arguing that working mothers face enormous problems within the industry which could quite easily be solved if management were prepared to grant them permission to work part-time.

B: "I think they ought to start doing part-time."

A: "I couldn't work full-time and go home and look after a family."

B: "It'd be impossible."

C: "Yeh, because they don't do any part-time work here and I think they should. Because there's a lot of women left to have babies and they're really good machinists and because they can't come back part-time they're losing good machinists. You know that's had years and years of experience and they just can't come back because it's too much and they go somewhere else to look for another job."

(Group discussion of team members)

This requirement for part-time working arrangements within the industry was widely recognised by the female operatives. In some cases women had left the company in order to give birth to their child and on return had been refused part-time work on the grounds that it caused the company 'too many problems'. Some explained that in these circumstances they had been more or less forced to leave the company and search for alternative employment opportunities. However, in the words of one female machinist,

"...it's the same everywhere, they just don't want part-timers."

(Team member)

As a result some women stated that they had no alternative but to work from home. Their partner's wage was often not enough to support the family and they expressed feelings of uselessness being a typical 'housewife'. These women said that they had worked at home

for a period of time, until their children were of school attending age. Homeworking is not however the ideal solution and creates specific problems of its own.

"The youngest must have been six before I actually went back to work because I did it at home but that becomes a bit of a bind at times working at home because you don't sit yourself down, somebody comes in and say's 'oh are you going to so and so?' and off you go and then you'll not get it done and things like that so you need to be very strict with yourself. I mean when you've got little children it's better than nothing int it, you know you're able to earn some money so it's better than not having anything at all, but you have to do it either when they've gone to school or when you've got little ones around you when they've gone to bed, for two or three hours, so you're working odd hours with that and you have to push yourself more than you do here."

(Production line operative)

Other machinists had faced similar difficulties, they had the main responsibilities for childcare and management had refused to allow them to work part-time hours. Thus, with no other alternative means of earning an income these women had made a conscious decision to work full-time and cope as best they could with the problems it created. These machinists utilised close female friends and/or relatives as childminders in order to overcome the difficulties of full-time work. Therefore providing supporting evidence to the theoretical explanations of authors such as Twigg and Atkin (1994) and Finch (1989) that care is frequently provided on an informal basis by close female relatives who, due to gender stereotypical roles present in society, feel obliged to provide the necessary care (3.2.1b).

"I managed by taking them to grandma's.....once I'd dropped them off at nine, I knew where they where till I'd got to pick them back up again....my mother-in-law had them in the school holidays."

(Production line operative)

"She's at school now. My ma looks after her while I come to work. I take her early in the morning and pick her up about fourish after work. My ma takes her to school and then picks her up and it works really well."

(Team member)

These solutions were not, however, the answer to all the female operative's problems. Some women found the task of combining full-time work and childcare too big a burden, this was particularly true of those women without any relatives at a close proximity. In these circumstances women stated that they were forced to leave paid work altogether for long

periods of time, at least until their children reached school attending age.

"Well mine [children] are grown up. I didn't work till they were, I didn't do a job until my youngest was nine. I didn't have nobody to look after them."

(Production line operative)

"I didn't go to work when they were younger I stayed at home....I left work and looked after them till they all left school. What else could I do. I didn't have anybody to help me out."

(Team member)

These sentiments were mirrored by machinists presently without children, who stated that they could see themselves ending up in a similar situation in a few years time, if they decided to have children.

"I would have to pack work in because I've got no parents and neither has me husband so there would be no messing about really, it would be a case of I'd have to stop. "

(Team member)

However, some machinists did argue that these stereotypical gender roles were changing and that in the future child rearing may become both a masculine and feminine activity. When asked if they thought that men were now taking more responsibility over childcare duties and if this would make it easier for women to work full-time in the future, the women appeared divided and at times the discussion got fairly heated. Some stated that working women would always have considerable problems and that men were not contributing any more to the child rearing process than they had previously. Others were more optimistic arguing that gender relations had changed substantially during the last few decades. These women, nevertheless, expressed a desire to see further changes and remained adamant that working women with children continue to face considerable problems at work and that this severely restricts their career progression. The following extract from a group discussion reveals the extent to which the women have mixed opinions.

C: "You know I think a woman tends to fit her life into a family, round her husband and her children."

B: "I think it's more difficult for a woman, and even though it's supposed to have changed, women's lib and all of this I think it will be the same for ever and a day."

A: "Because men always expect you to wait on them, it don't matter if you're full-time or not."

C: "Well its like if you've got children, who's expected to stop at home? It's the woman it's not the man."

D: "That's it, you work here all day and then you go home and you've got tea to prepare and you've got pots and...."

A: "Sit down about nine o'clock. "

D: "Mind you things are changing though now aren't they, or have changed. I mean my lads have grown up and their wives work, they're family life's different to mine, because their wife's career is just as important, both of them. So it don't just revolve around what husbands doing, it's what wife is doing as well. Whereas it didn't with me.....but there's women in here that's capable of doing a lot more, capable of doing office jobs and career jobs, to go a lot further than what they are, but they're fitting it in with their children aren't they and their families and everybody around."

(Group discussion of production line operatives)

It is therefore clear from the evidence provided here that gender relations are socially constructed in our society in such a way that women have the main responsibility for the care of dependants, in particular children. Thus in the absence of part-time work in the clothing sector, female employees are forced to take on board two full-time roles, one as a mother and one as a worker, hence creating enormous problems. Moreover, despite the difficulties that these arrangements generate, women continue to feel obliged to perform these two roles.

It has been seen in section 5.2.2 that the majority of the companies which have implemented team working have found it more difficult to offer part-time work than on the traditional production line. This means that machinists working in teams are more likely to have to work full-time, hence creating difficulties for many women employees, particularly for working mothers. Although there is some evidence that machinists may benefit from this process, with part-time workers being viewed by many managers as marginal, this evidence remains inconclusive and in any case the disadvantages of full-time work to women, who also have caring responsibilities, arguably outweigh any of these potential advantages.

The reduction of part-time work in the majority of the companies which have implemented team working within the clothing industry does not necessarily have to have such a detrimental effect on women. As long as existing stereotypical gender relations remain, women will continue to find it difficult to work the full-time hours required by many team

working companies. However, the introduction of team working could be accompanied by other strategies aimed at relieving the difficulties faced by women working full-time. Two of such strategies are the provision of flexible working arrangements and childcare facilities. If these are introduced alongside team working, women in companies whose managers refuse to offer part-time work may after all benefit from its implementation. In order to assess the extent to which this process is occurring, managers and machinists working in companies operating both the production line and team working were asked about the availability of flexible working arrangements and the provision of childcare facilities.

Firstly, to look at flexible working arrangements. An examination of the interviews with managers of companies still operating the conventional production line reveals that flexible working arrangements in the clothing industry are extremely limited. None of the production line companies offer flexitime or encourage the concept of job share. The most flexible working arrangements available involve allowing the workforce to start or finish slightly earlier or later each day. This is exemplified by the statement of a production line manager,

"We don't have job share, we normally say to part-timers 'you must work thirty hours within our opening times'. The full-timers can either start at seven thirty or eight o'clock and finish at four thirty or five o'clock and that's it, it's not real flexitime as such"

(Manager of production line company)

As flexibility is one of the principal characteristics of team working, one would expect the companies operating team work to offer a greater degree of flexible working arrangements than those still utilising the traditional production line. However, the pattern was similar for both groups of companies. None of the team work companies offered either flexitime or job share opportunities to their workforce. A manager of one company utilising team working did suggest that a policy of flexitime was in operation. However, similar to the companies still utilising the production line, this policy merely allowed each team to start or finish work slightly earlier or later each day.

It therefore appears that, in common with other manufacturing sectors in Britain, flexible working arrangements are absent in the clothing industry. Moreover, the implementation of team working does not seem alter this situation. This is exemplified by the following statement from a manager of a team working company,

"I mean that's [flexitime] one thing team working can't facilitate, I say to

them 'look you've got thirty nine hours there ladies, the doors are open from then to then, as long as we've got the work, let's go' "

(Manager of team work company)

The lack of flexible working arrangements within the clothing industry has wide implications for the predominantly female workforce. As stated earlier, women tend to have the main responsibility for childcare and other dependants. Female employees, particularly those working full-time, would therefore benefit enormously from flexible working arrangements. Flexitime would enable them to escort their children to and from school, and accompany them on visits to the doctors or dentist. Ideally, these tasks should be shared between both male and female parents, but until this situation changes and men take a more active role in the child rearing process, the burden will inevitably fall upon women.

This lack of flexibility within the industry is further highlighted by an examination of holiday entitlements. Almost all the sample of companies (both production line and team working) had extremely inflexible holiday arrangements, closing for just two weeks in July or August, therefore ensuring that the workforce all take their holidays simultaneously.

Managers in a few companies appeared slightly more flexible than others and allowed their employees a couple of floating days. Discussions with machinists in these companies reveal that flexible holiday arrangements enable working mothers to attend school events such as sports day or Christmas plays and to remain at home when their children are ill. However, these machinists suggested that the policy is insufficient and that the benefits are limited.

The task of quantifying the precise number of companies offering floating days has proved difficult. Even though they were pressed for answers, managers appeared quite vague when asked for further details about holiday arrangements. However, there do not appear to be any differences between companies utilising the conventional production line and team working in this respect, nor between companies operating different models of team working. From the evidence available, it is difficult to assess if the companies which do offer a limited number of floating days have any other characteristics in common (such as, the sex of the manager, the size of the company etc.). In any case, as this policy has only limited benefits to the workforce, such an analysis would not prove very useful.

It can therefore be seen that the implementation of flexible working arrangements can alleviate some of the difficulties faced by working mothers. However, as we have seen, none of the sample of companies have chosen to introduce such a policy. This can partly be

explained by the fact that the managers of both production line and team working companies fail to recognise the problems caused by this lack of flexibility.

This failure to recognise the importance of flexible working arrangements amongst the managers extended to both males and females and even encompassed those who had earlier stressed the value of part-time work to their female workforce. These managers appeared to believe that the availability of part-time work was a sufficient measure to enable women with childcare responsibilities to continue working in paid employment. However, they fail to understand that some women with childcare responsibilities may wish to work full-time and that one way of facilitating this is via the availability of flexible working arrangements.

From this evidence it is clear that flexible working arrangements are relatively absent within the clothing industry and that the introduction of team working does not encourage or enhance its provision. This lack of flexibility is unacceptable within an industry which has such a large proportion of female workers, particularly to those with caring responsibilities. Furthermore, it may cause particular difficulties to women working in teams, who are less likely to be in a position to work on a part-time basis. These women may be forced to suffer the problems of having two full-time jobs, one at home and one at work, whilst being denied policies which might relieve these difficulties, such as job share or flexitime.

Having discussed the availability of flexible working arrangements in the clothing industry, the provision of childcare facilities will now be explored. Not one of the thirty-three companies operating either the production line or team working provided any kind of childcare or crèche facilities for their workforce. This lack of provision was acknowledged by both managers and operatives alike, but was an issue of most concern to the latter, prompting passionate, heated discussions.

Although the female machinists (working on both the traditional production line and in teams) appeared resigned to the lack of childcare provision within clothing companies, many were aggrieved by the absence of alternative facilities outside the workplace, in either a public or private sphere. When asked about the adequacy of childcare facilities in this country, the female operatives unanimously stated that childcare facilities were inadequate, in terms of quality, quantity and price. A typical response by machinists when they were asked about the adequacy of childcare provision is outlined below.

C: "No, there aren't any"

All: "No."

D: "Definitely not.....there isn't any."

C: "Well if there is they're expensive aren't they?"

D: "Yeh, if there is you'll be paying out as much as you're earning and that's stupid."

B: "There used to be nursery schools."

C: "Well I mean your nursery schools don't take em till after three so you've got at least three years haven't you. "

E: "Unless your families gonna have them.....I waited till they went to school and then I got a part-time job."

(Group discussion of production line operatives)

The evidence from the interviews with machinists overwhelmingly points to a lack of adequate childcare provision in Britain. This reaffirms the arguments put forward in chapter three (3.2.1b) by commentators such as Finch (1989) and McDowell (1991) that childcare in Britain is grossly inadequate and amongst the worst in Europe.

As the clothing industry is a notoriously low paid sector, the quantity of childcare places available was not the only concern of the operatives. The cost of the facilities understandably also provoked much anxiety, with the majority of the women (working in both production line and team work companies) stating that this factor provided the biggest single barrier to crèche usage. Many agreed that, financially, it would not be worth their while to utilise a childminder and that if they were not able to draw upon an informal network of friends or relatives to take care of their children, they would inevitably be forced to cease paid employment, at least until their children reached school attending age.

B: "I don't think it would pay anybody in this trade to come back to work and pay a childminder. Well it wouldn't be worth their time, their effort and they just wouldn't gain anything at the end of the day."

A: "They just wouldn't gain anything because you see a childminder now, if you have one full-time for a week it's about £80, but then they'd perhaps only come out with £20 at the end of the week so it just wouldn't be worth it."

(Group discussion of production line operatives)

These sentiments were mirrored by machinists working in a team work environment.

C: "I haven't got no children, but I think it's disgusting what they charge, especially if you've got four or five children."

A: "Say you take home a hundred and twenty pounds a week, you've got to pay forty, fifty pounds out straight away for childminders, so it really works out that you're better claiming social then you are working because it works out that you get more money."

(Group discussion of team members)

The enormous expense of childcare facilities was likewise recognised as a problem by management. This was particularly noted by female managers who, despite their higher income than the average machinist, had faced similar problems. When asked if childcare facilities in Britain were adequate one female manager replied,

"No being a mother of one already. No I think it's very difficult, I think it's the cost more than anything for most women, certainly in this trade, it's not a very high paid.....this trade is renowned for quite low pay which obviously doesn't allow for mothers. Usually people with children in our trade generally find that it's family, family and friends or people that will accept you know maybe to split the wages that they earn.....the childminder is expensive, it's more than me mortgage. And I know that a lot of girls here couldn't afford to pay the amount I have to pay in childminding fees but you know obviously I do earn a lot more than most of the girls here, but it's still a lot for me really.

(Female manager of production line company)

The high cost of childcare facilities was a reoccurring theme throughout the group discussions and machinists working on both the production line and in teams argued that managers could alleviate this problem by providing on site crèche facilities. Some women stated that the provision of on site crèche facilities was of such importance that they would even be prepared to pay for the privilege, whilst others more sensibly suggested that the company contribute towards the costs. Women in one company, who were no longer allowed to work part-time following the introduction of team working, felt so strongly about childcare provision that they had made numerous suggestions to management.

"At the last meeting somebody said about so much towards childminding fees and they said they would look into it, but it's been asked before.....I don't know why they can't pay for a crèche for the amount of people that have got children and then pay so much.....you know because if someone's paying forty pounds a week and if you charge them twenty quid, they're

saving twenty straight away."

(Team member)

All the female managers who were interviewed (table 12, appendix 1) recognised the importance of childcare facilities to their predominantly female workforce. These managers suggested that childcare facilities were particularly important to mothers working full-time. Many of the male managers, on the other hand, failed to recognise the importance of childcare facilities. Even the male managers, referred to earlier, who recognised the value of their female employees and therefore offered part-time work, failed to recognise the importance of childcare facilities. These managers appeared to believe that the availability of part-time work is a sufficient policy for working mothers and consequently women with children who work on a full-time basis are not catered for.

Despite the fact that the majority of the machinists, as well as some of the managers, identified a lack of childcare provision outside the company sphere and recognised the importance of work place childcare provision, the managers who were interviewed all remained adamant that such facilities would not be provided in the foreseeable future. This pattern was similar in all the companies, in those operating both production line and team working, as well as those with male and female managers. In fact, pressure from the workforce to provide such facilities appeared to have no impact whatsoever, with a large number of company managers stating they had been approached by machinists about the possibility of providing childcare but that it was not a feasible option, the most frequently cited explanation being the financial cost involved.

"They've looked at the cost aspect of it but at that specific time it didn't work out cost effective enough but it depends what sort of level of machinists they're looking to bring back, I mean if and how much we're going to charge. If it's going to be free you could possibly look at getting ten or twelve excellent machinists back on which would obviously mean not having to recruit raw trainees, but it's been looked at.....it's just the cost aspect."

(Manager of team work company)

The high monetary cost of providing childcare facilities was often attributed to the existence of extensive legislation, with management arguing that the official requirements of a workplace crèche are so considerable that the whole process is unaffordable. In particular, management cited the nurse to child ratio, health and safety regulations and insurance requirements as the principal constraints.

"We don't have crèche facilities, legislation has now made that totally unrealistic financially for a factory of this size. You know when you consider that this is probably a large factory in this business, how the smaller factories could do it I don't know, because legislation has just put it out of the window. Health and safety, you're only allowed one for every six kids, you need one trained nurse, I mean it just becomes a nightmare.

(Manager of production line company)

From the evidence provided it is therefore clear that childcare facilities in Britain are inadequate for the needs of female operatives working in the clothing industry. Furthermore, despite the fact that some managers recognise the importance of on site crèche facilities, the high financial investment required has meant that they are absent in the clothing industry. This appears to be the case for companies operating both the traditional production line and team working. Thus, despite the fact that team working reduces the availability of part-time work company managers continue to refuse to provide crèche facilities. This lack of crèche provision inevitably has a detrimental effect for women with childcare responsibilities who work on a full-time basis.

As team working expands throughout the clothing industry and the availability of part-time work diminishes, women will be increasingly forced to work on a full-time basis. In the absence of childcare facilities and flexible working arrangements, this will inevitably result in an expansion of the reliance of women upon the caring capacity of the family. As stated earlier, the majority of the female operatives with young children (even those working part-time) stated that they relied upon close relatives to provide care for their offspring whilst they participated in paid employment. Moreover, these close relatives were often female.

However, not all women within the industry will be able to make use of such informal caring relationships, particularly those who have moved away from their place of upbringing and their close relatives. This suggests that only those women who have relatives living close by and who have retained their roots will be able to remain in paid employment.

"It was a problem for me, my mum and dad lived away at the time so I couldn't leave them with anybody so I just had to leave work till they were old enough."

(Team member)

5.4 CONCLUSION

The aim of this chapter has been to test the hypothesis advocated by various feminist authors that Post-Fordism leads to an expansion of numerical flexibility and that this process has damaging effects for female labour (Christopherson, 1989, McDowell, 1991 and Walby, 1989). By an examination of the introduction of one form of Post-Fordism - team working, in the clothing industry, this chapter has revealed that although the analysis of these authors may be correct in the tertiary sector, their hypothesis does not necessarily hold up in a manufacturing context.

The presence of numerically flexible work practices is quite low overall in the clothing industry, this being highlighted by a low level of redundancies, a lack of part-time employment opportunities and the fact that part-time work within the clothing sector is not necessarily utilised in a numerically flexible manner. Furthermore, this chapter has shown that the implementation of team working does not reverse this situation, suggesting that Post-Fordism is not necessarily accompanied by an expansion of a numerically flexible workforce, which is treated as peripheral and can be 'hired and fired' at the discretion of the employer.

The failure of team working to stimulate a greater degree of numerical flexibility is evident when exploring the level of redundancies. If the workforce are treated in a numerically flexible way and are 'hired and fired' according to demand, a high level of redundancies would be expected. Although the installation of team working initially stimulates a requirement for redundancies, a high degree of 'natural' labour turnover within the industry ensures that redundancies are not required, in the longer term. Furthermore, after the initial installation period, in companies operating team working alongside the traditional production line, machinists working on the latter system are more likely to be made redundant. Hence, indicating that in companies operating both systems of production, if anything, those working in teams will be less rather than more subject to numerically flexible work practices.

The inability of team working to stimulate numerical flexibility is also evident when examining the concept of part-time work. The majority of companies which have implemented team working have found that it renders the employment of operatives on a part-time basis more rather than less difficult than on the traditional production line. Moreover, it has been discovered that the level of part-time work in the clothing industry is not, in any case, a good indicator of the level of numerical flexibility, with part-time employees working only a few hours less than their full-time counterparts and therefore enjoying similar employment rights.

Some team working companies in the clothing industry do offer part-time work to their employees and it has been discovered that this is dependant upon the system of team working in operation, together with a number of complex interrelated cultural issues. The two companies which have found it easier to employ operatives on a part-time basis since the implementation of team working have been those which have adopted the Kanban system and which have provided comprehensive training for their workforce.

The other team work companies have found that the system of manufacturing renders it more difficult to offer part-time work than on the traditional production line and therefore only a limited number of them allow team members to work on a part-time basis. These companies provide part-time work despite the difficulties involved, primarily because they have managers who recognise the importance of female labour and their requirement for part-time working opportunities. However, for most team working managers, the problems of incorporating part-time work outweigh any concerns they have about the requirement of part-time work for female employees. Some companies which have only partially implemented team working do offer part-time working opportunities to operatives still working on the traditional production line. However, many of the managers of these companies have made it clear that when they adopt team working throughout the factory, part-time working opportunities will no longer be available.

The reduction in the availability of part-time work in the majority of companies which have introduced team working obviously has connotations for gender relations. It means that machinists working in teams are more likely to work full-time, creating difficulties to many women employees, particularly to working mothers who have the main responsibility for childcare. This is exacerbated by the fact that managers of companies operating team working refuse to encourage either flexible working arrangements or childcare facilities, both of which would help mediate the adverse implications of the reduction in part-time work. Despite the fact that most machinists would like flexible working arrangements and childcare provision and some managers also recognise the importance of the latter, both policies were absent in the companies visited.

In conclusion, the evidence discussed in this chapter suggests that the hypothesis that Post-Fordism leads to an expansion of numerical flexibility, which is consequently damaging to female labour can be refuted, at least in the context of the implementation of team working in the clothing industry. On the contrary, in some instances team workers are less likely to be made redundant and, in the majority of companies, they are less likely to be in a position to work part-time (which, in any case, cannot be classed as numerically flexible). Whilst the

former may benefit female labour, the latter may prove damaging, particularly to working mothers with childcare responsibilities.

CHAPTER SIX: TEAM WORKING, FUNCTIONAL FLEXIBILITY AND TECHNOLOGICAL CHANGE

6.1 INTRODUCTION

This chapter attempts to test the theoretical arguments arising out of chapter three, specifically those relating to the emergence of functional flexibility and technological change within the Post-Fordist economy. Similar to the previous chapter, this is achieved by the provision of evidence from the empirical investigation of the introduction of one form of Post-Fordism - team working, in the Nottinghamshire clothing industry.

Chapter three explored in detail the existing feminist theoretical debate surrounding the effects of Post-Fordism for gender relations at work. It was suggested that the implications of Post-Fordism for the workforce cannot, solely, be understood by a discussion of the concept of numerical flexibility, like that outlined in the previous chapter; the simultaneous development of functional flexibility and the significance of technological change also need to be taken into account.

It has already been pointed out that functional flexibility is a complex phenomenon. Various authors (Buchanan, 1994, Dawson and Webb, 1989 and Tomaney, 1990) argue that it can have a dual effect on the workforce, on the one hand stimulating job enrichment whereby workers are awarded a degree of autonomy and discretion, performing higher status, higher skilled tasks. On the other hand, they argue that job enlargement can also emerge, whereby workers simply perform a wider range of similar status tasks and experience labour intensification. It has likewise been explained that the new flexible technologies utilised within the Post-Fordist economy can have a dual effect. With authors such as Cockburn (1985), Truman and Keating (1987) and Wajcman (1991) suggesting that these technologies can be used to deskill some jobs and upskill others.

In chapter three it was revealed that: a) the extent to which the search for functional flexibility within the Post-Fordist economy results in either job enlargement or job enrichment; and b) the way in which technology is utilised are both dependant upon the way in which work is reorganised. Buchanan (1994) and Tomaney (1991) suggest that if certain models of team working are implemented (based on the Swedish ideal type) the workforce will experience job enrichment and operative skills will be seen as more important than the introduction of new technology. They go on to suggest that even if new technology is introduced within this

model of team working, it will be utilised in a way which upskills the jobs of the workforce. However, Buchanan (1994) and Tomaney (1991) suggest that if the full ethos of the Swedish prototype are absent or other variants of team working (such as the Japanese ideal type) are installed, the workforce may instead experience job enlargement and new technology will be used in a way which deskills the jobs of the workforce.

Within chapter three it was also suggested that the way in which work is reorganised and therefore the extent to which the workforce experience job enlargement or job enrichment and either upskilling or deskilling as a result of technological change may be determined by gender. Various authors (Dawson and Webb, 1989, Elgar, 1991 and Wood, 1986) have argued that male employees are the prime beneficiaries of job enrichment, whilst their female counterparts are subjected to job enlargement and hence labour intensification. Some feminist writers (Cockburn, 1985, Jenson, 1989b and Truman and Keating, 1987) explain this process by the concept of the social construction of skill. They suggest that women are viewed as unskilled and incapable of working autonomously and performing the higher order tasks involved in job enrichment. Other commentators point out that the jobs which are upskilled as a result of technological change tend to be assigned to male employees and those which are deskilled allocated to women (Chiesi, 1992, Cockburn, 1985, Crewe, 1990 and Zeitlin, 1992). Cockburn (1985), Jenson (1989b) and Wajcman (1991) explain that this is related to the fact that technology in our society is gendered and therefore socially constructed. This process was exemplified in chapter three by an examination of the implementation of team working. It was suggested that the likelihood of the implementation of the models of team working which lead to job enlargement and deskilling, rather than enrichment and upskilling may be higher when the workforce are predominantly female.

Existing research in this area is relatively absent and therefore the aim of this chapter is to redress this gap in the literature. This is achieved by testing the hypothesis that *'models of team working which lead to job enlargement and which utilise new technology in a way which deskills are more likely to be implemented than those which lead to job enrichment and which utilise technology in a way which upskills when the workforce are predominantly female'*. As explained in chapter four, the models of team working implemented in the sample of companies cannot easily be classified into either the Japanese or Swedish ideal types but are instead categorised into those utilising the Kanban or Toyota Sewing System (TSS) Japanese philosophies. This chapter will therefore explore the extent to which these two systems of team working determine whether the jobs of the workforce are enlarged or enriched and deskilled or upskilled as a result of technological change.

The task of testing this hypothesis in the context of the Nottinghamshire clothing industry involves an examination of a number of complex but interrelated issues. In order to avoid confusion the chapter is therefore divided into three separate but interlinked sections, which have a number of common themes and overlaps.

The first section (6.2) explores a number of criteria in order to compare and contrast the quantity and status of tasks undertaken by those working on the traditional production line to those working in teams. The link between the skill content of individual tasks and technological change is also explored. The way in which different systems of team working play a part in this whole process is then examined.

The second section (6.3) examines the implications of this process for employees working in teams. A number of criteria are again explored in order to assess the extent to which the quantity and status of tasks undertaken by machinists affects the quality of their working life.

The third section (6.4) draws on the evidence provided in the first two parts of the chapter to explore the validity of the job enlargement versus job enrichment dichotomy. This incorporates a discussion about the worthiness of the deskilling versus upskilling dichotomy which is said to result from technological change. It also examines in further detail the nature of and explanations for the models of team working implemented, and investigates the role that gender plays in this process, thereby facilitating an explanation for the way in which team working affects the predominantly female workforce. Finally, some conclusive comments are provided in the fourth section (6.5).

This chapter utilises both qualitative and quantitative evidence, drawing upon the operative questionnaire results, the group discussions with machinists and the interviews with managers (see section 4.5.3 for a more detailed analysis of these research methods).

6.2 THE QUANTITY AND STATUS OF TASKS

Advocates of team working (NEDO, 1991b, Farrands and Totterdill, 1990, Totterdill, 1994, Tyler, 1994) frequently justify its implementation in the clothing industry on the basis that it has the ability to enhance the quality of working life of the workforce. They argue that team working can promote the development of a multi-skilled workforce, who possess a range of transferable skills and that as machinists are expected to work autonomously in small teams, the level of these skills extend beyond those which are performed on the conventional production line to encompass the performance of tasks of a more discretionary nature.

These tasks include problem solving, decision making during style changes, participation in the setting of production targets, responsibility for quality and so on.

These team working advocates are, however, keen to point out that the workforce will only experience these benefits if team working is implemented alongside substantial cultural changes, in particular management style must be based on responsible autonomy rather than direct control, and a comprehensive training programme initiated. However, these commentators often fail to outline the resulting implications for the workforce if team working is implemented without the required cultural changes. McLellan *et al.* (1996) have begun to redress this, pointing out that the implementation of team working without either a simultaneous change in the method of governance or the development of a comprehensive training programme will result in the workforce being expected to perform a wider range of similar status tasks but being prevented from performing tasks requiring more discretion. McLellan *et al.* (1996) therefore arrive at similar conclusions to those of other authors previously mentioned such as Buchanan (1994) and Tomaney (1990). The work of these commentators was discussed in detail in chapter three, they suggest that team working can result in machinists performing a wider range of similar status tasks as well as higher order tasks and that the outcome is determined by the system of team working implemented.

This section of the chapter aims to test the propositions of these authors. This is achieved by exploring the extent to which the implementation of team working in the clothing industry changes the nature of the jobs of the workforce, particularly focusing on the quantity and status of the tasks undertaken. The role that technological change plays in this process is also explored. In order to achieve this, a number of criteria are investigated and within each, the experiences of those working on the traditional production line to those working in teams are both compared and contrasted. The role that different systems of team working play in this process is analysed, focusing on the differences in management style and training.

6.2.1 Multi-skilling

The term multi-skilling can be interpreted in a variety of ways. In academic discussions (for example, Farrands and Totterdill, 1990) it is often used to refer to the process whereby workers enjoy an expansion of technical and social skills, experiencing polyvalency and performing tasks of both a similar and higher status. The technical skills mean that team members perform a wider range of tasks of a similar status, operating a variety of machines and performing different sewing operations. Whilst the social skills mean that machinists participate in higher order tasks such as problem solving and decision making. Amongst

managers and operatives within the clothing industry, on the other hand, the term multi-skilling is often simply used to mean the ability to perform a wider range of similar status technical skills.

As the empirical research for this thesis relies on interviews with both employers and employees within the clothing industry, the latter definition of multi-skilling is utilised here. The prevalence of multi-skilling, in this sense, indicates that machinists perform a wider range of similar status tasks. This is exemplified by the discussions with both managers and machinists, who agreed that multi-skilling involves the performance of a wider range of machining tasks, but the level of skills required are of a similar nature.

"Yes, certainly, no more skilled, they [multi-skilled workers] are versatile, they have more skills of the same, but not skills to a higher standard."

(Manager of team work company)

The questionnaire results suggest that the majority of all machinists view themselves as being multi-skilled (table 1, appendix 5). However there are minor disparities between the two groups of machinists, with slightly more of those working in teams identifying themselves as being multi-skilled in comparison to those working on the production line. 87% of the team work respondents stated that they agree with the statement 'I am multi-skilled' compared to 62% of those working on the traditional production line. Those working in teams also appeared slightly less inclined to agree with the alternative statement 'I have one good skill', with a mere 3% agreeing with this statement, in comparison to 19% of those working on the production line.

An analysis of the replies of the respondents working on the traditional production line reveals that there is a correlation between the size of the company and the degree to which machinists believe they are multi-skilled. All the machinists working in production line companies with less than fifty employees agreed with the statement 'I am multi-skilled'. As the size of the company increases, the likelihood of machinists agreeing with this statement diminishes. This can be explained by the fact that small firms operating the traditional production line are inherently more flexible; they have a limited number of machinists who consequently have to learn a wider range of skills than those in larger companies and can often 'put their hand to almost anything'. The extent to which this is true in team working companies is difficult to detect as variations in company sizes are less pronounced (see section 4.4.1).

Further evidence from the questionnaire results reveals that the magnitude of multi-skilling is more widespread in companies operating team working than in those still utilising the production line. The number of skills possessed by machinists working in teams appears far greater than those working on the production line, with the average number of skills enjoyed by the former being four, double that of the latter (table, 8). This is further reaffirmed in table 2, appendix 5, which clearly shows that machinists working in teams, overall, tend to possess a higher number of skills than those working on the production line. It must, however, be noted at this juncture that once again there appears to be a correlation between the size of the production line companies and the skill levels of the machinists. The smaller the company (in terms of number of employees), the greater the number of skills possessed by individual machinists. Again, this can be explained by the 'flexible' nature of small firms.

Table 8. Average Number of Machining Skills (mode)

Production Line	Team Work
2	4

The quantity of skills possessed is not, alone, an adequate indicator of the existence of a multi-skilled workforce. Machinists may possess numerous skills but unless these are regularly utilised, they cannot be classed as polyvalent. The number of skills performed by machinists during each working day is therefore a more accurate reflection of the existence of a multi-skilled workforce. An analysis of this very issue nevertheless confirms that machinists working in a team work environment are more likely to be multi-skilled than their production line counterparts. The group discussions reveal clear disparities between the number of jobs that machinists working on the conventional production line perform each day, in comparison to those working in teams. Although the majority of those working on the traditional production line stated that they were multi-skilled, all except four said that in general they remain on one sewing operation during each working day (this figure and all other figures in this chapter, unless otherwise referenced, are derived from an analysis of the interviews undertaken). This even extended to those machinists, previously mentioned, who work in small production line firms and have a wider range of sewing skills. Although these machinists do possess a number of skills, they very rarely change operations within each working day, only changing tasks in certain circumstances (i.e. if an operative is off ill etc.).

The four machinists working on the traditional production line who said that they change sewing operations during each working day all work in the same company, producing

wedding dresses. Due to a combination of both the size of the firm and the nature of the sewing tasks involved, they change operations more frequently than other machinists working in companies operating the traditional production line. The firm employs just fourteen people and the work required to manufacture wedding dresses requires a wider variety of sewing operations than the more standard garments produced in the other companies. The dresses are 'one off' items and consequently the manufacture of each new garment involves a style change and the requirement of different sewing operations.

For machinists working in a team work environment, on the other hand, the regular performance of a range of tasks is the rule rather than the exception, with 83% stating that they change operations during each working day. The extent to which these machinists are multi-skilled and are expected to regularly change jobs is revealed by the following discussion,

A: "We do about three jobs every day."

C: "...You don't stop on one job all day.....well before you was only like doing one job basically, you did change jobs, you might have been on one job for a couple of months and then moved, like that. But you do learn more jobs on JIT don't you?"

E: Ooh, how often in a day? Well put it in an hour. In an hour there are certain jobs you'd be moving every five minutes, every ten minutes.

(Group discussion of team members)

The difference in the replies of production line and team working respondents in this respect reveals the subjective nature of the concept of multi-skilling. The majority of all machinists believe they are multi-skilled, yet those working on the traditional production line generally perform one main task each working day, whilst team members regularly change operations.

It is clear from the evidence collected that the frequency which team members change operations within each working day varies substantially from company to company, as does the skill content of each operation and the ability of machinists to decide when and where to move. Each of these appear to be dependant upon the nature of the system of team working implemented, as briefly mentioned in the previous chapter (5.2.2), as well as the degree of cultural change.

In six of the companies machinists stated that they move workstations frequently each and every working day, often changing operations every few minutes. These machinists were all

working in companies which had implemented a system of team working based on the TSS principle. As explained in the previous two chapters, the TSS style of team working is based on the bump back philosophy, whereby workers have a pitch of three or four sequential workstations. When the final operative in the team completes a garment, he/she takes control of the work of the previous operative and so on, until the first operative is free to commence another garment. As a result, operative movements between workstations are both frequent and regular.

In order to facilitate the frequent operative movements required within the TSS model of team working, the managers pointed out that they had invested in both technical training and new technology. Technical training is explored in detail in section 6.4.2 and so a detailed discussion shall not detain us here. It is suffice to point out that this technical training enables machinists to operate a wider range of sewing machinery. Investment in new technology based on programmable sewing machinery which reduces the skill content of individual tasks was initiated in all six TSS companies, with a view to shortening the sewing time involved in each operation and enabling operatives to perform a greater number of tasks.

"The machines were slowed down and therefore the idea was if the machines are slowed down the operators could handle the work more efficiently, they would be able to handle their work more easily and so acquire a skill quicker and therefore learn the job quicker and also each operation of the stage of the garments made up was reduced down to a minimum so that they could learn it very easily.....A lot of them have been deskilled, in the past on a conventional way if it had been a big job where you had to make your collar, turn it out, top stitch your collar, then attach it, attach the first side, close it again and close the second side. Now we have a separate machine which would make the collar, then we'd have on the second machine we'd turn it through, then top stitch the collar, then a third machine would attach the first side and then the fourth machine would close the second side, so it has actually been deskilled so that they can learn them and the reason for it is so they can learn quickly and therefore the learning curve of the style has been reduced dramatically."

(Manager of TSS team work company)

When analysing the effects of this technological change it is, however, clear that not all the tasks are deskilled, some tasks require a greater degree of skill content. The sewing machines are often programmable and so also require additional higher level skills involving computer programming and the alteration of pre-set programs. However, these tasks are not always performed by the machinists. Indeed, a detailed discussion of the implications of the new technology introduced in these companies reveals that although the machinists

experience the deskilling involved in these new computerised sewing machines, they do not enjoy the accompanying upskilled tasks of computer programming or even computer program interception. These tasks are frequently carried out by other predominantly male personnel, usually mechanics. The machinists did concede that computerised sewing machines had enabled them to perform some limited programming tasks but these simply involved the 'pressing of a few buttons'. When asked if they perform any programming activities, typical answers from TSS team members were,

B: "You don't actually do that programming they'll set it up and then you'll perhaps alter the simple things."

A: "No, they set the programs up and you change the stitches and things."

B: "The mechanics do the complicated things and we do the easy ones, like measurement or drop or...."

C: "You have like two programs or three programs and you just hit a button to change each program as you go along."

(Group discussion of TSS team members)

This evidence therefore reveals that the introduction of new computerised programmable sewing machines in TSS based team working companies are utilised in a way which deskills the jobs of the machinists, whilst upskilling the jobs of the mechanics. Explanations for this are linked to the fact that machinists are provided with technical training to operate a range of sewing machinery but this does not incorporate training in programming activities. One reason for this is related to the way in which technology is gendered (see section 6.4.2a).

This combination of the provision of technical training (enabling machinists to operate a range of workstations) alongside technological change means that machinists working on the TSS model of team working perform a wider range of similar status tasks, which often have less skill content. This is exacerbated by the fact that managers retain overall authority and as a result machinists tend to have very little autonomy over their actions. All the machinists working in TSS based teams stated that they are able to utilise all the workstations in their designated pitch but that their pitches are not self-determined, and are instead prescribed by their managers or supervisors.

A different picture emerged from an examination of the situation in the ten other team working companies, all of which operated a variant of the Kanban model. Team members appeared to move far less frequently than their TSS counterparts, moving between one and

four times a day. They are only required to change workstations when the Kanban is full, in contrast to the TSS model where operation changes are required each time a garment is completed. As the frequency of machinist movements are lower within the Kanban model, investment in the new technology characteristic of the TSS model is not required and therefore deskilling of individual tasks does not prevail to the same extent. Indeed, managers of the Kanban based team working companies suggested that the introduction of the new system of production did not directly require the implementation of new technology and although they all agreed that they had introduced some new programmable sewing machines in recent years, they said that they would have been introduced even if they were still operating the traditional production line.

"We have got computerised machines, but we'd got them before we went onto team working.....I don't think it [team working] really changes it."

(Manager of Kanban team work company)

Moreover, the managers of these companies suggested that if anything, the introduction of team working had actually reduced the requirement for this type of technological change, rather than increased it. These managers advocated an expansion of employee skills and stated that they had only introduced new technology which deskills sewing operations if absolutely necessary.

"New machines, we haven't introduced much new technology, although we have introduced some.....if we were to introduce a lot of technology we would be talking of massive costs in equipping sixteen machines, for instance specialised machines. We've tended to go for operator skills rather than high-tech machinery."

(Manager of Kanban team work company)

Although it is clear that companies operating the Kanban system of team working focus far less on the introduction of new technology which deskills individual tasks than companies operating the TSS model, when new programmable sewing machines have been introduced in Kanban companies, once again the computer programming tasks which have a higher degree of skill content tend to be performed by the predominantly male mechanics. This can again be linked to the absence of technical training focusing upon programming activities at an operative level and the way in which technology is gendered (section 6.4.2a).

Nevertheless, unlike TSS team members, most Kanban team members did appear to gain a greater degree of responsibility and discretion than they had on the production line. In all

except one Kanban company (company 14, table 6, section 4.4.2b) the style of governance had changed somewhat, with managers devolving some of their duties to team members. This devolution of authority was not great and merely meant that in accordance with the condition of the Kanban, machinists were allowed to decide when to move workstations and which workstations to move to. Thus, if two workstations had empty Kanbans, machinists had the responsibility of deciding which one to fill.

C: "We move when the Kanban's full. When it's full we do another job where the Kanban's not full."

D: "That's it, you change jobs so to speak when it's full, when you've done all the bundle, then you move, it's down to you when you move."

(Group discussion of Kanban team members)

This can be clearly contrasted with the experience of TSS team members, whose movements are constrained within their individual pitch, which is in turn determined by management.

The experiences of machinists working in teams based on the Kanban model are not, however, homogenous and an analysis of the interviews has revealed the presence of two different scenarios. Machinists in the majority (7 out of 10) of the companies operating the Kanban model of team working had not received any technical training to enable them to operate a range of workstations following the installation of the new system of production. Managers of these Kanban companies did not prioritise training to the extent that TSS managers did; frequent and regular operative movements are far less crucial to the Kanban philosophy. However, operative movement between workstations is still required and both the machinists and managers appeared to recognise the importance of multi-skilling to the Kanban team work philosophy.

A: "Team working is all about being multi-skilled. I mean that doesn't mean that we are multi-skilled, but that's what team working is all about."

C: "Well you've got be multi...to earn your money, you can't earn your money, get your bonus like if you can't do a few jobs."

(Group discussion of Kanban team members)

The majority of the companies operating team work (both TSS and Kanban systems) have introduced a system of payment which is related to performance, whereby the team receive a bonus for reaching certain levels of production (payment systems are explained in more

detail in section 6.3.2). In order to operate at the optimum speed and therefore reach the production targets set, machinists are required to perform different operations within the team. However, unlike the TSS team members, machinists in the majority of the Kanban companies are not formally trained for the required multi-skilling. As a result machinists in all except one (again company 14, table 6, section 4.4.2b) of these seven companies explained that they had been forced into a situation where they had to cross train, teaching their fellow team members their 'best' skill. These machinists invariably conduct this cross training during their lunch breaks and are very rarely paid for these extra activities.

The level of multi-skilling amongst machinists working in the majority of the Kanban based companies is therefore limited and dependant upon the willingness and ability of team members to cross train each other. As a result many of these machinists indicated that they move workstations only when absolutely necessary, preferring to remain on the workstation that they are most familiar with and that they can operate the quickest.

This situation can be contrasted to that in the minority (3) of companies which have implemented the Kanban model of team working. Managers of these companies have provided technical training for individual team members enabling them to operate a variety of workstations and as a result cross training is not required. Machinists working in these companies have therefore been able to utilise the limited amount of authority devolved from management to decide when to move workstations and which workstations to move to. So as well as performing a wider range of similar status tasks they have also experienced an increase in delegated responsibility, at least in some respects.

From the evidence provided it can therefore be seen that team working does encourage a degree of multi-skilling, with machinists performing a larger quantity of sewing operations than when working on the traditional production line. However, the way in which this multi-skilling affects the workforce is determined by the nature of the model of team working implemented and the accompanying cultural changes. Multi-skilling within the TSS model of team working means that machinists move frequently between prescribed workstations, and the accompanying technological change means that each operation has a lower degree of skill content than previously. Multi-skilling within the Kanban model of team working also means that machinists perform a wider range of similar status tasks but some additionally experience a limited increase in levels of responsibility.

6.2.2 General Levels of Responsibility

The general level of responsibility experienced by machinists is an indicator of the status of tasks performed by them. A high level of machinist responsibility suggests that machinists have some discretion and autonomy and are therefore able to perform higher order tasks.

Both management and machinists working in companies which had implemented team working were asked if team members had been delegated any more responsibility than on the conventional production line. The majority of both answered positively, with 81% of the managers stating that machinists now had more responsibility than on the production line, whilst 60% of the machinists came to the same conclusion. This discrepancy in the views of management and machinists can be accounted for by the fact that on occasions management stated that they had assigned more responsibility to machinists, when in reality they had not. Two main reasons have been identified for this: in some situations managers were intent on portraying their company and hence team work as beneficial to the workforce, whether or not it was; and in other cases managers and machinists had different ideas of the definition of responsibility. What managers believed to be a devolution of responsibility, machinists classed as the mere ability to think and in their words 'use our brains'. Although many machinists viewed this ability to 'think' as beneficial, they quite rightly did not classify it as a greater degree of responsibility.

Despite this discrepancy between management and machinist responses, the majority of the machinists indicated that they had more responsibility than previously. All these machinists were working in companies which had implemented the Kanban model of team working. The machinists working in TSS based teams, on the other hand, unanimously agreed that they had no more responsibility than previously. On the surface this therefore suggests that the Kanban model of team working is more likely to stimulate a greater degree of responsibility than the TSS model. However, the nature of this additional responsibility requires exploration (see below).

6.2.3 Self Organisation within the Team

Self organisation within the team suggests a greater degree of machinist responsibility and autonomy and has implications for the status of tasks performed. All 60% of the machinists who stated that they had experienced a greater degree of responsibility following the introduction of team working attributed this additional responsibility to the requirement for self organisation within teams. As members of a team these machinists have the prime responsibility for its operation and performance. Each team is expected to manage itself,

with minimal intervention at a supervisory level and as a consequence team members are often required to make decisions which would have been the responsibility of the supervisor under the conventional production line. These decision making responsibilities encompass team discipline and performance levels.

The requirement to make these decisions is in itself an indicator of enhanced machinist responsibility, however this is reinforced further still as the level and quality of each team member's performance is dependant upon that of their peers, thus ensuring that each team member is responsible not only for their own actions but for those of their colleagues. This aspect of team working was viewed by the Kanban team members as the main factor contributing to their higher levels of individual responsibility,

D: "I think you've got more responsibility when you're working as a team than when you're working on your own because you're not just looking after yourself are you."

B: "And like now, with there being four of you it's not just yourself you're working for, it's everybody."

(Group discussion of Kanban team members)

The experiences of the machinists working in the companies operating the TSS model of team working were, however, different. All suggested that self organisation within teams was not a feature of the TSS model of team working. Within the TSS model, managers and supervisors appeared to retain overall control and as a result the supervisors had the main responsibility for the organisation of the team rather than team members. So while Kanban based teams are expected to manage themselves, with minimal intervention at a supervisory level, TSS based teams instead rely on both supervisory and managerial direction. As a consequence TSS team members are very rarely expected to make the decisions that their Kanban counterparts are; team discipline and performance levels are controlled by supervisors who regularly and frequently 'patrol' the teams that they are responsible for.

B: "We don't get any more responsibility, any more say. We don't, they interfere. It's not so much management, but it's supervisors int it. The supervisors tell you what to do....they're up and down, up and down all time, watching and then...."

A: "Like a bit ago they took two girls off the team and put two ones on who weren't as good and so we weren't happy. No we weren't happy at all."

B: "We didn't get a say."

(Group discussion of TSS team members)

The suggestion that Kanban team members experience a greater degree of responsibility for team organisation in comparison to TSS team members is reinforced by an examination of team meetings. In order to facilitate collective team decisions, thereby ensuring optimum team performance, machinists working in both TSS and Kanban based teams stated that they have been instructed to conduct team meetings, either amongst themselves or if the issue cannot be resolved, jointly with managerial or supervisory representatives. This is a clear contrast to the situation amongst machinists working on the traditional production line who unanimously stated that team meetings were unheard of, highlighting a degree of additional responsibility delegated to machinists working in teams.

A detailed analysis of the nature of the team meetings, however, indicates that the levels of responsibility involved in team meetings varies substantially from company to company and that the model of team working implemented plays a large part in this process. There appears to be a clear contrast between the nature of team meetings held in companies operating the Kanban system of team working to those utilising the TSS model.

Within TSS based companies team meetings are held on a regular basis, ranging from once a day in some companies to once a month in others. These team meetings are invariably instigated and directed by the supervisor responsible for the team and are often referred to as team briefings, which is perhaps a more accurate title. All the TSS team members stated that they regularly attend team briefings/meetings and that their supervisor also attends, without exception. The purpose of these team briefings is diverse; they are used to keep supervisors and managers informed of the progress of the team, to identify and solve any problems relating to either the production process or associated with team cohesion, to discuss performance levels, production targets, style changes and so on.

The TSS managers agreed that team briefings are often instigated at a supervisory level but were additionally keen to point out that machinists are also able to call team meetings with managers and/or supervisors if required. However, the machinists disagreed, they stated that although this was theoretically true, the reality was quite different. None of the TSS team members had ever attended a team meeting that was not instigated at either a supervisory or managerial level. The nature of these team briefings again confirms the limited amount of responsibility devolved to TSS team members; responsibility for team organisation and

performance remains at a supervisory level.

In contrast to the TSS team meetings, those within Kanban based companies appear both informal and ad hoc. As previously explained, Kanban team members are responsible for the organisation of the team and one way in which they facilitate this is via team meetings. Unlike TSS team members, machinists working in Kanban based teams meet on the basis of need and the responsibility of deciding when and where to meet and what issues to discuss lies with them. The nature of the meetings varies according to the issues to be discussed. If a problem arises which is particularly severe and affects the whole team, the entire team stop work and a meeting is called. If the problem is a minor one and only affects certain team members, the machinists concerned gather together to discuss the issue. This therefore again indicates that Kanban team members have a greater degree of responsibility for team organisation than their TSS counterparts.

More detailed discussions with Kanban team members in relation with these team meetings, however, reveals that the increased responsibility derived from the introduction of team working is in reality far more limited than it at first seems. Although the majority of the machinists stated that they are responsible for calling team meetings, like their TSS counterparts, they are unable to initiate team meetings with either supervisors or managers. Again, Kanban team members said that theoretically they could initiate a team meeting with management, but that they were frequently discouraged from doing so. This is exemplified by the fact that Kanban team members are invariably paid for time spent in meetings called by management, but when they request such a meeting, they are not paid for lost production time.

Question: Can you ask for a meeting with management if you want to?

All: "Yeh."

C: "Yeh, but we don't get paid for it."

A: "If you ask for a meeting you don't get paid for it, but if they ask you, then you get paid for it."

(Group discussion of Kanban team members)

Furthermore, Kanban team members overwhelmingly agreed that management are often reluctant to attend any meetings which are arranged at an employee level and even when they do attend, they very rarely act on any of the machinists comments or anxieties. When machinists in another team working company were asked if they could have meetings with

management, the reply was,

B: "You can ask to see him [manager] and he will see you."

A: "He will see you, it don't mean he'll take any notice."

Question: Do you feel that these meetings with management are useful?

D: "No, we think that was a waste of time."

(Group discussion of Kanban team members)

It can therefore be seen that the extent to which the introduction of team working leads to a greater degree of machinist responsibility with respect to self organisation within the team varies substantially from company to company and is determined by the type of team working introduced. The degree of responsibility devolved to machinists working in TSS based teams is almost non-existent in this respect. Managers and supervisors retain overall control, making decisions about the organisation and performance of the team, as well as instigating and leading team meetings/briefings. In contrast, the level of responsibility devolved to machinists working in Kanban based teams is more substantial. Responsibility for the organisation of the team is transferred to team members, who are able to make joint decisions by instigating and conducting team meetings. This indicates that Kanban team members enjoy a greater degree of responsibility than their TSS counterparts. However, this responsibility is limited and does not always extend to the instigation of team meetings with managerial or supervisory staff. In any case, it is clear that machinist suggestions put forward in these team meetings are very rarely taken seriously by managers.

6.2.4 Solving Production Problems and Line Balancing

Many advocates of team working (Farrands and Totterdill, 1990, NEDO, 1991b, Tyler, 1994) argue that its introduction can lead to a transfer of responsibility for both line balancing and for the resolution of other production problems from a supervisory to an operative level. Farrands and Totterdill (1990) point out that the frequency of stoppages in most production line companies is relatively high due to both bottlenecks and other production problems and that supervisors usually bear the burden of the responsibility for these issues. They contrast this to the situation in companies operating team working, suggesting that the responsibility for line balancing is transferred to team members who are also expected to take whatever action is required to avoid or solve other production problems. They argue that this process not only benefits the workforce, enabling them to enjoy the benefits of enhanced responsibility but that it is also advantageous at a company level, leading to a reduction in

stoppages; supervisors on the production line are a lot slower to intervene than team members are.

Farrands and Totterdill (1990) stress that the responsibility for line balancing and other production problems will only be transferred to an operative level if company culture simultaneously changes. They argue that such a devolution of responsibility can only occur if management style is substantially altered away from the direct control method of governance to responsible autonomy (see page 41, section 2.3.2a for a more detailed description). A comprehensive programme of training must likewise be introduced throughout the company hierarchy, managers and supervisors need to be trained to accept this devolution of responsibility and also to facilitate machinist action when required. Meanwhile machinists need training to assist their participation in these activities.

In order to establish the extent to which team working leads to a devolution of line balancing and problem solving activities, all the machinists were asked in the questionnaire about their participation in these activities. However, this appeared to be a difficult question, with many being unsure of the answer, agreeing neither with the statement 'I solve production problems' nor with the statement 'I do not solve production problems' (table 9). Nevertheless, there are slight disparities between the replies of the machinists working on the conventional production line and those in teams. Table 9 reveals that the latter are slightly more likely to participate in problem solving activities in the production process, than those working on the traditional production line, with 22% of the respondents working on production line agreeing with the statement 'I solve production problems' compared to 30% of those working in teams. Further evidence to this effect can be seen when analysing the number of respondents who agree with the statement 'I do not solve production problems' with 39% of those working on production line agreeing with the statement, compared to just 16% of team members.

Evidence from the group discussions reveals a similar pattern, with 31% of the team members agreeing that they solve production problems compared to 20% of those working on the conventional production line. These machinists were then asked about the nature of the problem solving activities that they are engaged in and all of those working on both the production line and in teams mentioned line balancing activities.

In light of this evidence it appears that only a minority of the machinists participate in problem solving activities, all of which involve line balancing tasks. Moreover, machinists working in teams have only a slightly higher propensity to participate in these activities than

Table 9. Participation in Problem Solving Activities

Statement 1 I solve production problems	Strongly agree with statement 1	Agree with statement 1	Do not agree with statement 1 or 2	Agree with statement 2	Strongly agree with statement 2	Statement 2 I do not solve production problems
Number of Respondents on Production Line (%)	5 (8)	8 (14)	23 (39)	3 (5)	20 (34)	
Number of Respondents on Team Work (%)	4 (10)	8 (20)	21 (54)	3 (8)	3 (8)	

their production line counterparts. However, a more detailed analysis of the results of both the questionnaires and group discussions reveals that the situation is more complex; the nature of the production line companies and the system of team working implemented also play a part in this process.

The production line machinists who suggested that they participate in problem solving and line balancing activities appear to work in companies of a very specific nature. They all work in small companies, none of which employ more than twenty five workers. These machinists all agreed that, although they often participate in problem solving activities, primarily to avoid bottlenecks, these actions are not authorised at a managerial level. Managers are often unaware of any action that they have taken, a factor which is exemplified in the following discussion,

A: "We all muck in really. When we see work building up, or if there's a problem, if the fabric's not been cut right or whatever, you stop build up's, blockages on the line if you can, if you stop a build up, you can get the work out quicker, faster like."

C: "No one tells you, you just pick it up as you go along. You soon learn to spot problems and instead of getting the supervisor, that takes time...."

Question: Does the manager know that you participate in problem solving of this nature?

All: "No."

A: "He ant got a clue what's goin on."

(Group discussion of production line operatives)

Similar evidence to this effect was discovered by Farrands and Totterdill (1990). It may appear strange that machinists are willing to take such action when they are not instructed to do so. Why would they participate in activities that they do not have to? The answer is simple; machinists working in traditional production line factories are generally paid on a piecework basis (see section 6.3.2 for a more detailed discussion of payment systems). Consequently the higher the level of individual production, the higher the level of earnings. As wages are so implicitly linked to productivity it is therefore in the (financial) interest of individual machinists to avoid any potential situations, such as bottlenecks, which may affect the level of productivity.

This then raises an additional question; why is it that machinists employed in small firms carry out these unauthorised activities and those in larger companies, who are also paid on a piecework basis do not? There are two main explanations for this. Firstly, as Farrands and Totterdill (1990) also point out, machinists in smaller firms generally have a higher skill base than those in larger companies and therefore tend to have a greater awareness about the process of garment construction which enables them to recognise problems before they arise. Secondly, supervision tends to be less formal in smaller companies. Many of the small firms have just one supervisor who is primarily engaged in machining activities, but intervenes if required to oversee any difficulties. As supervision is informal and ad hoc machinists are often able to take unauthorised action, rectifying line balancing problems, before they ever require supervisory attention.

Machinists in larger production line companies, on the other hand, are more likely to have one main skill and therefore possess very little knowledge about the broader process of garment construction. Moreover, supervision tends to be more structured and formal. A combination of these two factors means that any difficulties or problems that arise tend to remain undetected at an operative level and are instead detected by the supervisor.

Like the production line machinists previously referred to, those working in teams who participate in problem solving and line balancing activities also work in companies of a specific nature. Similar to those machinists who experience a greater degree of responsibility for self organisation in the team, these machinists also all work in companies which have introduced a Kanban model of team working. These machinists all agreed that team working

had enabled them to perform problem solving tasks and that prior to its implementation these activities were the sole responsibility of the supervisor.

A: "You feel more aware of what the problems are..."

B: "Of what's happening don't you, yeh."

A: "You don't sort of come in, turn your machine on, put your head down and turn it off at three o'clock do you. Before you used to be more like a zombie [laugh] than an actual person, didn't you?"

C: "You have more responsibility now for problems....we never did that on line work."

(Group discussion of Kanban team members)

It is hardly surprising that these machinists have only started to participate in problem solving activities following the introduction of team working. They all work in quite large companies, with fifty or more workers (see section 4.4.1 for a discussion of the size of the companies) and as the previous evidence suggests, problem solving activities are often performed at a supervisory level in large production line companies.

Following the implementation of the Kanban model of team working, managers in these companies had recognised the need for a devolution of responsibility to an operative level and consequently the responsibility for resolving production problems and intervening in line balancing issues had been transferred from supervisors to machinists. Moreover, two thirds of the machinists who worked in these Kanban based teams and stated in the group discussion that they had responsibility for problem solving activities worked in just two companies⁵. These are companies 2 and 4, referred to in table 6, section 4.4.2b. As explained briefly in chapter five, these are the only two companies which operate the Kanban model of team working and provide technical and social (including problem solving) training for their machinists. They are also the only two Kanban companies to provide training at a supervisory level. The technical training focuses upon enabling the machinists to perform a wider range of machining tasks. They therefore gain broader knowledge about the garment construction process and are able to recognise production problems as they arise. The social training, on the other hand, informs the machinists how to identify and intervene in the production process, thereby solving production problems and preventing bottlenecks.

⁵

The remaining machinists who believe they have more responsibility for problem solving activities all work in different companies. Explanations for their participation in these activities are unclear.

Meanwhile, the supervisory training means that individual supervisors are encouraged to take a different approach to their role. Instead of policing and directing machinist action, as they had done on the traditional production line, they are encouraged to work with and facilitate the teams. This ensures that supervisors both accept and assist the transfer of responsibility for problem solving tasks to an operative level.

It can therefore be seen that there is one vital difference between the machinists who participate in problem solving activities and work on the production line to those who work in teams. Production line workers intervene in the production process, often to prevent bottlenecks, but these activities are usually carried out without the knowledge of the supervisor and are unauthorised by management. The problem solving and line balancing activities carried out by Kanban team members, on the other hand, are authorised. Both managers and supervisors are instrumental in this devolution of responsibility and in the training which is provided to enable machinists to perform these tasks. Various advocates of team working (Farrands and Totterdill, 1990, and NEDO, 1991b) have highlighted similar patterns of change and suggest that following the implementation of team working, problem solving activities become authorised. They argue that the very fact that these activities are authorised indicates that machinists experience a greater degree of responsibility than on the production line. However, the validity of this argument is questionable; both groups of machinists perform the same problem solving and line balancing activities and therefore it is difficult to measure the extent to which those working in teams have a greater degree of responsibility for these tasks.

For the majority of the team members (approximately 70%), the situation was somewhat different. These machinists stated that they did not participate in line balancing or problem solving activities either when they were working on the traditional production line or now they are working in teams. These machinists were found to be working in two specific types of team working companies. Over half of the team members who did not have responsibility for solving production problems or line balancing activities were working in companies operating Kanban based teams. These machinists all worked in companies which had neglected to provide a comprehensive programme of training; both technical and social training for their team members and training at a supervisory level. The absence of operative training meant that machinists were unable to participate in these problem solving activities, while the absence of supervisory training meant that supervisors had not been informed about the need to change their method of supervision. Consequently they retained their 'production line' method of supervision, instructing team members about the best course of action to take, intervening when any production problems arose and making decisions with

respect to line balancing issues. Two of these machinists working in just one company had received technical training gaining broader knowledge about the garment construction process which enabled them to recognise production problems as they arose. However, a lack of social training meant that they were reluctant to intervene in the production process and an absence of supervisory training meant that supervisors were reluctant to devolve responsibility for these tasks.

The remaining team members who stated that they did not participate in problem solving or line balancing activities were all employed in the six companies which had adopted the TSS method of team working. As previously stated, within this variant of team work, managers and supervisors tend to retain overall authority and control. So despite the fact that all these companies had provided supervisory training, technical training at an operative level, and five of the six companies had also provided social training for their team members, the responsibility for solving production problems including line balancing remained at a supervisory level. As a result of their technical training, machinists have greater knowledge about the process of garment construction and are able to recognise problems as they arise. However, once they have identified a problem, rather than take action themselves, they are instructed to inform a supervisor.

It can therefore be seen that the responsibility for problem solving and line balancing activities often lies at a supervisory level. Moreover, those working in teams have only a slightly higher propensity to perform these tasks than their production line counterparts. Only in a minority of companies has the responsibility for these activities been transferred from a supervisory to an operative level. These are companies which have implemented the Kanban model of team working, whilst simultaneously providing training for their supervisors as well as technical and social training for their team members. It is only machinists in these companies who experience a greater degree of responsibility for these issues following the implementation of team working. Moreover, the extent to which this responsibility differs from that experienced by machinists working in small production line companies is questionable; the only difference being that the responsibility in teams is authorised whilst that on the production line is not.

6.2.5 Responsibility for Quality

It is frequently suggested in the team working literature (for example Tyler, 1994) that one of the principal benefits of team working to the manufacturer is an improvement in the quality of production. It is argued that this is facilitated as team members become more responsible

for the quality of the final product. This therefore indicates a widening of the responsibilities of machinists.

in order to explore this issue, machinists working on both the production line and in teams were asked about the importance they place on quality. However, when asked in the questionnaire about issues relating to quality there appeared to be little difference in the replies of the two groups of machinists. The majority of both agreed that they regularly check the quality of their work (table 3, appendix 5) and that the achievement of a high level of quality is an important requirement during their working day (table 4, appendix 5).

However, when the evidence from the group discussions with machinists working in teams is explored, it becomes clear that the importance of quality increases following the implementation of team working. All the team members, working in both Kanban and TSS based teams, agreed that although quality was important when they worked on the production line, it is even more important in a team working environment. This can be explained by two main factors. Firstly, the standard and quality of work of each team member is dependant upon that of the others. Each machinist has a responsibility to ensure that the level of quality is acceptable to enable their fellow team members to adequately perform the next stage of the production process. On the conventional production line, however, machinists are both unaware and unaffected by the performance of the next person in the production process and therefore, if they can get away with it, are more inclined to produce work of a lower standard. Secondly, if the quality of work is below standard in a team work environment the team responsible can easily be identified and the garment returned to the team as a whole for correction. On the conventional production line, where numerous machinists perform identical operations, it is far more difficult to trace the individual culprit and therefore machinists are more likely to submit work below the required standard.

B: "Well when I was on production line..... you can earn money and you just pile it out, leave it for the next person, it could be totally all wrong."

A: "You don't bother about it, that's it you just don't ask."

B: "Whereas now you've got to make sure your job's right, when you've finished to pass for the next person."

A: "So you're not getting it back or holding that girl up you see."

(Group discussion of team members)

Although team members stressed the importance of quality within the group discussions, they also indicated that speed is still important. Section 6.3.2 reveals that the payment system often changes with the implementation of team working but remains performance related; a group payment system with a bonus replaces the individual piece rate. Although speed is still important to team members, the machinists stated that they are no longer able to prioritise speed over quality. Sub-standard or faulty garments are returned to the team for repair, reducing the output of the team and affecting their ability to reach the production targets required to achieve the bonus. This can be contrasted with the situation in the production line companies, where some machinists are able to prioritise speed over quality in the knowledge that faulty garments are very rarely returned to the individual responsible. This is confirmed in table 4, appendix 5 which reveals a slight disparity between machinists working on the production line and in teams with respect to the importance of speed.

Although the team members unanimously agreed that quality is more important in a team working environment, they questioned the degree to which this is an indication of a greater degree of responsibility. They have always been responsible for quality, the difference being that on the production line they could choose to avoid the responsibility but when working in teams they cannot.

"It's no different than on line.....you got away with it before, if something wasn't quite right you put it in and didn't worry, now it comes back to you."

(Team member)

Machinists working in teams undoubtedly place a greater level of importance on quality than their production line counterparts and this is obviously beneficial at a company level. However, the extent to which machinists benefit from this process is questionable. It is clear that by placing a greater emphasis on quality, team members do not feel that they enjoy a greater level of responsibility. However, this does not mean that team members are unaffected by the search for quality. Speed remains important due to the nature of the payment system and machinists working in teams consequently experience the additional burden of balancing the speed of production with the quality of the final commodity.

6.2.6 Setting Production Targets

Machinist participation in the process of setting production targets suggests a degree of worker responsibility and autonomy. In order to establish the extent to which the machinists working on the traditional production line and in teams participate in setting production targets, both groups were asked in the questionnaire to highlight the personnel responsible

for this activity. Table 10 reveals that slight disparities between replies of those working on the production line and on team working do exist, but not to a significant level. Questionnaire respondents working on the production line were slightly more inclined to agree with the statement 'production targets are set by management' and slightly less inclined to agree with the opposite statement 'we participate in setting production targets'. However, overall the majority of all respondents appear to believe that they have little responsibility for the setting of production targets and that these activities are primarily performed by management.

Table 10. Participation in Setting Production Targets

Statement 1 We participate in setting production targets	Strongly agree with statement 1	Agree with statement 1	Do not agree with statement 1 or 2	Agree with statement 2	Strongly agree with statement 2	Statement 2 Production targets are set by management
Number of Respondents on Production Line (%)	12 (21)	3 (5)	9 (15)	6 (10)	29 (49)	
Number of Respondents on Team Work (%)	6 (15)	6 (15)	10 (26)	1 (3)	16 (41)	

Evidence for this lack of machinist participation in the setting of production targets is even stronger when analysing the results of the group discussions. Machinists working on both the production line and in a team working environment unanimously agreed that responsibility for this activity remains solely in the hands of management. Moreover, all the machinists agreed that management formulate the level of production targets without their consultation and when on occasions they had attempted to contribute to this decision making process, their suggestions were completely ignored.

Question: If you think targets are too high are you able to tell management?

B: "Oh yeh we can but we get no joy."

A: "They just don't listen....I mean I'd like to see something where, not just management telling you, but you're on the same level and you're listened to or you come to some arrangement. I mean OK they're not going to give you what you ask for or vice versa but you know to at least listen and come

to some sort of compromise."

(Group discussion of production line operatives)

This response was typical of machinists working on both the production line and in teams and suggests that machinists have little influence over the level of production targets and that the introduction of team working does not reverse this trend. This is further reaffirmed by one group of machinists, who were asked if they had any more responsibility over production targets following the implementation of team working.

B: "We don't have none of that, none over production targets, none over style changes, no. That's up to planning and what not, we don't have no say so."

C: "You've no say so, you do the work and that's it."

B: "Just like on the line, it's not changed, you had none then and none now."

(Group discussion of team members)

A detailed analysis of the group discussions with team members reveals that the situation is identical for those working in both Kanban and TSS based teams. The inability of team members to participate in this activity is perhaps most clearly exemplified by the situation in three companies, all of which operate the TSS model of team working. These three companies have a system of flashing lights and electronic music to enable the identification of teams requiring assistance. This is complemented by a board, located adjacent each team module, displaying production targets. Each teams' progress towards their production targets is displayed electronically on this board. The target the team needs to meet to achieve its bonus is shown, as is the number of actual garments made, enabling each team member to see at a glance if they are ahead of, on, or behind target. This system is clearly designed to inform machinists of the production targets set rather than involve them in the decision making process. Some managers of other team working companies (both TSS and Kanban) also expressed a desire to introduce such a system in the near future.

6.2.7 Style Change

Machinist participation in the decision making process with respect to style changes is another indicator of worker responsibility. In order to assess the extent to which the experience of machinists working on the production line differs in this respect to those working in teams, both managers and machinists were encouraged to discuss the issue in

detail.

An analysis of the interviews with managers reveals that the personnel responsible for the decision making process during style changes varies substantially between companies operating the traditional production line and those utilising teams. Production line managers unanimously stated that machinists had very little input into the decision making process during style changes. They all agreed that senior personnel (managers or supervisors) are responsible for both initiating style changes and deciding the most effective method of constructing a new style. In some cases the new style specification is set out in writing for machinists to follow and in other cases, often in larger companies, supervisors demonstrate the most effective method.

When team working managers were asked if machinists had more input into the decision making process during style changes than they did on the conventional production line, all except one (manager of company 14, table 6, section 4.4.2b) answered affirmatively, stating that team members now have a certain degree of responsibility for making such decisions, which they did not have previously. These managers suggested that machinists are now expected to make decisions on a range of issues relating to the new style: deciding the number of team members required, which team members should operate certain workstations; and the most effective method of constructing the new style.

However, all except two of these team working managers pointed out that they had not assigned complete responsibility to team members. In these cases, decisions during style changes were not made by the machinists alone but in coordination with the supervisor.

Question: When a new style comes in, what happens?

"Well, what happens is that the managers at the moment balance the line for how they see it going through the line best. The manager then issues that out to the supervisor who looks at it, gets the machines that she needs, implements them into the correct order for it to flow through and then each girl is then shown her own job and then the work just flows off so...once we've actually written down what we want. What we think is the best way, we tell them and then they come back and tell us, "oh no we don't do that, we'd rather do it this way." We'll say "OK have a go, send it through that batch but if there's any problems come back to us."

(Manager of team work company)

The only two managers who agreed that machinists had been assigned complete

responsibility for style changes following the implementation of team working worked in companies 2 and 4, which were mentioned in section 6.2.4. These are the only two companies which operate the Kanban model of team working and provide technical and social training for machinists, as well as training at a supervisory level. As a result of this comprehensive training programme, managers suggested that supervisors are willing to devolve responsibility for these tasks to an operative level, whilst the operatives are able to deal with the added degree of responsibility. The following discussion has been extracted from an interview with a manager in one of these companies and implies a big increase in the teams' responsibilities.

Question: When there is a style change, who decides what happens?

"They [machinists] decide, yes."

Question: Was that the case before?

"No I mean before the supervisors would be actively involved, they'd plan it, they'd work out how many people we need, well that's going to be a full week of work so we need to get ten girls on there. Whereas now it's just, here's the short, here's the machines, if you need any advice on that, that new operation on here, that's what the garment should look like, there's your work, bye, bye, effectively and they seem to prefer it that way. We used to have a lot of supervisors now we don't really have any, they just get on with it."

(Manager of Kanban team work company)

When the machinists were asked about their role in the decision making process during style changes, the replies however, appeared quite different from those of management. Although all (except one) of the team working managers had stated that machinists were now able to exercise more discretion during style changes than they had previously, only eleven of the fifty three machinists who participated in the group discussions agreed. These eleven machinists all worked in the two Kanban based team working companies, 2 and 4, previously mentioned. However, despite their manager's claims that they had been assigned complete responsibility over style changes, these machinists disagreed, stating that the added responsibility that they had been awarded was limited. They suggested that management were only really paying 'lip service' to the idea of worker empowerment and although they were consulted, all too often their decisions were ignored and only very rarely taken on board. Typical statements from these machinists were,

C: "They decide who does what when we have a change of style and you get on with it."

D: "But management do listen a bit. We have some say when new styles come in because we can decide which girls go on which jobs and things like that."

A: "Yeh, but they don't always listen."

C: "Well, yes, but not as much as I'd like. I think we should have more say."

(Group discussion of Kanban team members)

The rest of the team members (79%), on the other hand, stated that they had no more responsibility over these issues than when working on the conventional production line. These machinists appeared to work in two different types of companies. One group worked in TSS based teams and although they had received both social and technical training enabling them (in theory) to participate in the decision making process during style changes, the system of team working ensured that these activities remained at a supervisory level (see section 6.4.2). The second group of machinists worked in Kanban based teams and had been informed that they would participate in the decision making process during style changes. However, unlike those working in companies 2 and 4, neither machinists nor supervisors received any training. As a result machinists did not have the skills to perform the tasks and supervisors were reluctant to devolve responsibility for the tasks to them.

Despite management claims, the majority of the team members were therefore no more likely to make decisions in relation to style changes than when working on the production line. In one company where management pointed out that machinists now have more responsibility over style change issues, the machinists strongly disagreed,

B: "No we don't have no responsibility over style changes, none at all, no, who told you that?."

A: "No, we don't decide.....I wish we did, it's up to management."

(Group discussion of team members)

The evidence provided in this section therefore reveals that although management believe that they have devolved more responsibility to machinists with respect to style changes following the introduction of team working, machinists tend to disagree, believing that they have no more discretion than when working on the traditional production line. Some machinists have experienced a greater degree of responsibility in this context. These machinists work in just two companies, both of which have implemented the Kanban model of team working, whilst simultaneously providing training for their supervisors as well as

technical and social training for their team members. However, the responsibility that these machinists experience is far more limited than their managers suggest.

6.2.8 Relations with Managers and Supervisors

The final criteria to be examined in this section of the chapter is the nature of machinist relations with both managers and supervisors. This is another indicator of the level of machinist responsibility; the more equal the relationship between machinists and managers/supervisors, the greater the degree of machinist responsibility and empowerment. Tables 5 and 6, appendix 5, reveal that many of the machinists believe that they have a good relationship with their supervisors, agreeing that supervisors 'respect them' and 'let them get on with their jobs', with only a minority believing that supervisors 'think they know best' and 'interfere in their work'. This pattern appears to be the same for all machinists, suggesting that the introduction of team working has little (if any) effect on machinist/supervisor relations. Evidence from the group discussions supports the questionnaire results, with the majority of both production line and team working machinists (62% and 64% respectively) agreeing that supervisors only interfere when necessary.

However, when asked about issues of power and control, the machinists attitude changed slightly. Although they were keen to point out that they generally have a good relationship with their supervisors, nearly all production line machinists (88%) suggested that the relationship is an unequal one; supervisors are very much in control. In the words of one production line machinist, **"they let you know who the boss is"**.

The majority (77%) of machinists working in teams generally agreed, suggesting that supervisors dictate proceedings. They argued that machinist actions were controlled by the supervisor when they worked on the production line and that the introduction of team working had not altered this. The remaining 23% (twelve machinists) did however indicate that the role of the supervisor had changed following the introduction of team working, suggesting that supervisors were less likely to act as 'policers' and more likely to act as 'enablers' or 'facilitators'. All but one of these machinists worked in the two companies, 2 and 4, which operate Kanban models of team working and have provided both social and technical training for team members, as well as training at a supervisory level. As previously pointed out, unlike the TSS model of team working, the Kanban system enables a transfer of responsibility to team members, however this is only realised when supervisors are trained to adopt a new role of facilitator, allowing machinists responsibility for tasks that they themselves previously undertook and when machinists are trained to deal with this additional

responsibility. The extent to which the machinist/supervisor relationship has changed in these two companies is exemplified in the following group discussion,

D: "Basically you decide between you what you do, she's [supervisor] just there to help."

B: "Before you worked on the line and you shared a supervisor."

D: "She normally telled you, do it like this, or you do it this way, something similar to that, now you decide between yourselves which way you do it and you tell her and she say's whether you can do it that way or not or she might say, well it's better to do it this way, try it this way. We do have a bit more say."

(Group discussion of Kanban team members)

Machinists were also asked in the questionnaire about their relationship with managers. Tables 7 and 8, appendix 5 show that the majority of both production line and team working machinists believe management to be 'approachable', while only 39% of both groups agree that 'management take notice of them'. Hence, indicating that although machinists believe they can approach management, only a minority of them feel that their comments are taken seriously. Moreover, the implementation of team working does not appear to alter the situation.

Evidence from the group discussions further highlights the unequal relationship between managers and machinists. The production line and team working machinists all reflected on their inability to influence managerial decisions and the latter unanimously agreed that the introduction of team working had failed to alter this situation. This was even the case in the two companies, 2 and 4, which had introduced the Kanban model of team working alongside a comprehensive operative and supervisory training programme. Although the role of the supervisors has clearly changed in these two companies, the eleven machinists who were interviewed agreed that the managers remained the same; they were clearly in control.

A: "We have more say when it comes to supervisors, the difference between us and them it's not as big. But managers, they're the same as ever. Not really changed have they?"

B: "They pretend to seem interested don't they, but when it comes down to it, they don't listen, supervisors like, they do listen now and take notice, like you'll say, you can't do it this way, like this, it's better like this and they take note....."

A: Yeh, when you speak to him [manager] it's different...."

B: "But manager, he say's oh just get on with it, that's what you're paid for, we've given you more powers, you're empowered now, you have more responsibility, don't try and take advantage, I'm still the boss you know. And that's what it's like."

All: "Yeh."

(Group discussion of Kanban team members)

This attitude of managers to their workforce is hardly surprising, the culture of British managers has traditionally been based around direct control, with managers dictating to the workforce and allocating them little discretion and autonomy. This has been particularly evident in the clothing industry, where Taylorist principles of work organisation have dominated. Thus, even in the two companies, 2 and 4, which have introduced Kanban based teams, alongside a supervisory and operative training programme, managers have been reluctant to substantially change their style of governance and devolve power. Farrands and Totterdill (1990) and Tyler (1994) quite rightly argue that training can help managers adapt to a new style of governance involving a devolution of power, however, none of the sample of companies have introduced such a programme of training (explanations for this are provided in section 6.4.2d).

The evidence provided in this section therefore reveals that machinists generally agree that they have good relations with both managers and supervisory staff. However, it is clear that power and authority within the companies lie at a supervisory and managerial level. This appears to be the same in companies operating the production line and utilising team working. Indeed, devolution of responsibility is only evident in companies which have introduced a Kanban based model of team working together with a comprehensive operative and supervisory training programme. Only machinists working in these companies experience a greater degree of responsibility and autonomy following the introduction of team working.

However, as we have seen, even in these companies the devolution of responsibility is limited. Although supervisors are involved in a devolution of responsibility, an absence of managerial training means that devolution does not extend to this level. Even though machinists working in these companies stated that they had more responsibility than previously, they still questioned the degree of their power and autonomy.

B: "Not power."

F: "It's not power [laugh]. You can think for yourself at last, you know what I mean.....You've not got supervisors thinking for you. You're using your own brains at last."

C: "Yeh, You've not got to ask everything, you know you use your own head like."

Question: So where does the power stop?

F: "With the manager. I mean the production manager just said to the team this morning, "you'll have to do all those again, you're not getting any more till you've done them again." The team said, "we won't earn anything, we said we'll put it right in our own time." The factory manager said, "well it's too late, you'll have to do them now." So much for empowerment."

(Group discussion of Kanban team members)

The evidence provided up until this point reveals that the way in which the quantity and status of tasks performed by machinists changes following the introduction of team working is a complicated issue which is determined by the type and nature of the system of team working implemented (as Buchanan, 1994 and Tomaney, 1990 point out), together with the degree of accompanying cultural change.

It has been discovered that three broad types of team working have been introduced in the companies and that each has different implications with respect to the quantity and status of tasks performed. At one end of the spectrum, are companies which have implemented a TSS model of team working. These companies account for 37% of those studied. The nature of the system means that team members are required to move frequently between prescribed workstations, performing a larger quantity of sewing operations than on the production line, each of which has a lower degree of skill content (primarily due to technological change). Moreover, although a comprehensive programme of training (at both operative and supervisory level) is a key characteristic of the TSS model, certain elements of training are absent (an issue which is expanded upon in section 6.4.2). This together with the fact that management style often remains based on direct control means that machinists working in TSS teams rarely perform higher status tasks involving a greater degree of skill content and are not awarded a greater degree of responsibility.

Companies operating a model of team working based on the Kanban principle, but which have declined to provide a comprehensive programme of supervisory and operative training (with both social and technical components), can be located at a central point on the

spectrum. These companies account for 50% of the sample. One of these companies has provided technical training at an operative level, but none have provided all three strands of the training programme. Again machinists working in these companies perform a larger quantity of sewing operations than on the production line, however the relative absence of technological change which reduces the skill content of individual tasks means that deskilling is less prevalent than in TSS teams. The Kanban model of team working is more conducive to a devolution of responsibility with team members primarily gaining responsibility for the general organisation of the team.

Finally, at the other end of the spectrum are just two companies (13%) which have implemented a Kanban model of team working alongside a comprehensive training programme. Similar to the Kanban companies previously mentioned, machinists working in these companies are expected to perform a wider range of similar status tasks, but again the relative absence of technological change which reduces the skill content of individual tasks means that deskilling is less prevalent than in TSS teams. Team members in these companies experience a far greater devolution of responsibility than their counterparts in either of the other two models of team working. Like those employed in the other Kanban companies, machinists are responsible for the organisation of the team, but training at both a supervisory and operative level (encompassing social and technical elements) means that the devolution of responsibility extends further, to encompass line balancing issues, solving production problems and the decision making process during style changes. However, even in these companies the devolution of responsibility is somewhat limited and the degree to which it differs from some production line companies is questionable.

6.3 IMPLICATIONS FOR THE WORKFORCE

Having established the way in which the introduction of team working changes the quantity and status of the tasks of the workforce and how different systems of team working play a part in this process, this section of the chapter attempts to examine the resulting implications for machinists working in teams. Again a number of criteria are explored in order to assess the extent to which the working experiences of machinists have changed following the implementation of team working. These criteria encompass: interest and enjoyment; hard work and peer pressure; promotion opportunities and career progression.

6.3.1 Interest and Enjoyment

When analysing the results of the questionnaires it is evident that the majority of machinists working in both production line and team working companies view work as interesting. This

is confirmed in table 11 which reveals that 56% and 59% respectively agree with the statement 'work is interesting', over half of these strongly agreeing. At first sight this suggests that team work does not render work any more interesting than the conventional production line. However, when examining the number of machinists who believe that work is boring, some discrepancies between machinists working on the production line and in teams emerge, with the former being slightly more inclined to believe that work is boring. This is further reaffirmed by the evidence of the group discussions, which likewise suggest that machinists working on the production line are more inclined to believe that work is boring than those working in teams.

Table 11. How Interesting is Work?

Statement 1 Work is interesting	Strongly agree with statement 1	Agree with statement 1	Do not agree with statement 1 or 2	Agree with statement 2	Strongly agree with statement 2	Statement 2 Work is boring
Number of Respondents on Production Line (%)	19 (32)	14 (24)	14 (24)	6 (10)	6 (10)	
Number of Respondents on Team Work (%)	13 (33)	10 (26)	12 (31)	4 (10)	-	

The main explanation for this tendency is that production line machinists are more likely to perform one task during each working day, whereas their team working counterparts tend to perform a wider range of tasks, as explained in section 6.2.1, thus enjoying more variety at work⁶.

D: "You're just a robot. It's continual same thing, over and over again. Boring, it's boring. I wouldn't be bored if I was doing garments from start to finish but I think when you're on same job. I've seen you dropping to sleep, so don't say it's not boring."

All: [Laugh]

⁶

This kind of job rotation also has health implications and is often associated with discussions about reductions in Repetitive Strain Injury (RSI). Whilst this is an important factor in the debate about team working and the quality of working lives, a detailed discussion is beyond the scope of this thesis.

D: "I mean when you're doing forty-five dozen a day and putting sleeves in, one job all while, it does get boring doesn't it."

(Group discussion of production line operatives)

However, there are difficulties in comparing the replies of the two groups of machinists. The extent to which machinists feel work is interesting is subjective and depends on their work experience. Those working on the production line have never experienced team working, whilst those working in teams have experienced both systems of production and so their comments on the level of interest are based on different experiences of work.

One way to overcome these problems of comparison is to see if team members feel that team working is more or less interesting than the production line. All except four team members⁷ argued that following the implementation of team working, work has become more interesting. There are two main explanations for this. The first and unanimously agreed explanation amongst machinists working in both TSS and Kanban based teams relates to the point just mentioned, i.e. that team working entails more variety at work than the production line, with machinists performing a range of sewing operations each working day.

A: "I'd say it was more interesting."

B: "I think it's more interesting."

A: "Because you're doing more than one job."

(Group discussion of Kanban team members)

Another group of machinists working in a separate company, operating a TSS model of team working agreed,

C: "JIT's more interesting, because you don't stop on one job all day."

B: "JIT's more interesting, yeh."

(Group discussion of TSS team members)

The second explanation for the greater degree of interest involved in the system of team working was only provided by machinists working in Kanban based teams and relates to levels of responsibility. All Kanban team members (except the four previously mentioned)

⁷

All four machinists work in company 14, table 6, section 4.4.2b

agreed that alongside the performance of a greater variety of machining tasks, responsibility for the organisation of the team, in terms of its discipline and performance, means that work is more interesting than on the conventional production line. The eleven machinists, who work in the two Kanban based companies, 2 and 4, which had simultaneously provided a comprehensive programme of operative and supervisory training (section 6.2) additionally pointed to their participation in the decision making process during style changes, line balancing and problem solving activities as a further explanation of the greater degree of interest involved in team working.

The variety at work involved in team working clearly has wider implications for the workforce, extending beyond the issue of interest, to encompass enjoyment. As a direct result of the performance of a wider range of sewing tasks and in the case of the machinists working in Kanban based teams, the greater degree of responsibility, machinists not only find work more interesting but also more enjoyable. Table 12 reveals that the overwhelming majority of machinists working in teams (92%) agreed with the statement 'I enjoy variety at work'. The remaining 8% all work in the company previously mentioned (company 14, section 4.4.2b).

Table 12. Variety at Work

Statement 1	Strongly agree with statement 1	Agree with statement 1	Do not agree with statement 1 or 2	Agree with statement 2	Strongly agree with statement 2	Statement 2
I enjoy variety at work	1	1	1 or 2	2	2	I do not enjoy variety at work
Number of Respondents on Team Work (%)	23 (59)	13 (33)	3 (8)	-	-	

This evidence therefore reveals that some benefits are derived from the requirement to perform a wider range of machining tasks, with the working lives of team members becoming both more interesting and enjoyable following the implementation of team working. Indeed, the majority of machinists working in teams believe that being multi-skilled is beneficial to them (table 9, appendix 5). Moreover, from the group discussions it is clear that team members all attribute the greater level of enjoyment and satisfaction to the multi-skilling involved in the new system of production, with those working in Kanban based teams additionally pointing to greater levels of responsibility. As a direct result of this greater degree of interest, the majority (80%) of those interviewed agreed that, in general, they enjoy team

working (table 10, appendix 5).

6.3.2 Hard Work and Peer Pressure

The degree to which machinists work hard is obviously difficult to quantify, but this was a reoccurring theme raised by machinists working in both production line and team working companies. The machinists had strong feelings about this issue and were keen to constantly point out the amount of hard work involved in their job. There are, however, some disparities between the two systems of production in this context, with the implementation of team working appearing to exacerbate the amount of work required. This is confirmed by the results of the questionnaire, with 72% of the respondents working in teams stating that they agree with the statement 'I work harder in a team than on a production line', the majority strongly agreeing (table 13).

Table 13. Working Hard in Teams

Statement 1 I work harder in a team than on a production line	Strongly agree with statement 1	Agree with statement 1	Do not agree with statement 1 or 2	Agree with statement 2	Strongly agree with statement 2	Statement 2 I do not work harder in a team than on a production line
Number of Respondents on Team Work (%)	23 (59)	5 (13)	9 (23)	-	2 (5)	

Further evidence from the group discussions convincingly supports this, with all (except the four machinists working in company 14) stating that the work required in teams is harder than on the production line. Explanations for this are, two fold. Firstly, all team members (with the exception of the four mentioned above) are expected to perform a wider range of sewing operations than when working on the production line, consequently experiencing a degree of labour intensification. Despite the fact that the number, frequency of movements and skill content of individual operations vary enormously between TSS and Kanban based teams (see section 6.2.1), this pattern appears to be the same for those working in both systems of team work.

As explained in section 6.2.1, the TSS model of team working involves the introduction of new technology which deskills. Although this means that each sewing operation involves a lower degree of skill content than previously, those working in TSS teams find it harder work

as they have to frequently move between numerous operations.

C: "I think one of the issues when they put JIT in was that you have to work harder now, you have to do more jobs now. It's harder work now."

D: "Well there's that isn't there."

A: "Yeh, it's a lot harder now, int it? A lot more jobs to do a lot more work, it's go, go, go all the time, all day long, they don't half push us.."

(Group discussion of TSS team members)

Kanban team members are also expected to change operations and therefore find team working harder work, but in a different way to their TSS counterparts. Kanban team members are not under as much pressure to move regularly and frequently between workstations, as those working in TSS teams are. However, they are required to move and the relative absence of new technology which deskills individual operations means that the skill content of the tasks required at each workstation remains unchanged.

Question: Which is harder work, team work or line work?

B: "Team work is harder, yeh."

A: "Ooh yeh I mean it is hard work, you've got to learn a lot of jobs instead of just one or maybe two."

B: "People think we just sit down and we don't work and we do, we have to work a lot harder than on line.....moving between jobs."

(Group discussion of Kanban team members)

The second explanation for team working requiring harder work than the conventional production line was only expressed by machinists working in Kanban teams and relates to levels of discretion and responsibility. As previously outlined, machinists working in Kanban teams experience a greater degree of responsibility, particularly for the organisation of the team and as the following machinist points out, this responsibility exacerbates the amount of work required in comparison to the production line.

"We have to work a lot harder now than on the line. Changing jobs, doing new operations, organising the team. It's harder work now, a lot harder."

(Kanban team member)

The eleven machinists working in the two companies, 2 and 4, which have implemented a

system of team working based on the Kanban prototype, alongside a comprehensive programme of operative and supervisory training have additional duties. They are not only required to work harder performing a range of sewing operations and being responsible for the organisation of the team, but they have the added work load of participating in problem solving and line balancing activities, as well as making decisions during style changes.

It was explained in chapter three that payment systems play an important role in this debate. If machinists receive higher wages for performing more tasks of either a similar or higher status, then although they are having to work harder, at least they are being rewarded financially for doing so. However, from an examination of the questionnaire results, it becomes clear that not all of the machinists working in teams are being rewarded for their harder work. Although 28% stated that they agreed with the statement 'I am better paid in a team' the majority (72%) stated that they were either receiving the same or lower wages than when working on the traditional production line (table 11, appendix 5).

Evidence to this effect is further reaffirmed when analysing the group discussions. A minority of the machinists stated that they received higher wages than when working on the traditional production line, whilst 77% stated that they were no better off financially working in teams than they were previously. This reveals that a substantial proportion of the machinists are having to work harder, performing a wider range of tasks but are not financially rewarded for doing so, hence experiencing labour intensification.

The degree to which machinists are adversely affected by this varies according to the company within which they work and the nature of the model of team working. Machinists working in companies operating a TSS model of team working are expected to perform a wider range of similar status tasks, without financial remuneration.

A: "That's what we said when they changed it to pressing on the end of the line as well we said, "well we'll be getting a pay rise on top of what we normally earn because we're going to be able to press as well as machine" the same with the pressers, you know, but we didn't. So we do more work for the same pay."

All: "Yeh."

B: "We've got to press, do our own job and other jobs and no more dosh."

(Group discussion of TSS team members)

Kanban team members suffer even more, they are not only expected to perform a wider

range of similar status tasks, but also to carry out higher status tasks, involving responsibility for the organisation, discipline and performance of the team, all for similar levels of pay.

B: "I think we should get paid more."

C: "More, as I say on conventional you did one or two jobs and that was it, now here you've got to learn about eight and you've got more responsibility haven't you than on the line and so, I mean I get paid less, a lot less."

(Group discussion of Kanban team members)

Those working in the two companies, 2 and 4, which have implemented a Kanban model of team working alongside a comprehensive operative and supervisory training programme experience even greater financial drawbacks, having the additional responsibility of decision making during style changes, line balancing and problem solving activities.

The *level* of payment is not, however, the only factor implicated here, with the *type* of payment system also being important, determining the degree to which machinists believe they have to work harder when team work is introduced. Traditionally, piecework has been the dominant payment system in the apparel industry, whereby workers are paid by results. This type of payment, however, stresses the importance of speed rather than quality and is widely recognised as not being compatible with team working. Therefore as the new system of production is implemented, team working advocates (Farrands and Totterdill, 1990, NEDO, 1991a, 1991b, Tyler, 1994) suggest that it should be accompanied by a new payment system which is no longer based on individual piecework but on a flat wage. They argue that this relieves machinists of the intensity of work associated with piecework and allows them to prioritise quality rather than speed.

From the evidence of the interviews with both management and machinists it can in fact be seen that the implementation of team working has often been accompanied by a change in the payment system. Although individual piecework was the dominant payment system in all except one of the conventional production line companies, the majority of the companies which have implemented team work have simultaneously discarded this payment system. A detailed analysis of the payment systems in operation in companies which have adopted team working can be seen in table 12, appendix 5. Although the payment systems have changed substantially, they have not been altered to the extent which authors such as Farrands and Totterdill (1990) etc. advocate. The payment systems remain performance related, most of which are based on a flat wage, with a group bonus for attaining certain levels of performance.

The team working managers all agreed that they were reluctant to adopt a payment system which does not have some element of performance related pay. Piecework has traditionally been the principal method of payment in the clothing industry, as well as in other manufacturing sectors and managers are wary of change. They believe that the only way that the workforce can be motivated is by linking wages to performance and so although they are prepared to adopt a flat wage when implementing team working, they incorporate a bonus system to ensure that the workforce have an incentive to work hard, thereby maintaining a high level of productive efficiency.

Just over half the team working managers agreed that performance related pay was particularly important with a predominantly female workforce, therefore providing similar evidence to that outlined in section 3.2.2c. This view was held by both male and female managers, as well as managers of TSS and Kanban based systems of team working. As explained further in section 6.4.1, these managers believe that women and men attend work for different reasons. While men attend work in order to 'earn a living', women attend work for a variety of other reasons. They therefore believe that women are less motivated than their male counterparts and require an additional incentive in terms of performance related pay to encourage a high level of production.

"Men are the breadwinners, women don't work for the money....you always need to motivate your workforce, be it your males or your females. Your ladies need that extra incentive to get their heads down and go, go, go all day. It's important to have a bonus to keep them going....I think with your males you might get away with a flat wage, they're already motivated."

(Manager of team work company)

Many managers recognise that, with rising male unemployment rates, women are now frequently becoming the principal earner in the household, yet they continue to hold these stereotypical perceptions of women and work (see section 6.4.1 for a more detailed discussion).

This retention of performance related pay under team working inevitably exacerbates the extent to which machinists have to work harder in comparison to the traditional production line, causing them to experience labour intensification, sometimes in excessive degrees. As machinists are expected to perform a wider range of tasks than they did previously, their speed on each additional operation inevitably falls, at least in the initial stages. This is particularly true in Kanban based teams, where machinists are expected to move far less frequently than their TSS counterparts. The less frequent they move workstations, the less

familiar they are with other operations and therefore the slower they work. As this occurs, individual machinists and hence the team as a whole may fail to reach their production targets and therefore obtain a bonus and so each team member is in danger of earning less. In order to reverse this downward effect on wage levels, machinists often find themselves having to work harder to increase their speed on second and third operations in an attempt to obtain their bonus and avoid a loss of earnings during operation changes.

This situation can be avoided if production targets are lowered or if machinists are compensated financially in the initial stages of performing an additional operation until they build their speed up again. However, neither of these policies were found to be in operation in any of the companies and as a result team members found themselves having to work harder to increase their speed and protect their earnings.

C: "Yeh, like we're always doing different jobs, different styles now."

B: "So like our money's dropping and dropping all time. It does go up butI mean it's all right, but us money's dropping. If us money wasn't dropping we'd be alright."

D: "Yeh, we feel we'd be better off on a set wage don't we?"

B: "Yeh, none of this bonus. We just can't earn it."

(Group discussion of Kanban team members)

These sentiments were mirrored in another team working company,

D: "They don't like giving you time work. You know you get paid time work for learning skills and if you don't go on a job very often do you know what I mean, it's hard. They'll just expect you to earn your money the first day."

B: "They just expect you to go on a new job and earn your money and it's not like that. If somebody's off and I go in for Jackie and she can be off on holiday for a fortnight. Well within that fortnight I will get up to earning me money on that job again. Now it might be another year before Jackie's's off and then they'll expect me to go back onto that job and still earn that money."

All: "Yeh."

(Group discussion of Kanban team members)

The fact that the majority of the payment systems implemented in companies operating team working are based on a group incentive scheme generates further added pressure and

anxiety amongst team members. Each team member is paid a common wage which is related to the overall group performance in terms of output. Individual wages are therefore dependant on the performance level of team colleagues, causing pressure amongst team members to attain a certain level of output in order to achieve the bonus, not only for themselves but for their colleagues too. As explained in section 3.2.2a, this causes particular problems when individual operatives are absent from work or when certain operatives are slower than others. In these cases the overall performance level of the team maybe reduced, sometimes causing them to forfeit the bonus, without which many machinists argued they are unable to earn a 'decent' wage. This is particularly the case if the bonus is paid for the achievement of daily rather than weekly targets, with one absentee on one day reducing the possibility of attaining the weekly bonus.

A: "But you can't always earn your bonus."

C: "The bonus is paid at the end of the week."

A: "It's not that bad, but if you lose it one day and you can't make it up, you lose the lot."

B: "If you can't make it, you lose it for the week."

A: "So if you like get a 75% on a Monday and somebody's off for the rest of the week and you see the other three girls are trying to make it up for that Monday while she's off, you lose that Monday's."

(Group discussion of team members)

As a direct result of this system of payment individual machinists feel pressurised to reach production targets for fear of letting their colleagues down. This is reaffirmed in tables 13 and 14, appendix 5 which show that machinists working in teams are slightly more likely to feel pressurised by production targets and feel a need to strive to reach these targets than their production line counterparts.

This peer pressure tends to cause considerable problems when machinists are ill, they feel guilty for 'letting the side down' and are reluctant to take time off work. Such situations can quite easily be avoided by the alteration of production targets to reflect the level of absenteeism. However, such allowances were very rarely made in any of the companies visited. Thus, almost all of the team members who were interviewed (92%) stated that they were reluctant to have any time off work,

A: "I think there's been odd days where perhaps if I'd have been on

conventional line I might have thought "oh sod it", you know I can't be bothered."

D: "It's not just working for yourself is it, you've got three other people to take into consideration. It makes you feel real bad, guilty, so whereas before you might stay at home, now you come in."

(Group discussion of team members)

The fact that machinists working in teams feel guilty when off ill is reaffirmed by the results of the questionnaires, with slightly more operatives working in teams stating that they agree with the statement 'when I am off sick I feel guilty' and slightly less agreeing with the statement 'it does not matter to me if an operative (team member) is off sick' in comparison to those working on the traditional production line (see tables 15 and 16, appendix 5).

It can therefore be seen that the presence of group incentive payment schemes in a team work environment, often leads to excessive peer pressure. In many companies this pressure frequently incites ill feeling within the team, with machinists feeling resentment towards those who are absent frequently, or those who are slower than themselves. This ill feeling was particularly present amongst the fast performers, the so called 'high flyers', who in attempts to obtain the team bonus have to work harder to make up for the lower production of their team colleagues.

D: "I would say it's money wise because as far as our team's concerned, I don't know about the others, we haven't got enough qualifications on the line to make the team work and you've got certain people on the line who don't want to work, but want the money at the end of the day and expect people who do work quick to cover the work for them. I mean we're having a problem at the moment, we're about eighty odd garments down, which are behind one girl only and she should be capable of doing it. So we can't reach the bonus, so our wages have just dropped about fifty quid."

All: "Yes, yeh."

D: "It causes problems."

A: "When you go to management, the management don't do owt. Well there's nothing you can do. Because they time them to see if they are up to standard on what they're supposed to be doing and they're fast when they're timed, so they are up to standard but when they go, they slow back down again. So the management can't do anything about it, so really it's left to us to sort it out."

D: "I don't see why at the end of the day you should have to go over there and get it all up, and that girl when she's timed is a hundred and fifteen

percent. So if you're a hundred and fifteen percent there should be no work behind you."

Question: Do you get paid more or less on team work?

C: "Well it's generally same really, it just means that if somebody doesn't work as hard you get less pay, and it's not always your own fault. Whereas if you're on your own it's up to you what you do int it?"

(Group discussion of team members)

Although fast performers are particularly adversely affected, there are some beneficiaries of the system. As stated previously, a minority (less than one third) of the team members suggested that they receive higher wages in teams than on the conventional production line. These, in general, tend to be the slowest machinists, earning relatively low wages on the production line but receiving higher wages in teams, with quicker team colleagues increasing average productivity.

6.3.3 Promotion Opportunities and Career Progression

Advocates of team working (Farrands and Totterdill, 1990) argue that its introduction is capable of encouraging career progression within the industry. They suggest that machinists working in teams should be able to perform a wider range of similar and higher status tasks, enjoying more responsibility and autonomy. This, they argue, provides team members with more confidence in their own ability and encourages them to search for promotion opportunities within the company. For similar reasons, these team working advocates argue that management have more confidence in their workforce and become more willing to facilitate promotion than previously. Totterdill (1996) argues that many companies recruit newly qualified graduates into managerial positions and that as machinists gain more skills and confidence in a team working environment they may instead be encouraged to recruit from the factory floor. However, he is keen to point out that this process can only occur if it is accompanied by a complementary programme of vocational education and training.

The evidence from the questionnaire results, at first sight, appears to support the arguments put forward by these team working advocates. When asked if promotion opportunities are available, those working in teams were more inclined to agree that there will be promotion opportunities at the company and less inclined to believe that they would have to leave the company to obtain promotion (table 14).

Table 14. Promotion Opportunities

Statement 1 There will be opportunities for promotion here	Strongly agree with statement 1	Agree with statement 1	Do not agree with statement 1 or 2	Agree with statement 2	Strongly agree with statement 2	Statement 2 I would have to leave to get promotion
Number of Respondents on Production Line (%)	5 (9)	4 (7)	19 (32)	6 (10)	25 (42)	
Number of Respondents on Team Work (%)	7 (18)	5 (13)	19 (49)	3 (7)	5 (13)	

This disparity may, however, be linked to the size of the companies rather than the system of production in operation. Companies operating team working are, in general, larger (see section 4.4.1) and therefore tend to have more promotion opportunities than the smaller companies utilising the conventional production line. Indeed, managers in both production line and team working companies unanimously agreed that promotion opportunities are far greater in larger companies. This is exemplified by the following quote from a manager of a small production line company.

"We have two levels, there are a number of people on the bottom - if you like, and we have one person who's paid more money who they go to if they've got problems. So that would be your supervisor of course. But the only way you would get promoted from the bottom upwards is if she left. That's purely because we're a small company. And we don't really treat her as the boss or supervisor, we don't really look at her like that."

(Manager of production line company)

This situation is further confirmed by the fact that all the production line and team working machinists who agreed that there will be promotion opportunities available work in larger companies employing over fifty workers.

Furthermore, when analysing both the questionnaire results and the group discussions in detail, the impact of team working, in terms of promotion opportunities, appeared limited. Very few of the machinists working on both the production line and in teams stated that they wanted promotion, with just 12% and 16% respectively stating that they agree with the statement 'I want promotion' (table 17, appendix 5). The majority of both groups of

machinists stated that promotion does not interest them, most of whom appeared to doubt their own ability to handle the work involved in such a promotion, despite the fact that they claim that they feel confident, in general, about their work (see table 18, appendix 5). Thus, when team members were asked if they have any career aspirations, the following was a typical reply,

B: "I wouldn't like to be a supervisor, not here anyway. I couldn't tell me friends what to do."

C: "I couldn't tell anyone what to do, I'd end up with em all running wild."

D: "Yeh, I know what you mean, it's not easy all that responsibility, you've got to be a certain type."

(Group discussion of team members)

The fact that these predominantly female machinists, in general, do not feel capable of handling and therefore do not want promotion can be linked to the social construction of skill and existing gender divisions within society, which ensure that women are viewed, by both themselves and others, as peripheral workers who are not serious about their careers. This issue is addressed in section 6.4.1 and is widely documented elsewhere (Pollert, 1981, Westwood, 1984) and therefore a detailed discussion need not detain us here.

The majority of the managers perpetuated these claims of machinists, agreeing that many of them would be reluctant to accept promotion and in any case pointed out that promotion opportunities in the industry are very rare.

"The only channel we've got is to be supervisor.....that is the only path to a supervisor, from a supervisor we have garment technologist, very limited they might get into production managers job..... so there is a channel really for the exceptional ones, but it is a slow process.

(Manager of team work company)

This was a typical response of most managers working in companies operating both the traditional production line and team working, revealing that promotion opportunities are few and far between in the industry and that team working in general fails to reverse this trend. This is further reaffirmed by the evidence of discussions with team working managers, with the majority stating that the introduction of team working has not improved machinist chances of promotion by any substantial amount.

Question: Does team working enhance machinists promotion prospects?

"There's very little promotion possibilities, obviously they can go to be a training officer or possibly some form of supervisory role, so there's very little opportunities for anybody, line or teams."

(Manager of team work company)

When asked the same question another manager typically replied,

"No, it doesn't make any difference. It's about the same as it was before. No team working's not really had an effect on promotion, no."

(Manager of team work company)

As Totterdill (1996) points out, this situation may be reversed by the provision of a complementary programme of vocational education and training alongside the introduction of team working. This may provide machinists with the confidence to seek promotion regardless of existing stereotypical perceptions of gender and work, and will ensure that machinists have adequate skills for managerial positions. Thus, when the limited number of managerial positions do become available, they may be filled by machinists from the factory floor rather than external graduate candidates. However, there was no evidence, in any of the companies, of the presence of a complementary programme of vocational education and training to facilitate such career progression. Moreover, it could be argued that the provision of such vocational education and training would increase the chances of promotion for machinists irrespective of the system of production.

Despite the fact that team working leads to the development of a multi-skilled workforce, who perform a wider range of sewing operations, team members do not have greater prospects of career progression than their production line counterparts. A combination of a lack of promotion opportunities available in the industry and societal pressures ensuring that women are viewed, by both themselves and others, as incapable of handling and therefore not wanting promotion, means that this even extends to team members working in Kanban based teams, carrying out tasks involving more responsibility and discretion.

This section has explored the implications of the introduction of team working for machinists working in teams and the way in which different models of team working play a part in this process. From the discussion it is clear that machinists working in each of the different systems of team working experience both benefits and drawbacks. Team members tend to find work more interesting and enjoyable than the conventional production line, performing a wider variety of tasks. However, these benefits must be weighed against the drawbacks

of having to work harder without either greater financial remuneration or improved chances of promotion.

It is clear that the extent to which machinists are affected by these benefits and drawbacks varies according to the system of team working. Machinists working in TSS based teams enjoy a greater variety of work, carrying out a wider range of sewing operations. Those working in Kanban teams also enjoy the additional variety and responsibility involved in organising the team and (in the case of those working in companies which have adopted a comprehensive training programme) participating in the decision making process during style changes, as well as problem solving and line balancing activities.

Although this requirement to perform a greater variety of duties means that team members find work more interesting and enjoyable, it also means that they have to work harder. However, as we have seen they are not financially rewarded for this harder work, with only the slower machinists, who received lower than average wages on the production line, experiencing an increase in earnings. Some team members are more adversely affected by the absence of financial remuneration than others; the greater the variety of tasks team members are expected to perform, the greater the concern about the level of wages. On this basis, team members who work in the two Kanban companies, 2 and 4, which have also provided comprehensive training appear to suffer the most, followed by their Kanban counterparts working in companies which have neglected to provide such training and finally those working in TSS based teams. The payment system utilised in team working companies often exacerbates this situation even further, leading to excessive peer pressure in companies operating all three models of team working, with individual wages being determined by both the attendance and performance of fellow team members.

Added to these short term drawbacks are the longer term concerns about promotion and career progression. Despite the fact that team members work harder, performing a wider range of similar and, in the case of Kanban companies, higher status tasks, a lack of promotion opportunities in the industry and wider societal pressures (ensuring that women are viewed, by both themselves and others, as incapable of handling and therefore not wanting promotion), means that they are no more likely to be promoted than their production line counterparts.

6.4 THE VALIDITY OF THE JOB ENLARGEMENT VERSUS JOB ENRICHMENT AND UPSKILLING VERSUS DESKILLING DICHOTOMIES: EXPLANATIONS

The final section of this chapter explores the validity of the job enlargement versus job enrichment dichotomy and comments upon the deskilling versus upskilling dichotomy which is said to result from technological change. It then goes on to examine in further detail, the nature of and explanations for the models of team working implemented, and investigates the role that gender plays in this process, thereby facilitating an explanation for the way in which team working affects the predominantly female workforce.

The evidence outlined in sections 6.2 and 6.3 of this chapter enables an assessment of the validity of the job enrichment versus job enlargement dichotomy advocated by authors such as Buchanan (1994), Dawson and Webb (1989) and Tomaney (1990) and the deskilling versus upskilling dichotomy which authors such as Cockburn (1985), Truman and Keating (1987) and Wajcman (1991) suggest results from technological change.

As explained in chapter three, the implementation of team working can have two key consequences, with the labour force either experiencing the drawbacks of job enlargement and deskilling or the benefits of job enrichment and upskilling. Moreover, Buchanan (1994) and Tomaney (1991) indicate that the extent to which each scenario prevails is dependant upon the way in which work is reorganised. It is argued that if certain models of team working are implemented (based on the Swedish prototype) the workforce will experience job enrichment and operative skills rather than technological change will be used to achieve flexibility. Moreover, if new technology is utilised in this model of team working it will be used in a way which upskills the jobs of the workforce. However, if full ethos of the Swedish model are absent or other variants of team working (based on the Japanese prototype) are installed, the workforce may instead experience job enlargement and technology will be utilised in a way which deskills the jobs of the workforce.

The evidence provided in this chapter, however, reveals that the situation is a lot more complex than these authors suggest and cannot be explained in such simplistic terms. Indeed, two main criticisms of the job enlargement versus job enrichment and upskilling versus deskilling dichotomies arise from this chapter. The first criticism concerns the way in which the team working commentators divide firms into two distinct groups; firms operating the 'Swedish' model of team working whose workers experience the benefits of job enrichment and upskilling and firms operating either the 'Japanese' model or a variant of the 'Swedish' prototype whose workers experience the drawbacks of job enlargement and

deskilling.

The evidence provided in section 6.2 reveals that all sixteen team working companies utilise either the TSS or Kanban principles which originate in Japan. On the basis of the theoretical assumptions of the authors previously mentioned (in particular Buchanan, 1994 and Tomaney, 1990) this would seem to indicate the prevalence of job enlargement and deskilling rather than job enrichment and upskilling. However, as we have seen, the situation is a lot more complex. Although the companies all operate systems of team working based on Japanese principles they can be classified into three broad groups, each of which has different implications for the workforce. At one end of the spectrum 37% of the companies have implemented a TSS model of team working. The nature of this system means that team members are required to move frequently between prescribed workstations, performing a larger quantity of sewing operations than on the production line. Moreover, technological change which reduces the skill content of each sewing operation is central to this system of team working. On the basis of existing definitions this would appear to indicate the existence of job enlargement and deskilling.

50% of the companies visited can be located at a central point on the spectrum and operate a model of team working based on the Kanban principle but have declined to provide a comprehensive programme of training. Machinists working in these companies again perform a wider range of similar status sewing tasks, however unlike the TSS model, technological change which deskills the jobs of the workforce is not a feature of this system. Team members additionally perform higher status tasks requiring a greater degree of responsibility (primarily gaining responsibility for the general organisation of the team). On the basis of existing definitions, this would appear to indicate the existence of job enlargement and a degree of job enrichment.

Two companies (13%) have implemented a Kanban model of team working alongside a comprehensive training programme and can be located at the other end of the spectrum. Machinists working in these companies also perform a wider range of similar status sewing tasks, however again unlike the TSS model, technological change which deskills the jobs of the workforce is not a feature of this system. These machinists additionally experience a far greater devolution of responsibility than their counterparts in either of the other two models of team working, being responsible for the organisation of the team, as well as line balancing issues, solving production problems and making decisions during style changes. However, even in these companies, the devolution of responsibility is limited. On the basis of existing definitions, these workers appear to experience both job enlargement and a greater

(although limited) degree of job enrichment than those working in the other team working companies.

From the sample of companies surveyed in this study, it is therefore clear that the debate should not be dichotomised in terms of job enlargement and deskilling versus job enrichment and upskilling nor in terms of Swedish versus Japanese prototypes. It is evident that models of team working which utilise manufacturing principles of Japanese origin are not homogenous systems which have a single effect on the workforce, enlarging their jobs and utilising technology in a way which deskills. Although this appears to be true of the TSS model, the Kanban system of team working can also enrich the jobs of the workforce and the degree to which it does is principally determined by the nature and extent of the training provided. Moreover, technological change which deskills the jobs of the workforce is not a feature of this system of team working.

The second criticism of the job enlargement versus job enrichment and deskilling versus upskilling dichotomies concerns the definitions of these terms and their implied implications. It is suggested by various academics writing in this field (Buchanan, 1994, Tomaney, 1990 etc.) that job enlargement and deskilling is a detrimental process, forcing the workforce to experience labour intensification. Job enrichment and upskilling, on the other hand, are viewed as beneficial to the workforce.

The evidence provided in sections 6.2 and 6.3, however, reveals that the debate is much more complex. It is incorrect to assume that workers who perform a wider range of similar status tasks suffer, even if the tasks contain a lower degree of skill content. Likewise it is inaccurate to assume that those performing higher status tasks involving a greater degree of skill content benefit. Consideration also needs to be given to the wider implications for the labour force. It was revealed in section 6.3 that machinists working in all three models of team working viewed work as more interesting and enjoyable, irrespective of the extent to which their jobs were either 'enlarged' or 'enriched', 'deskilled' or 'upskilled'. Thus, although machinists working in Kanban teams enjoyed the additional variety and responsibility involved in organising the team and (in the case of those working in companies which have adopted a comprehensive training programme) participating in the decision making process during style changes, as well as problem solving and line balancing activities, those working in TSS based teams who simply carried out a wider range of sewing operations which contain a lower degree of skill content also enjoyed a greater variety of work, finding work more interesting and enjoyable.

Furthermore, although machinists working in all three models of team working viewed the requirement to perform a greater variety of duties as more interesting and enjoyable, they all experienced a degree of labour intensification, often being forced to work harder for similar levels of financial remuneration. Moreover, it was found to be team members who experienced the greatest degree of job enrichment and upskilling rather than enlargement and deskilling who suffered the most in this respect, being expected to perform a greater variety of similar and higher status tasks for similar levels of earnings. The prevalence of labour intensification without financial remuneration is exacerbated by the fact that team members, irrespective of the system of team working in operation, are not rewarded by any other means for their harder work, being no more likely to gain promotion than their production line counterparts.

It can therefore be seen that the evidence provided in section 6.3 of this chapter further questions the validity of the job enlargement versus job enrichment and deskilling versus upskilling dichotomies advocated by many commentators. The debate does not appear as clear cut as the authors would lead us to believe. The argument that job enlargement and deskilling is necessarily detrimental and job enrichment and upskilling is necessarily beneficial to the workforce has been brought into doubt. The implications of each of these terms are interrelated and overlap, therefore casting doubt upon the validity of the dichotomies. While the greater degree of operative responsibility and autonomy involved in job enrichment and upskilling should be welcomed, the possibility of drawbacks, particularly in terms of the absence of financial remuneration should also be taken into account. Likewise although discussions of the implications of job enlargement and deskilling should not omit the drawbacks of the resulting labour intensification, neither should they ignore the advantages involved in the performance of a greater variety of tasks.

Having raised doubts about the job enlargement versus job enrichment and upskilling versus deskilling dichotomies and having established that the team working companies studied for this piece of research can be classified into three rather than two broad categories in relation to the implications for the workforce, the remainder of this chapter attempts to examine in further detail the nature of and explanations for the three models of team working implemented.

This chapter has revealed that the way in which the workforce are affected by team working is determined by the type of system implemented, together with the degree of accompanying cultural changes, particularly alterations to management style and training provision. It has been discovered that the system of team working has implications for the way in which

management style and training provision changes, however other factors are also involved. The remainder of this chapter explores these additional factors in detail in order to provide a comprehensive analysis of the way in which team working affects the working lives of team members employed in the clothing industry.

6.4.1 Management Style

It has already been explained that the system of team working determines the way in and extent to which management style changes. Within companies operating the TSS model of team working, the style of governance remains based on direct control (whereby the labour force are governed by the use of coercive threats, close supervision and limited individual responsibility). The Kanban model of team working, on the other hand, is more conducive to a change in management style away from direct control towards responsible autonomy (whereby workers are given enhanced status, authority and responsibility). However, it has been revealed in this chapter that the responsible autonomy method of governance has only been partially adopted in companies operating the Kanban model of team working. This style of governance is more prevalent in Kanban companies providing supervisory and operative training (both technical and social). However, even in these companies the existence of responsible autonomy is restricted; the responsibility and discretion devolved to team members is limited to certain tasks and activities and managers retain overall control, only really paying 'lip service' to the idea of worker empowerment. This can partially be explained by the absence of managerial training which enables the adjustment to a new style of governance (see section 6.4.2d), but other factors may also be involved, particularly issues concerned with gender relations.

The hesitation of management to change their style of governance and devolve greater responsibility is understandable in any company in any industrial sector, regardless of the system of team working in operation. The culture of British management has traditionally been based around direct control, involving managers dictating to the workforce and allocating them little discretion and autonomy. This has been particularly evident in the clothing industry, primarily because the workforce are predominantly female.

The results of both the management and machinist interviews reveal that women are often viewed as marginal and unskilled workers, being incapable of handling and therefore not wanting the enhanced power that accompanies responsible autonomy.

"The girls don't really want responsibility, they like to be told what to do and to get on with it. I really think that if you give them too much say so,

you know let them make decisions, they just wouldn't know what to do, it'd be way above their heads. And that's not being nasty or anything it's the truth.....there's not much point in changing it all. I know some say that everything should change with small groups but if you give them too much they get carried away. They're not used to any responsibility here or at home. I mean at home the husband takes charge, females in general don't run things.

(Manager of team work company)

These stereotypical opinions of women and work can be explained by the social construction of skill (see section 3.2.2c for a more detailed discussion) and are so powerful that they are not only held by male managers but also by females, both at a managerial and operative level. Hence, providing similar evidence to the work of feminist authors cited in chapter three, such as Forsberg (1994), Jenson (1989b), Pollert (1981) and Westwood (1984).

This view of women as being incapable of handling a high degree of responsibility appears prevalent amongst nearly 90% of the managers of companies operating team working. They consist of both male and female managers and those in companies utilising both TSS and Kanban systems of team working. Explanations for such managerial perceptions are both complex and diverse, however two reasons were frequently cited during the managerial interviews. Firstly, managers suggested that females are incapable of handling additional responsibility because work is of secondary importance to women and secondly, because they do not believe females capable of treating employment seriously.

Thus to turn to the first issue. Many of the team working managers appeared to believe that work is of secondary importance to most women. They argued that the majority of women prioritise family responsibilities over and above paid employment and that as women are widely perceived by both themselves and others as the prime homemakers and carers they are inclined to be absent from work periodically to meet the needs of the household, be it taking care of ill children, accompanying them to the doctors/dentist, being available to collect a delivery or admit a trades-person.

"Obviously we have pregnancies, we have a lot of other female related problems relating to children, it tends to be the female that stays off if there's illness with children, it tends to be the female if they're having something delivered, anything that causes absence you tend to find more so in your females than your males."

(Manager of team work company)

As a result of these additional societal burdens placed upon women, managers agreed that, as workers, women are less reliable than their male counterparts. Ironically this opinion was held by female as well as male managers, the majority of whom complained of being in an identical situation, yet spared little sympathy for their fellow females. This view of women therefore confirms the evidence provided in chapter three by Westwood (1984) amongst others, that women are often viewed as naturally unreliable and was in fact often put forward by management as an explanation of why women are incapable of handling a greater degree of responsibility.

"We couldn't give any responsibility to them [women], you have to be careful."

Question: Why?

"We have problems with them....Such as you have a period every month [laugh], you have children and all the little problems that they bring [laugh]. You know what women are like they are all levels of schizophrenic aren't they?"

(Manager of team work company)

The second explanation frequently provided by managers in support of their retention of direct control over their workforce is that they view women as being unserious about work and therefore incapable of handling a higher degree of responsibility. Many managers attempt to justify the fact that women do not treat work seriously as they, in general, attend work for different reasons than their male counterparts. They agreed that whilst men attend work in order to earn a living, as the main breadwinner, women attend work for a variety of other reasons, for companionship, in order to socialise, for a break from housework and childcare responsibilities and to earn a bit of pocket money, so called 'pin money'. Hence, when asked why women come to work, managers typically replied,

"Women come to talk to their friends, for friendship, some of them come for money, very few of them come for money believe it or not, the reasons are multitudel. Men come to work to earn a living...men tend to be the breadwinners, work is a man's life, for a woman, it's more of a pastime, to fulfill their need."

(Manager of team work company)

This view was held by both male and female managers, as well as managers of TSS and Kanban based systems of team working. Furthermore, even when some managers recognised that this situation has changed in recent years with male unemployment rates rising and women becoming the main and often the only 'breadwinners' in the household,

they continued to believe that work and the ability to earn 'a living' is not as important to women as it is to men.

"I believe that often men have more of a need to work, they are often the main breadwinner in the family, the main earner. So work is or tends to be much more important to men. Women are now becoming the main earner with high unemployment and come to work because their husband is unemployed or because they want something to do, but for men work is more important, it's about being a breadwinner."

(Manager of team work company)

The fact that management view women as marginal workers, unserious about employment has been revealed by other feminist authors, in particular Pollert's examination of the tobacco industry (1981).

Managers additionally highlighted the issue of career progression and promotion as a further indication that men and women enter the labour market for different reasons. They argued that unlike male employees, female machinists do not view their job as a career and that very few of them would consider achieving promotion.

"Look to tell you the truth the girls aren't serious about work, it's not a career, not like in the man's world where everybody's reaching for the top, to climb the ladder, so to speak.....frankly we have advertised a number of times, internally, but the girls just don't apply. They don't want promotion, they're not looking for it, it's too much responsibility, they just want to come to work, earn a bit of money and go home and forget about it."

(Manager of team work company)

It can therefore be seen that managers often view women as attending work for different reasons than men and utilise this to justify the fact that machinists are flippant about work and therefore incapable of handling the greater control involved in responsible autonomy. Machinists themselves help to fuel these arguments, often avoiding any additional responsibility in the workplace.

B: "I wouldn't mind promotion, I suppose, but I wouldn't want the responsibility."

A: "I wouldn't mind doing training, but that's about it. I wouldn't like the responsibility of anything like that."

(Group discussion of team members)

Explanations for the reluctance of machinists to accept additional responsibility at work can be linked to social pressure, at both a micro and macro level. Micro-social pressure from friends/colleagues within the company often prevents women from accepting supervisory jobs which require greater levels of responsibility. Machinists are often afraid of being identified as 'one of them' (management) and subsequently excluded from their present circle of friends and colleagues. Macro-social pressures, on the other hand, encompass wider societal pressures and stereotypes and ensure that women are viewed as incapable of handling promotion and its accompanying responsibility, preventing them from accepting supervisory posts.

While the majority of managers who were interviewed suggested that women are incapable of handling the greater levels of responsibility and power involved in a responsible autonomy style of governance, two managers held slightly different opinions. Both worked in the two Kanban companies, 2 and 4, which had provided a comprehensive programme of training and where team members enjoyed the greatest devolution of autonomy. Managers of these companies expressed the same concerns about female employees as the other managers, suggesting that women attend work for different reasons than men and are either excluded from or avoid high levels of responsibility. However, the main difference between these and the other managers is that while they acknowledge the existence of such stereotypical perceptions of gender and responsibility, they do not necessarily believe them to be correct.

"Well of course your females are different from your males, that's to be expected. Women have other pressures, childcare, housework and what have you. Traditionally, it's the husband that's the breadwinner and the woman stays at home. Females aren't used to responsibility, males are and females to tell you the truth have other responsibilities at home and whatever.....but women can do the same jobs as men, and just as well, especially in this industry, there's no reason why not."

(Manager of Kanban team work company)

In conclusion, this evidence provides a wider explanation for the level of responsibility devolved to the female team members. TSS models of team working ensure that the workforce are governed by direct control and stereotypical views of gender relations on behalf of managers reaffirm this. Although the Kanban model of team working is conducive to a change in management style from direct control to responsible autonomy, stereotypical gender relations are so powerful that they limit the extent of the devolution, with machinists in most companies simply gaining responsibility for the organisation of the team.

However, the situation differs in the two companies, 2 and 4, which have provided comprehensive supervisory and operative (social and technical) training. While managers of both these companies expressed concerns about the willingness of women to accept high levels of responsibility, they were in no doubt about their ability to do so. Such managerial attitudes together with the system of team working and the accompanying training programme has facilitated a greater devolution of responsibility. However, even in these companies the responsibility devolved to machinists was limited. This can be explained by the fact that British managers traditionally govern by direct control and are reluctant to devolve too much responsibility to an operative level. Managerial training would help to reverse this situation, but as section 6.4.2d reveals, such training is frequently absent.

6.4.2 Training

It has already been pointed out that the type of training provided is determined by the system of team working in operation. Both supervisory and operative (social and technical) training is essential to the TSS model of team working and is very rarely omitted. Although some Kanban companies have also provided training, most have avoided its provision, indicating that in comparison to the TSS prototype, training it is not as essential. However, the system of team working alone cannot be responsible for the level of training provided, other factors also play a role in this process, in particular gender relations. In order to explore these factors in detail, further explanations for the provision of each type of training are examined, encompassing operative (technical and social), supervisory, and management training.

6.4.2a Technical Training for Operatives

The provision of technical training at an operative level has various implications for the way in which team working affects the jobs of the workforce. As previously explained, it primarily enables machinists to perform a wider variety of sewing tasks, facilitating the multi-skilling which is central to the concept of team working. However, it can also have implications for the way in which new technology changes the skill content of operatives jobs.

Firstly, to look at the way in which technical training enables machinists to perform a wider variety of sewing tasks. As already stated, team working literature suggests that technical training is essential if machinists are to become multi-skilled, performing a range of different sewing operations. However, the overwhelming majority of managers (all except three) expressed doubts about investing in such operative training, primarily due to its high monetary cost, hence reaffirming the claims made by Weintraub (1987) (see section 3.2.2a). Managers are understandably concerned about investing large amounts of money into

training employees who may eventually leave the company. Moreover, the fact that the majority of machinists in the industry are female appears to play a large part in this process. Managers frequently pointed out that they are prepared to invest in training provision for the predominantly male mechanics, if necessary, but as the majority of machinists are female, they may become pregnant and leave the company, thus rendering operative training 'a waste of money'. This reaffirms the evidence provided in section 3.2.2c by Cockburn (1983) and is exemplified by the following quote, which was a typical statement from the managers who were interviewed,

"Pregnancy is a problem for us I've got to be honest. We've got, is it five or six pregnancies at the moment. And when you consider it probably costs us three to four thousand pounds to train a machinist. It really makes you think twice about training em if they're gonna leave sometime in the future to raise a family and you know they don't return to work, only about 10% of our ladies who leave to have babies actually return to work."

(Manager of team work company)

These stereotypical views of women and training were apparent amongst both Kanban and TSS managers. However, the reaction of managers appeared to vary according to the system of team working in operation. Managers of Kanban companies holding such stereotypical perceptions of gender and training completely omitted the provision of operative training at a technical level. This lack of official training, as previously explained, effectively compels team members to cross train each other, whether they want to or not. If cross training does not take place, the number of overall skills and therefore the flexibility of the team will not be sufficient to reach the production targets set and hence to obtain the bonus payment.

C: "You don't actually get training though do you? Somebody in the team sits at the side of you and say's 'do this' but it doesn't matter how often they say 'do this' or show you how to do it, if you can't handle properly you just can't get into it....because I mean on teams you need a lot more training, well you're doing other jobs aren't you."

A: "You've got three jobs instead of one. You've got to master three machines and get your speed up to earn your money and that takes years usually and we are expected to learn off other team members."

(Group discussion of Kanban team members)

Although TSS managers had similar stereotypical views of their female workforce, the fact that training is essential to this system of team working meant that managers responded in

a slightly different way. TSS machinists are expected to move frequently and regularly between a range of workstations and in order to facilitate this managers provide formal technical training, believing that reliance on cross training is insufficient. However, the implications of pregnancy was a reoccurring theme throughout these interviews and in response two thirds of the TSS managers pointed out that they tried to be selective in terms of recruitment, suggesting that they would be reluctant to employ and train a pregnant woman or a woman 'susceptible' to being pregnant.

"Team working involves a large amount of investment into training on the company's behalf. We won't refuse to train women purely because they may become pregnant but as a company we do look for certain age groups, that have already had a family or certain individuals who don't want to have a family. This doesn't cause too many problems then from a team work point of view."

(Manager of TSS team work company)

Only three of the managers refuted these stereotypical perceptions of women, pregnancy and training. These were the managers of the three Kanban companies which had provided technical training for their operatives. The managers of these companies recognised the importance of formal training to the workforce, particularly when operating team working.

Technical training also has implications for the way in which new technology affects the jobs of the workforce. As previously stated, the TSS model of team working involves technological change based on the introduction of new programmable sewing machinery which reduces the skill content of individual operations, thereby enabling machinists to change workstations regularly and frequently within each working day. Such technological change is not essential to the Kanban model of team working, but does still occur, albeit to a far lesser extent.

As explained in section 6.2.1, this technological change tends to deskill the jobs of the predominantly female machinists, reducing the skill content of each sewing operation. However, at the same time it creates higher status computer programming activities, which tend to be assigned to the predominantly male mechanics. Explanations for this are linked to the fact that mechanics rather than team members are provided with the technical training to perform these highly skilled activities. The reasons for this can again be linked to the reluctance of managers to train female employees, as previously pointed out, but more importantly in this context can be related to the fact that technology is gendered. It is believed that male mechanics can be trained to perform these activities but female

machinists are incapable of performing such activities and therefore such training is viewed as a waste of time and resources.

Evidence that technology is gendered can be identified from two main discussions, firstly from an analysis of the assumptions made by managers in relation to the introduction of new technology and secondly from an examination of the way in which the 'technical' job of the mechanic is viewed.

Assumptions made by management. An analysis of the interviews with management shows that one way in which technology is gendered is by the beliefs and actions of managers. Managers often contribute to the gendering of technology, holding the view that men and women have substantially different relationships to technology, viewing men as being capable of controlling technology, whilst women are competent only in its operation. These views are held by male and female managers as well as those working in companies operating both TSS and Kanban systems of team work. When managers were asked if they thought that men and women had the same relationship with technology, they answered negatively, stating that women have far less confidence and ability when it comes to technology.

"Personally speaking, again not wanting to appear sexist, I would think that you could probably get a male more on board to some sort of technology than you could a female....I think there would be more resistance from a female. They just don't seem to like the idea of machinery."

(Manager of team work company)

When new technology is introduced, managers therefore view women as being reluctant to use it and so inevitably believe that they are incapable of controlling it. As a result, managers assign the newly created computer programming activities which involve a high degree of 'technological know how', requiring the control, management and manipulation of machinery to male employees, whilst the operational tasks which have been deskilled are allocated to women. This lack of confidence of managers in their female employees technological ability is more pronounced in some companies than others. In fact, in four companies management viewed women as so technologically incapable that female machinists were prohibited from performing any activity which had a degree of technical content, even extending to simple activities which women carry out everyday in the home, such a using a screwdriver or putting a plug in a socket.

C: "All of us are told we're not allowed to take a screwdriver to it [machine] aren't we."

A: "You're not allowed to take a screwdriver to it. You're not even allowed to plug them in."

D: "In case we electrocute ourselves, we're brain dead you see, we're useless women. We're not capable. Putting a plug in is a man's job int it [sarcastically]."

(Group discussion of team members)

It can therefore be seen that the introduction of new technology which requires any 'technological know how' is viewed by management as requiring male personnel, with female workers being viewed as both unwilling and unable to perform such activities. Whether or not the women themselves hold the same 'gendered' opinion, these assumptions made by management are sufficient to determine that a 'technical' job is a 'masculine' one. This therefore provides supporting evidence to the work of Cockburn (1985) and Jenson (1989b), who argue that technology is gendered and particularly to the theories of Milkman (1983) that one of the ways in which technology is gendered is through the assumptions made by managers (see section 3.3.2 for a more detailed discussion).

The role of the mechanic. Further evidence that technology is gendered is available when examining the job of the mechanic in the clothing industry. The mechanics job is widely viewed as a technical one, which involves 'masculine' activities such as mechanical competence, the control and manipulation of machines and a high degree of technological know how, as well as entailing tasks such as heavy lifting and working in a 'dirty' environment, all of which are seen as unsuitable for women. It therefore comes as no surprise that the overwhelming majority of the mechanics in the industry are male and that both managers and machinists view the occupation as a masculine domain.

"I can see that being a mechanic would need a certain type of mind.....and I think that you probably need an aptitude for something mechanical to be able to do it, and I think that's historical because men develop an interest and are more likely to develop an interest in building things, cars and so on when they're small because that's what they're encouraged to do."

(Manager of team work company)

As the mechanics job is widely viewed as masculine and the majority of the mechanics within the industry are male, any potential female mechanics would consequently be required to work in a predominantly male environment. Some managers believe this to be an

additional problem for women, arguing that they would not only have difficulties performing these 'masculine' activities but would find the 'bad' language, 'dirty' jokes and pornography, which is present in a predominantly male environment, difficult to cope with. This therefore provides supporting evidence to similar claims made by Cockburn (1983) that society perceives men and women as so different that they are unable to work together.

"My opinion, it could be a problem for women being mechanics it's been a male sphere for a long time and chauvinistic pig I suppose is the phrase and they might resent women coming in, there might be a bit of sexual harassment, swearing you know, unfortunately workshops tend to be the areas where you have pin-ups and the individual has to be able to handle that."

(Manager of team work company)

The managers believe that they are not alone in viewing the mechanics job as unsuitable for women and that female employees themselves hold similar opinions. Thus they agreed that very few women working in the industry would actually want to be a mechanic, if given the opportunity.

"But I think as far as your mechanic goes they [women] don't want it....we did have a position in a trial team for a mechanic/work study engineer and it was not a full-time mechanic role, but it was 50% mechanic, 50% work study engineer and to be honest we didn't have any females apply for it at all."

(Manager of team work company)

In order to assess the extent to which these management comments are correct, extensive discussions were carried out with female machinists working in the industry. Although the women disputed at length management claims that they were unable to perform the job of a mechanic because of its technical nature, when asked if they would want to become a mechanic, they often reproduced the comments made by managers, stating that the job was really more suitable for a man and one which they would not feel comfortable performing. This reveals the extent of the pressure placed on women to refrain from extending beyond traditional 'gender' barriers and performing tasks which are viewed by society as 'masculine', whether or not they believe they are able to. Thus reaffirming the evidence outlined by Cockburn (1985) in section 3.3.2 that women themselves make a substantial contribution to gender segregation in relation to technology and that as women are stereotypically viewed as technologically incompetent, they inevitably feel that jobs involving the manipulation of technology are for men.

Some women do however succeed in breaking through these 'gender' barriers at work, performing jobs which are traditionally viewed as masculine involving a high degree of technological competence. Indeed, two women working in the Nottinghamshire clothing industry had successfully applied for jobs as mechanics. These women appeared to be viewed as rather strange by female machinists who knew of them. In fact during the group discussions with machinists, these female mechanics were frequently referred to as unnatural and more masculine than feminine, not constituting *real* women and being undesirable to men. As a consequence these female mechanics were widely believed to be homosexual. Hence when a group of machinists were asked if they had ever met a female mechanic their reply was,

B: "Yeh, she's head mechanic, the boss."

C: "She's a lesbian, a lemon int she?"

B: "Yeh."

The group of machinists were then asked if the female mechanic was equally as good as the other male mechanics.

C: "Ooh, yeh. I think she is a man really."

D: "But that's a woman doing a man's job, they tend to be more masculine don't they."

C: "She is though, she is like a man."

D: "They usually are."

C: "She is, she's really butch."

D: "You see, it's like a woman doing a man's job is masculine and a man doing a woman's job tends to be more feminine."

(Group discussion of team members)

This therefore reaffirms the theories of Cockburn (1985) that technology is gendered in such a way that women who succeed in performing traditional 'masculine' jobs, involving a degree of technological know how are viewed as unfeminine and as a kind of 'iron maiden' undesirable to men.

The discussion of both the assumptions made by management when new technology is introduced and the 'technical' role of the mechanic reveals the way in which technology is

gendered. This means that when new technology is introduced, female machinists jobs are deskilled and managers are reluctant to train them to perform the highly skilled computer programming activities which are instead assigned to the predominantly male mechanics. This situation is prevalent in all the sample of companies, in those operating both the TSS and Kanban models of team working and even extends to the Kanban companies previously mentioned which provide some technical training and whose managers refute these stereotypical perceptions of women, pregnancy and training. However, as technological change is central to the TSS but not to the Kanban model of team working it is these team members who suffer the most, experiencing this deskilling effect to a far greater extent than their Kanban counterparts.

6.4.2b Social Training for Operatives

Research suggests that the provision of social training at an operative level (focusing on issues such as confidence building, problem solving, team building and communication etc.) is essential if team members are to perform tasks which require a greater degree of discretion and autonomy (Farrands and Totterdill, 1990, NEDO, 1991b, Tyler, 1994). Despite the importance of this social training, these authors are also keen to point out that firms will be reluctant to invest in such training. This is reaffirmed by the management interviews, with all except two of the team working managers stating that they were reluctant to invest in such operative training. Part of this reluctance can again be explained by financial considerations, with managers believing that such investment will be wasted if women become pregnant and subsequently leave the company.

An additional explanation can be linked to the concept of the social construction of skill. As stated previously, women are viewed as unskilled and peripheral workers by both themselves and others in society and therefore although management view women capable of performing tasks of a similar nature, they believe that they will find the performance of tasks of a more discretionary nature too difficult. Subsequently they are reluctant to spend time and resources training a female workforce to carry out tasks which they do not believe them capable of performing. Empirical evidence of the presence of these stereotypical managerial perceptions of women has been examined in section 6.4.1 and therefore a further discussion shall not detain us.

Again these stereotypical views of female labour were held by managers of TSS and Kanban companies alike, but once more the way in which managers have responded varies according to the system of team working in operation. Managers of Kanban companies holding such stereotypical perceptions of gender and skills have neglected to provide any

kind of social training. They view women as incapable of performing higher status tasks involving a greater degree of discretion and consequently believe social training to be a 'waste of money'.

Despite similar stereotypical views of female labour and skill, the majority of the TSS managers (five out of six), on the other hand, have provided social training for team members. Managers of TSS companies believe women incapable of handling a greater degree of autonomy and therefore that investment in social training is unwise. However, in an attempt to prescriptively follow the recommended characteristics of the TSS prototype, social training is provided. Nevertheless, a detailed examination of the nature of the social training provided in these companies reveals that the training is inadequate. The machinists working in these companies agreed that the provision of social training was limited to just a small proportion of the workforce, often to only the first couple of teams established and rather than enabling them to perform activities of a more discretionary nature, the training tended to focus on the avoidance of circumstances which may affect the teams performance, such as intra-team disagreements.

The only two managers who disagreed that women are less capable of handling additional discretion and autonomy were those working in the two Kanban companies, 2 and 4. The managers of these companies, as already stated, accept that women often lack the confidence to handle activities requiring high levels of responsibility but unlike the other team working managers believe that women are capable of performing such activities. However, they believe that the provision of social training, which incorporates problem solving, is essential if machinists are to adapt to new tasks involving a greater degree of autonomy. The Kanban team members working in these two companies agreed, stating that the social training had aided their adjustment to the additional responsibilities that team working encouraged.

B: "Well when we first did it we laughed, we thought oh playing games, we thought we were gonna play monopoly or what have you, but you sort of had to go outside and the lady that was doing it, she say's, "right I want to see how many cars have got child's seats in" and there was eleven of us and we had to all come back and say what cars were outside and one thing and another to see what we could observe and it worked out that when you're on a team you noticed if there was anything wrong. You've got to keep your eyes open all the time and it cut down on repairs basically doing it that way because you were noticing from one persons work to your own."

(Kanban team member)

6.4.2c Supervisory Training

Various commentators (Farrands and Totterdill, 1990, NEDO, 1991, Tyler, 1994) suggest that team working can only facilitate a devolution of responsibility and autonomy if the method of supervision changes. They argue that instead of policing and directing operative behaviour, supervisors should become facilitators, enabling operatives to make their own decisions wherever possible. However, these authors recognise that training at a supervisory level is required to facilitate these changes; supervisors require training to enable them to progress away from an autocratic style of supervision and to trust the competency of the workforce.

However, all except two of the team managers stated that they were reluctant to provide this type of training. Explanations for this relative absence of supervisory training again lie with financial constraints. The managers frequently stated that training at any level is costly and is an item which is the first to be disposed of in times of financial constraint. However, when analysing the interviews in further detail it becomes evident that monetary cost is not the only, nor the most powerful constraint; the social construction of skill again plays an influential part in this process.

Although both TSS and Kanban managers held similar stereotypical perceptions of gender and skill they each reacted differently to the provision of supervisory training. Kanban managers simply omitted the provision of any kind of supervisory training following the implementation of team working. All six TSS managers, on the other hand, did provide supervisory training. However, an examination of the supervisory training provided in these companies reveals that it differs substantially from that advocated in the team working literature. As explained earlier in this chapter, the TSS model of team working involves a retention of direct control over the workforce and therefore instead of assisting supervisors to devolve responsibility and become facilitators rather than policers, the training aims to ensure that supervisors tightly manage their allocated teams, directing and controlling the activities of team members and ensuring that stoppages are kept to a minimum.

Supervisory training which aims to facilitate a devolution of responsibility was only provided in the two Kanban companies whose managers refute the inability of female labour to perform tasks requiring discretion and responsibility. These managers believe that women are capable of handling responsibility and that the provision of supervisory training facilitates this.

"The supervisors have had the team building with the teams, they have also had a supervisors workshop, which gave them an outline of the basic competencies that we wanted them to have, and to help them to understand the process of team working, that they have to give power, empower if you like, the girls. This aspect is vitally important, the girls can do it but the supervisors have to come round to the idea and the only way to do that is by training and if that doesn't work more training."

(Manager of Kanban team work company)

6.4.2d Management Training

It is suggested in the team working literature that even if operative and supervisory training is provided, the amount of responsibility devolved to team members will be limited unless managerial training is simultaneously provided (Tyler, 1994). Training is required if managers are to adapt to a new managerial culture, facilitating a transfer of responsibility and autonomy towards team members, progressing away from an autocratic style of management. However, it is widely recognised that this aspect of training is the most difficult to encourage companies operating team working to adopt (Buchanan, 1994).

Indeed a detailed examination of the interviews with managers reveals that such training is absent amongst the companies which have implemented team working. None of the managers stated that they had received any kind of training to enable such a cultural change. Again, financial considerations partially explain the reluctance to provide such training but traditional management culture is also a contributing factor. It has been pointed out in section 3.2.2c that British manufacturing has a culture of 'learning by doing' rather than technical education and training. This culture has been dominant for time immemorial and as a result managers within all industrial sectors resist training if at all possible, often believing that they 'know best'. The clothing sector is no exception to this rule, and such attitudes were frequently revealed in the interviews, with managers often justifying the fact that they have not received any training with comments such as 'we do not need training, we know how to manage the workforce, we know best!'

Question: Do you think that management training would be useful?

"No, we know it all don't we [laugh]. I've now been maybe what eighteen years in this business, I've moved around a lot of companies and mostly it's just come from, "I like a bit of that, I like a bit of this". I suppose my problem now is, having looked for training earlier on in my career, there wasn't any about and what was around wasn't much good, and so now I've got to the stage where I've never had any training, I've learnt it all as I've

gone along and I'm OK. "

(Manager of team work company)

Although this reluctance of managers to undertake training is inevitably apparent in all British manufacturing sectors, it appears particularly powerful in the clothing industry. Again this can be linked to gender relations and the fact that the majority of the workforce are female. All except two of the managers appeared to believe that female employees are far easier to manage than their male counterparts. This was advocated by both male and female managers and was explained by the fact that women are less assertive, less confident and less sure of their own abilities than men and thus are more likely to 'do as they are told' and less likely to question managerial decisions.

Similar managerial perceptions of women have been discovered elsewhere by various feminist authors (Cockburn, 1985, Nicholson and West, 1988 and Wajcman, 1991) (see section 3.2.2c). Given these managerial opinions of female workers it is therefore not surprising that most of those who were interviewed expressed a reluctance to invest in managerial training, when after all, they are only managing *women*.

"I think women tend to be much less confident and I think they tend to expect not to do things correct and not necessarily successful, so they're much easier to help improve because they expect criticism and in my experience it's much harder to get men to change the way that they do something or listen to help or "why don't you do it another way?" or something than women. I just think women are more ready to listen and don't expect to have done it right and men are more likely to think that they have done it right.

(Female manager of team work company)

"What I do find is that men have a greater difficulty managing men than they do women. The group of men that we've got in the cutting room are very difficult to manage. It's almost like a one to one challenge with them, but it's not a problem managing the females.....I think men find it harder to manage other men because they tend to confront each other.

(Male manager of team work company)

Even the two managers of Kanban companies, 2 and 4, who do not hold such stereotypical perceptions of female labour have failed to invest in managerial training. So although operative (social and technical) and supervisory training has been provided the amount of responsibility and autonomy assigned to machinists is limited, as previously discussed. The managers of these companies indicated that they view managerial training as unnecessary.

They both stated that devolution of responsibility had been achieved and extended far enough, stressing the importance of retaining overall control.

"We've empowered the workers and all that, it's all been done. The girls have been trained, the supervisors have been trained. We've all changed our outlook. The girls have been empowered....We've got to keep it in perspective. OK team working's about empowerment, but we can't go too far, you can't give all your powers away, it wouldn't work, when push comes to shove somebody has got to be in overall control and that's me."

(Manager of Kanban team work company)

It can therefore be seen that traditional British attitudes towards training within the manufacturing sector together with stereotypical perceptions of female labour mean that managers of team working companies are reluctant to provide the training recommended by the team working literature. As a consequence most Kanban based companies neglect to provide either operative (technical and social) or supervisory training. Due to the nature of the system, TSS based companies do provide training at both an operative and supervisory level. However, stereotypical perceptions of women and work lead to selective recruitment policies and mean that the training neither focuses on increasing the devolution of responsibility to team members nor on enabling them to perform the newly created, highly skilled, 'technical' programming activities which result from technological change.

The only two companies to provide operative and supervisory training which enables a devolution of responsibility are those operating a Kanban model of team working, managed by individuals who refute stereotypical views of female labour. However, traditional managerial culture and the gendering of technology are so strong that even these more progressive managers are reluctant to receive training themselves and, on the occasions that new technology is introduced, are reluctant to train the female workforce to perform the resulting highly skilled, 'technical' programming activities. Hence limiting the extent to which team working can upskill and 'empower' the workforce.

6.5 CONCLUSION

The aim of this chapter has been to test the hypothesis that *'models of team working which lead to job enlargement and which utilise new technology in a way which deskills are more likely to be implemented than those which lead to job enrichment and which utilise technology in a way which upskills when the workforce are predominantly female'*. Existing literature suggests that the 'Swedish' model enables operatives to enjoy job enrichment. Operative skills rather than technological change are utilised to achieve flexibility and even

if new technology is introduced it is used in a way which upskills. Variations of this model or other models based on the 'Japanese' system mean that the workforce experience the drawbacks of job enlargement and technology is used in a way which deskills. It is claimed that the latter models are more likely to be implemented when the workforce are predominantly female.

The evidence provided in this chapter has, however, revealed that the situation is a lot more complex than existing literature suggests. The models of team working implemented in the sample of companies all utilise either Kanban or TSS principles of production, which originate in Japan. However, it has become clear that models of team working which utilise Japanese principles of production are not homogenous systems which have a single effect on the workforce, enlarging their jobs and utilising technology in a way which deskills. The Kanban and TSS models of team working have different implications for the workforce, with each system determining the existence of wider cultural changes (based on alterations in management style and the provision of training). Furthermore, the distinction between the terms of job enlargement and deskilling versus job enrichment and upskilling appear somewhat blurred and the implied drawbacks and benefits of the respective terms have been brought into doubt.

37% of the companies have implemented a TSS model of team working. The nature of this system means that team members are more likely to experience job enlargement, being required to move frequently between prescribed workstations, performing a larger quantity of sewing operations than on the production line. Technological change which deskills each sewing operation is central to this system of team working.

TSS based companies provide training at both an operative and supervisory level. However, the system of team working together with stereotypical perceptions of women, work and technology means that the degree of cultural change is limited and therefore the training neither focuses on increasing the devolution of responsibility to team members nor on enabling them to perform the newly created, highly skilled, 'technical' programming activities which result from technological change. Management style within the TSS model is more likely to remain based on direct control and stereotypical perceptions of women and work reinforce this style of governance. As a combined result, TSS members are rarely awarded a greater degree of responsibility.

Contrary to what existing literature suggests, this does not mean that machinists working in TSS companies necessarily suffer by working in teams. It is clear that they experience labour

intensification, performing a greater variety of deskilled sewing tasks, without either greater financial remuneration or improved chances of promotion, as well as experiencing excessive peer pressure due to the system of payment. However, TSS team members do experience some benefits from the system, finding the greater variety at work both more interesting and enjoyable than the conventional production line.

The remainder of the companies operate a model of team working based on the Kanban principle. This system is less likely to lead to job enlargement and the accompanying labour intensification which is characteristic of the TSS model. Although machinists are expected to perform a wider range of similar status sewing tasks, thereby experiencing a degree of job enlargement, they are expected to change operations far less frequently and therefore technological change which deskills individual tasks is not such an essential feature.

The Kanban model of team working is more conducive to cultural change, in particular a change in management style from direct control to responsible autonomy and therefore team members in these companies experience a devolution of responsibility. However, stereotypical perceptions of women, work and technology, together with traditional British attitudes towards management and training mean that the devolution of responsibility to team members in most of these companies is limited, with machinists primarily gaining responsibility for the general organisation of the team.

Managers of two of these companies refute stereotypical perceptions of female labour. Although they express concerns about the willingness of women to accept high levels of responsibility, they are in no doubt about their ability to do so. Such managerial attitudes together with the system of team working means that the degree of cultural change in these companies is greater and as a result these managers are more willing to provide both operative and supervisory training and to devolve a greater degree of responsibility. Consequently, these Kanban team members not only gain the responsibility for the organisation of the team, but also for line balancing issues, solving production problems and the decision making process during style changes. However, it is clear that even in these companies the responsibility devolved to machinists is limited. Traditional managerial culture and the gendering of technology are so strong that these more progressive managers are reluctant to receive training themselves and to train a female workforce to perform the highly skilled, 'technical' programming activities, which result from the occasional introduction of new technology. Hence limiting the extent to which team working can upskill and 'empower' the workforce.

Contrary to what existing literature suggests, this does not mean that the implications for machinists working in Kanban companies are either beneficial or detrimental, rather they are a combination of the two. Machinists working in all the Kanban companies benefit from the system, they find the greater variety of sewing tasks and the responsibility involved in organising the team more interesting than the conventional production line and those working in the two companies which have experienced a greater degree of cultural change additionally enjoy participating in the decision making process during style changes, as well as problem solving and line balancing activities. However, Kanban team members also suffer some drawbacks. They experience a greater degree of labour intensification than their TSS counterparts, not only being expected to perform a greater variety of sewing tasks but also tasks requiring additional responsibility (without either greater financial remuneration or improved chances of promotion). Moreover, this labour intensification is exacerbated by the prevalence of excessive peer pressure which is primarily due to the payment system.

The evidence provided in this chapter therefore challenges the simplicity of the hypothesis that *'models of team working which lead to job enlargement and which utilise new technology in a way which deskills are more likely to be implemented than those which lead to job enrichment and which utilise technology in a way which upskills when the workforce are predominantly female'*. Certainly the model of team working influences the way in which technology is utilised and the degree of cultural change (particularly the method of governance and the provision of training) thereby determining the way in which the working lives of team members are enlarged and deskilled or enriched and upskilled. However, the resulting implications cannot be dichotomised in such simplistic 'either/or' terms. Female machinists working in various systems of team working with varying degrees of cultural change experience a combination of enlargement and deskilling, as well as enrichment and upskilling, both of which result in drawbacks and benefits. Moreover, the gender of the workforce does play a part in this process. The presence of stereotypical perceptions of gender, technology and work limits the degree of cultural change and therefore the extent to which the workforce experience a devolution of responsibility and upskilling, even in companies operating systems of team working which are more conducive to such changes.

CHAPTER SEVEN: POST-FORDISM, GENDER AND WORK - SOME CONCLUSIONS

The principal objective of this thesis has been to incorporate a gender dimension into the economic restructuring debate. It has become clear that neither of the two main schools of economic restructuring theory, the Institutionalists nor the Regulationists, have adequately incorporated a gender informed analysis into their respective theories of Flexible Specialisation and Post-Fordism. This thesis has attempted to redress these inadequacies by incorporating elements of feminist theory concerned with labour markets into Post-Fordist theory, thereby raising a number of theoretical arguments with respect to gender relations. These theoretical arguments have been empirically tested by an examination of the introduction of one form of Post-Fordism - team working, in the Nottinghamshire clothing industry. It is this empirical investigation together with the thesis's contribution to the theoretical debate which constitute the claim to originality.

Chapter two discussed the relative merits and drawbacks of the Institutional model of Flexible Specialisation and the Regulationists theory of Post-Fordism and explained why the thesis has been concerned with incorporating elements of feminist theory into the model of Post-Fordism rather than into Flexible Specialisation. From this discussion it became clear that neither theory provides a comprehensive explanation of the restructuring process and that both have a number of strengths and weaknesses. However, it was explained that a more comprehensive and concise analysis of the restructuring process which incorporates a gender dimension could be provided by taking the basic theory of Post-Fordism, in particular the work of Leborgne and Lipietz (1988, 1990) and developing their points of weakness.

Five issues were outlined in chapter two which highlight the strengths and weaknesses of the two theoretical perspectives: production flexibility; labour flexibility; empirical evidence; regulation; and gender.

Production flexibility. Flexible specialisation advocates such as Piore and Sabel (1984) and Hirst and Zeitlin (1991) focus much attention on production flexibility, exploring the way in which small batch production of semi-customised commodities has been made possible by technological innovations such as Flexible Manufacturing Systems (FMS), Computer Numerically Controlled machine tools (CNC), Computer Aided Design (CAD) and Computer Aided Manufacturing (CAM). Regulationists such as Leborgne and Lipietz (1988, 1990)

mention in passing the way in which technological innovation enables the achievement of production flexibility but fail to analyse this issue in detail.

Labour flexibility. Although the Institutionalists explore the search for production flexibility they fail to examine in any detail the implications of this search for flexibility on labour relations. Piore and Sabel (1984) and Sabel (1989) assume in passing that Flexible Specialisation is necessarily beneficial to labour, allowing workers to experience the benefits of job enrichment involved in functional flexibility. However, they fail to acknowledge that workers may also be adversely affected by the search for flexibility in the form of either job enlargement or numerical flexibility and suggest that in these cases the restructuring can be more accurately classed as a modification of mass production rather than the emergence of Flexible Specialisation.

Regulationists such as Leborgne and Lipietz (1988, 1990), on the other hand, concentrate on the implications of the search for production flexibility on labour relations, revealing that workers may be affected in a variety of ways, benefiting from the job enrichment involved in Kalmarism which results from the search for functional flexibility or suffering from the disadvantages of numerical flexibility which is involved in Neo-Taylorism. They additionally point out that a mixture of these two models can emerge in the form of Toyotism, whereby some core workers benefit from functional flexibility via job enrichment, whilst other peripheral workers suffer the drawbacks of numerical flexibility. However, Leborgne and Lipietz fail to recognise that functional flexibility is not necessarily beneficial and may also take the form of job enlargement.

Empirical evidence. The Institutionalists provide empirical evidence to support their theory of Flexible Specialisation, explaining that Flexible Specialisation has involved the re-emergence of industrial districts in Italy and the reorganisation of multinational corporations in Germany. Leborgne and Lipietz (1988, 1990), however, fail to provide empirical evidence to support their theory of Post-Fordism. They offer a range of forms which Post-Fordism can take (Kalmarism, Neo-Taylorism and Toyotism) and suggest that various countries are operating each of these models but do not provide any supporting empirical evidence to justify this.

Regulation. Despite the fact that regulation is not central to the theory of Flexible Specialisation, Piore and Sabel (1984) have conducted some research into this issue, primarily into the regional regulatory structures of industrial districts. Leborgne and Lipietz

(1988, 1990), on the other hand, claim that the mode of regulation is central to their theory of Post-Fordism but fail to explore explicitly the regulatory structures of the regime of accumulation. Some limited progress has been made in this direction by other Regulationist authors such as Bakshi, *et al.* (1995), Harvey (1988), Painter and Goodwin (1995) etc. but all too often they concentrate on the regulatory mechanisms of the state, failing to examine wider regulatory institutions such as the media, the family etc.

Gender. The final, and in the context of this thesis, most important issue of controversy between the two schools of restructuring concerns gender relations. Neither the Institutionalists nor the Regulationists adequately incorporate a gender dimension into their restructuring debate. The Institutionalists completely ignore the issue of gender in their Flexible Specialisation thesis. Leborgne and Lipietz's theory of Post-Fordism is more amenable to an incorporation of gender. Regulationist theory examines the restructuring process as an outcome of a number of social, political and economic struggles, and views social relations as being constructed, which can be likened to the way in which societal gender relations are constructed. Moreover, Leborgne and Lipietz (1988, 1990) do recognise that gender is a component of Post-Fordism, arguing that the extent to which the labour force experience the functional flexibility of Kalmarism or the numerical flexibility of Neo-Taylorism may be determined by gender. However, all too often they 'skirt' around the issue of gender, failing to elaborate on it in any substantial detail.

Although this analysis exposes gaps in both the Institutional and Regulationist theories of economic restructuring, it was argued in chapter two that the most effective means of incorporating a gender dimension into the restructuring debate would be to utilise the basic Post-Fordist theory of Leborgne and Lipietz (1990). This enables a discussion of gender relations (unlike the Flexible Specialisation thesis) and is concerned with the implications of the search for flexibility on labour. It was decided that the thesis would concentrate on incorporating a gender dimension into the Post-Fordist regime of accumulation but not into the mode of regulation. Other authors, in particular Bakshi *et al.* (1995) are in the process of researching the gender implications of regulatory structures, primarily in relation to the welfare state. By approaching the subject matter in this way the thesis has not only been able to redress the gender dimension of Post-Fordism but also to begin to fill the other gaps in Post-Fordist theory relating to the regime of accumulation (production flexibility, labour flexibility and empirical evidence).

Chapter three was concerned with exploring aspects of feminist theory and labour markets

in order to facilitate a discussion of the possible implications of Post-Fordism for gender relations. By drawing upon various aspects of feminist theory in chapter three it was explained that Post-Fordism and the subsequent search for labour flexibility has profound implications for the labour force and in particular for gender relations which can be classified into three broad areas of debate: numerical flexibility; functional flexibility; and technological change.

Various feminist authors such as Christopherson (1989), Walby (1989) and McDowell (1991) agree with Post-Fordist authors (Leborgne and Lipietz, 1988, 1990) that the Post-Fordist economy is accompanied by an expansion of numerical flexibility, suggesting that part-time work, temporary work and homeworking have expanded in recent years. Like Leborgne and Lipietz, they argue that the majority of these workers tend to be women who consequently experience the drawbacks of the peripheral labour market. The work of Feminist authors such as Pollert (1981), Rigg and Miller (1991) and Westwood (1984) can be drawn upon to develop the work of Leborgne and Lipietz (1988, 1990) further. They provide explanations for women constituting the majority of those employed in numerically flexible jobs, pointing to women's role in domestic and caring tasks as the main reasons. Other feminist authors (such as Finch, 1989, McDowell, 1991, and Lewis, 1992) argue that welfare provision plays an important role in this process. They suggest that the lower the level of welfare provision, the greater the likelihood that women will be employed in numerically flexible jobs.

Another way in which chapter three explained the Post-Fordist search for greater labour flexibility is by the expansion of functional flexibility. It was pointed out throughout the chapter that the term functional flexibility is more complex than the Post-Fordist authors of Leborgne and Lipietz (1988, 1990) indicate. As commentators such as Dawson and Webb (1989), Tomaney (1990) and Buchanan (1994) conclude, the search for functional flexibility within the Post-Fordist economy can be achieved by job enlargement as well as job enrichment. They then suggest that the way in which work is reorganised within the Post-Fordist economy is one factor which determines if jobs are enlarged or enriched and use the introduction of team working as an example of this. They argue that if certain models of team working are implemented, particularly those based on the Swedish prototype, the workforce will experience the benefits of job enrichment. However, they suggest that if certain cultural changes do not accompany this type of team working or other variants of team working (such as the Japanese model) are installed, the workforce may instead experience the drawbacks of job enlargement.

Within chapter three it was also revealed that the way in which work is reorganised and

therefore the extent to which the workforce experience either job enlargement or job enrichment may be determined by gender. Commentators such as Wood (1986), Elger (1991) and Dawson and Webb (1989) suggest that women's jobs tend to be enlarged and men's jobs enriched, something which Jenson (1989b), Cockburn (1983, 1985) and Truman and Keating (1987) explain by the concept of the social construction of skill. It is therefore suggested that work will be reorganised in different ways according to the gender of the workforce. If the workforce are predominantly female, work is more likely to be reorganised in a way which enlarges rather than enriches the jobs of the workforce.

The final issue discussed in chapter three concerns technological change. Various authors (Cockburn, 1985, Truman and Keating 1987 and Wajcman, 1991) agree with Leborgne and Lipietz (1988, 1990) that the new technology utilised in the Post-Fordist economy can be used in a way which upskills some jobs and deskills others. Buchanan (1994) and Tomaney (1991) are again involved in this debate, they argue that the way in which technology is utilised and therefore the resulting implications for the workforce is determined by the way work is reorganised. They exemplify this by an examination of the introduction of team working, suggesting that technological change is central to the Japanese model of team working and is utilised in a way which deskills. They conclude that Swedish models of team working, on the other hand, do not involve such a high degree of technological innovation but if technological change does accompany this model of team working and certain cultural changes take place, it is used in a way which upskills the jobs of the workforce.

Other authors such as Chiesi (1992), Cockburn (1985), Crewe (1990) and Zeitlin (1992) suggest that the way in which Post-Fordist technology is used is influenced by the gender of the workforce and that this results in a deskilling of women's jobs and an upskilling of men's jobs. Explanations for this are provided by Cockburn (1983, 1985) and Wajcman (1991) and are centred around the way in which technology is gendered and socially constructed. It is therefore suggested in chapter three that work will be reorganised and technology utilised in a way which deskills the jobs of women and upskills the jobs of men.

A number of empirical questions were outlined in chapter four to enable the theoretical arguments arising from the amalgamation of aspects of feminist and Post-Fordist theory to be tested in the Nottinghamshire clothing industry. These questions were customised to the specific nature of the implementation of team working in the clothing industry in four main ways. Firstly, on the few occasions where the feminist theoretical arguments concerning numerical flexibility are drawn from an industrial analysis, they tend to be derived from the tertiary rather than the manufacturing sector. The empirical questions had to be altered

slightly so as to be meaningful in a manufacturing context. Secondly, the theoretical arguments concerning functional flexibility, in particular the debate around job enrichment and job enlargement, are derived from studies of industrial sectors which have a mixed workforce in terms of gender. The fact that the clothing industry has a predominantly female workforce had to be taken into account when devising the empirical questions. Thirdly, the models of team working implemented in the Nottinghamshire clothing industry cannot easily be distinguished into those operating either Swedish and Japanese prototypes. Instead they are categorised into those operating models based on either the Kanban or TSS principles and therefore the empirical questions had to reflect this. Finally, the implications of technological change cannot easily be distinguished from other aspects of the change of production systems. The empirical questions concerning technology were therefore incorporated into the discussion about functional flexibility.

In order to examine the extent to which Post-Fordism leads to an expansion of numerical flexibility which has damaging effects for female labour, chapter five explored the extent to which team working stimulates an expansion of numerically flexible working practices and the implications of this for female employees working in teams. The way in which this affects women who have caring responsibilities was investigated and the extent to which team working facilitates flexible working arrangements and the provision of childcare facilities thereby mediating the constraints faced by working women was discussed.

It was explained in chapter five that the hypothesis that Post-Fordism leads to an expansion of numerical flexibility, which is consequently damaging to women can be refuted, at least in the context of the implementation of team working in the clothing industry. The level of redundancies and the availability of part-time working arrangements were investigated as indicators of numerical flexibility. It was shown that in the short term, as companies operate team working alongside more traditional methods of manufacturing, team workers are less likely to be made redundant and therefore treated in a numerically flexible manner. The availability of part-time work on the production line appears to be limited as it causes blockages in the production process, however team work seems to render the employment of operatives on a part-time basis even more difficult. Thus in the majority of companies team members are less likely to be in a position to work part-time than on the traditional production line. In any case it was explained that part-time work, in the clothing industry is not necessarily utilised to achieve numerical flexibility.

It was pointed out in chapter five that the model of team working together with wider cultural changes and managerial attitudes towards women and work determine the extent to which

managers are willing to allow their employees to work on a part-time basis. The TSS model of team working involves extensive investment in technological change. In order to maximise machine utilisation thereby justifying the large amount of financial investment required, any work practices such as part-time work which mean that machines are left idle for unnecessary periods during each working day are restricted. It is therefore rare that TSS companies offer part-time working opportunities. It has been revealed that this will only occur in companies with managers who recognise the importance of female labour to their company and their requirement for part-time work. Moreover, even in these cases the number of part-time positions will be extremely restricted.

The Kanban model of team working, on the other hand, does not involve such technological investment, and can render the employment of operatives on a part-time basis easier than on the traditional production line. However, this is only the case if team working is implemented alongside wider cultural changes, primarily involving the provision of comprehensive social and technical training. In these circumstances team members become multi-skilled and recognise the importance of working as a team and consequently are both able and willing to cover for their part-time colleagues when they are absent. This means that the blockages caused by part-time workers which are experienced on the traditional production line are eliminated. However, it has been seen that due to traditional managerial attitudes towards training and stereotypical perceptions of women and work the number of Kanban companies which adopt these wider cultural changes involving training provision are limited and as a result most Kanban companies avoid employing team members on a part-time basis.

The latter part of chapter five explained that the reduction in the availability of part-time work in the majority of companies which have introduced team working means that team members are more likely to work full-time, a factor which causes difficulties to many women employees, particularly to working mothers who have the main responsibility for childcare. This is exacerbated by the fact that managers of companies operating team working refuse to encourage either flexible working arrangements or childcare facilities, both of which would help mediate the adverse implications of the reduction in part-time work.

Chapter five therefore concludes that Post-Fordism, at least in the context of the implementation of team working in the clothing industry, does not lead to an expansion of numerical flexibility. Moreover, it is a decrease in the availability of part-time work rather than an increase in it which is damaging to female operatives working in teams.

As technological change cannot easily be separated from other aspects of change in production systems, the theoretical arguments concerning functional flexibility and technological change were combined and then empirically tested in chapter six. The principal aim of the chapter was to test the hypothesis that *'models of team working which lead to job enlargement and which utilise new technology in a way which deskills are more likely to be implemented than those which lead to job enrichment and which utilise technology in a way which upskills when the workforce are predominantly female'*. In order to test this hypothesis the way in which team working changes the quantity and status of the tasks undertaken by operatives was examined and the role that technological change plays in this process was explored, thereby enabling a discussion of the implications for operatives working in a team working environment. The way in which the model of team working plays a part in this process was explored and the importance of gender in determining that model was discussed.

Chapter six revealed that some aspects of the hypothesis are correct but challenged the simplicity of the proposition. It was explained that team working does alter the quantity and status of tasks performed by operatives. Team members often carry out a wider range of similar status tasks and in some cases team members also perform higher status tasks involving a greater degree of responsibility. Moreover, the system of team working does play a part in this process. It influences the way in which technology is utilised and the degree of cultural change (particularly the method of governance and the provision of training) which together determine the precise way in which operatives are affected by team working.

Two broad systems of team working have been introduced, the TSS model and the Kanban prototype. Although both are derived from Japanese organisational principles they have different implications for the workforce. They do not have a single effect on the workforce, enlarging their jobs and utilising technology in a way which deskills as existing literature suggests. The TSS model of team working means that operatives are more likely to experience job enlargement. Technological change which deskills each sewing operation is central to this system and operatives are required to move frequently between prescribed workstations, thereby performing a larger quantity of sewing tasks, each of which has a lower degree of skill content. Moreover, the TSS model is unlikely to lead to operatives performing higher status tasks, involving a greater degree of responsibility. It is not conducive to wider cultural changes, management style is likely to remain based on direct control and although training is provided it does not focus on increasing the devolution of responsibility to team members.

The Kanban model of team working similarly means that operatives are expected to perform a wider range of similar status tasks, thereby experiencing job enlargement. However the degree of job enlargement is less severe than in the TSS model, operatives are expected to change operations far less frequently and technological change which deskills tasks is not an essential feature. The Kanban model of team working is more likely to lead to operatives performing higher status tasks. It is more conducive to cultural change, facilitating a change in management style from direct control to responsible autonomy and enabling the provision of training which focuses on devolving responsibility to an operative level.

However it was explained in chapter six that stereotypical perceptions of women, work and technology limit the degree of this cultural change, even in the companies operating a Kanban model of team working. As the workforce in the clothing industry are predominantly female, stereotypical perceptions of gender mean that changes in management style are more likely to be resisted and comprehensive training provision is often avoided, thereby limiting the degree of responsibility devolved to team members. Moreover on the occasions when technological change does take place in companies operating a Kanban model, the gendering of technology means that deskilling of individual tasks occurs. In a limited number of companies, whose managers refute these stereotypical perceptions of gender, operatives gain a greater degree of responsibility but even in these companies the gendering of technology and traditional managerial culture are so strong that worker empowerment is limited.

Chapter six then examined the implications of these different systems of team working and the accompanying cultural changes for the workforce. It revealed that distinctions in terms of job enlargement and deskilling versus job enrichment and upskilling are blurred and brought the implied drawbacks and benefits of the respective terms into doubt. It revealed that job enlargement and deskilling can be experienced alongside job enrichment and upskilling and that each has benefits and drawbacks for the workforce. Both the Kanban and TSS systems of team working lead to a degree of job enlargement whereby workers perform a wider range of similar status tasks. Deskilling which results from technological change is central to the TSS model but can also occur in companies operating the Kanban system. However, contrary to the claims of existing literature, team members can benefit from this job enlargement, even if technological change deskills operations. They enjoy a greater variety of work and find work more interesting. However, they simultaneously experience drawbacks, primarily concerned with labour intensification.

Kanban team members additionally experience job enrichment, performing tasks which

require a greater degree of responsibility. Although this job enrichment benefits the workforce, as existing literature suggests, it can also be detrimental leading to further labour intensification if greater financial remuneration or improved chances of promotion are absent.

Chapter six therefore concludes that the way in which the jobs of the workforce are affected by team working is determined by the model of team working, together with accompanying cultural changes, which are in turn determined by stereotypical perceptions of gender relations. However, it also explains that the implications of the different systems of team working are not as straight forward as the hypothesis suggests and cannot be dichotomised into such simplistic either/or terms.

By incorporating aspects of feminist theory into Post-Fordist theory and testing this outcome empirically in the Nottinghamshire clothing industry, this thesis has contributed to knowledge in this area of research. It has not only been able to fill the gaps in Leborgne and Lipietz's model of Post-Fordism with respect to gender relations but has also been able to contribute to the wider theoretical debate concerning the Post-Fordist regime of accumulation. Thereby beginning to fill the gaps in Post-Fordist theory which were outlined in table 3, chapter two.

This thesis has contributed to the gaps in existing Post-Fordist theory in four principal ways. The first contribution that the thesis has made concerns production flexibility. Much of the existing literature concentrates upon the way in which production flexibility is achieved by technological innovation. With the use of new technologies, such as CNC, FMS, CAD and CAM facilitating the small batch production of semi-customised commodities, which can be altered quickly to respond to changes in consumer demand. However, the evidence provided in this thesis has revealed that the production flexibility required within the Post-Fordist economy can not only be achieved by technological change but also by alterations in the method of work organisation. New forms of work organisation can involve the use of new technology but do not necessarily do so.

In an attempt to achieve production flexibility, changes in the method of work organisation based on team working, have occurred in the clothing industry. However, not all systems of team working involve the use of new technology. It is true that the TSS model requires heavy investment in technological innovation which is geared towards achieving maximum productive flexibility. However, the Kanban style of team working avoids technological innovation of this nature, instead emphasising the use of operative skills to achieve flexibility. This reveals that the production flexibility sought under Post-Fordism is not necessarily led by technological pressures of change but also by changes in workforce skills.

The second contribution that this thesis has made to the existing Post-Fordist debate concerns labour flexibility. Post-Fordist literature, particularly the work of Leborgne and Lipietz (1988, 1990) explores the interaction between the attainment of production and labour flexibility, examining the implications for the labour force. They suggest that the search for flexibility can lead to either functional flexibility which is beneficial to the labour force via job enrichment or numerical flexibility which is detrimental, leading to 'hire and fire' work practices. However, the evidence provided in this thesis suggests that the link between the search for production and labour flexibility is more complex and supplements this particular discussion in three different ways.

Firstly, while the thesis acknowledges that numerical flexibility, which is generally detrimental to the workforce, can prevail, it explains that this is less prevalent in the manufacturing sector. It also explains that functional flexibility does not just lead to job enrichment as existing Post-Fordist literature indicates but can also lead to job enlargement.

Secondly, the thesis suggests that the labour force implications of functional flexibility are not as straight forward as the Post-Fordist literature indicates, simply having a beneficial effect on the workforce. Both the job enlargement and enrichment resulting from the search for functional flexibility can benefit the workforce but can also have drawbacks too.

Thirdly, the thesis provides explanations for the way in which the search for flexibility affects the workforce. Existing Post-Fordist theory explains the circumstances which lead to the existence of numerical and/or functional flexibility but only in passing and not in any great detail. However, this thesis provides a detailed explanation of the way in which the search for flexibility affects the workforce, outlining the circumstances which give rise to the existence of job enrichment and/or enlargement, particularly in terms of the nature of the system of work organisation, the presence of technological innovation, and the degree of accompanying cultural change.

Another contribution made by this thesis relates to the provision of empirical evidence. Existing Post-Fordist literature fails to provide supporting empirical evidence of the way in which various models of work reorganisation achieve either production or labour flexibility. Leborgne and Lipietz (1988, 1990) suggest that Post-Fordism can take a variety of forms in different geographical localities but fail to provide supporting empirical evidence. The empirical investigation undertaken for this thesis begins to redress this, providing detailed evidence of the way in which different models of team working achieve flexibility in the Nottinghamshire clothing industry. However, this is only one step in the right direction.

Substantially more empirical research is required for a more detailed understanding of the way in which the Post-Fordist search for flexibility is occurring in different localities and sectors. Detailed empirical research of the way in which team working achieves flexibility in other industrial sectors is required, as is empirical research into the way in which other models of work organisation such as industrial districts achieve both production and labour flexibility.

The final and arguably most important contribution that this thesis has made to the Post-Fordist debate relates to the incorporation of a gender dimension. Existing Post-Fordist theory mentions gender in passing, explaining that women may be subjected to the disadvantages of numerical flexibility, while their male counterparts benefit from the job enrichment associated with functional flexibility. However, this issue is rarely elaborated upon and detailed explanations and empirical evidence are largely absent. This thesis has filled this gap in existing theoretical knowledge, exploring, in detail, how gender plays a part in the search for flexibility. The thesis has explained that the way in which the workforce are affected by the search for flexibility cannot easily be dichotomised and is determined by the system of work reorganisation and the accompanying cultural change, which are in turn determined by gender.

The one gap in Leborgne and Lipietz's model of Post-Fordism which this thesis has been unable to fill relates to the mode of regulation. Leborgne and Lipietz (1988, 1990) suggest that regulation is the backbone of the Regulationist account of Post-Fordism but pay little attention to this area of research. It has never been the intention of this thesis to research or discuss the Post-Fordist mode of regulation but to intelligibly add a gender dimension to the restructuring debate by focusing on the regime of accumulation. The author acknowledges that the gap in Post-Fordist research concerning the regulatory mechanisms is important and discusses this inadequacy in chapter two. As Tickell and Peck (1995) rightly point out, the Regulationist perspective of Post-Fordism is flawed without an examination of the mode of regulation. Some progress has recently been made in this direction by authors such as Jessop (1993, 1995), Bakshi *et al.* (1995), Painter and Goodwin (1995) and Tickell and Peck (1995). The work of Bakshi *et al.* is particularly important in the context of this thesis. These authors have begun to explore the gendered and racialised character of the welfare state and the way in which it is currently being redefined. An expansion of this research, in the future, to encompass wider regulatory mechanisms, such as the media etc., combined with the findings of this thesis will therefore facilitate a wider, more comprehensive understanding of the role which gender plays in the Post-Fordist economy, moving beyond

a discussion of the regime of accumulation to incorporate the mode of regulation too.

The evidence provided in this thesis has not only contributed to theoretical knowledge in this area but also has policy implications. This research has implications for two key groups: a) for organisations which are responsible for implementing and/or funding the implementation of team working; and b) for individuals working in companies which have introduced team working or are considering doing so in the future.

The knowledge generated by this thesis will prove useful to both of these groups. Organisations which are responsible for implementing and/or funding the implementation of team working can use this research to develop models of team working which generate maximum benefits at a workforce, as well as at company level. While individuals working in companies which have introduced team working or are considering doing so in the future can be reassured that if the model of good practice resulting from this research is taken on board by practitioners as well as company executives, the benefits of working in teams will outweigh the disadvantages.

Certain lessons can be learned from the experiences of the companies researched for this thesis. The Kanban model of team working is more likely to derive maximum benefits to the workforce than the TSS prototype, it concentrates on operative skills rather than technological change and does not lead to a deskilling of operative tasks to the extent that the TSS model does. The Kanban model of team working facilitates wider cultural changes based on a change in management style and the provision of training which are both geared towards enabling a devolution of responsibility to an operative level, allowing team members to enjoy a greater degree of discretion and autonomy. However, if the resulting wider job descriptions are not accompanied by financial remuneration, a fairer payment system and opportunities for career progression, the benefits to the workforce will be limited. A particularly important advantage of this model of team working is that, accompanied by training provision, it facilitates a greater provision of part-time work, which is especially useful for female employees with childcare responsibilities.

However, it is clear that the Kanban model alone cannot derive these benefits to the workforce. Although it is more amenable to these wider culture changes, it does not necessarily do so. The Kanban system of team working can be implemented without the wider cultural changes, and without financial remuneration, a fairer payment system or greater promotion prospects and if it is, the benefits to the workforce will be limited. Moreover, this situation is more likely to occur with a female workforce. Stereotypical

perceptions of women, skills, technology and work often prevent these wider cultural changes from being adopted.

Various organisations and institutions are currently involved in implementing team working in the UK manufacturing sector and, in fact, the Nottinghamshire Work and Technology Programme, which funded this piece of research, is continuing to seek competitiveness for clothing and knitwear firms through the development and dissemination of team working. The way in which organisations such as the Nottinghamshire Work and Technology implement team working has widespread implications for female employees. This research has revealed the existence of a model of good practice which must be adhered to if female employees are to gain maximum benefits from working in teams. The Kanban model of team working must be implemented, alongside cultural changes based on alterations in the method of governance and the provision of comprehensive training geared towards increasing worker discretion. Moreover, financial remuneration, a fairer payment system and career progression must be encouraged.

However it is clear from the evidence provided in this thesis that unless wider societal changes take place, regarding gender relations at work, the degree of these cultural changes and therefore the likelihood of this model of good practice being introduced will be limited when the employees are female.

**APPENDIX ONE: CHARACTERISTICS OF THE SAMPLE OF COMPANIES
AND INTERVIEWEES**

Table 1. Number of Workers Employed in the Companies by Sex

Sex of Employees	All companies		Production Line		Team Work	
	Number	%	Number	%	Number	%
Male	744	15	202	12	542	17
Female	4160	85	1494	88	2666	83
Total	4904	100	1696	100	3208	100

Table 2. Number of Companies Selected to Form the Sample

Production Line	17
Team Work	16
Total	33

Table 3. Location of the Sample of Companies

Region	All Companies		Production Line		Team Work	
	Number	%	Number	%	Number	%
Avon	1	3	-	-	1	6
Derbyshire	1	3	-	-	1	6
Lancashire	1	3	-	-	1	6
Nottinghamshire	25	76	15	88	10	63
Staffordshire	1	3	-	-	1	6
Yorkshire	4	12	2	12	2	13
Total	33	100	17	100	16	100

Table 4. Distribution of Companies by Principal Product Type

Product Group	All Companies		Production Line		Team Work	
	Number of Firms	%	Number of Firms	%	Number of Firms	%
Childrenswear	1	3	-	-	1	6
Ladieswear	6	19	2	11	4	25
Menswear	3	9	3	18	-	-
Leisurewear	8	24	5	29	3	19
Knitwear	1	3	1	6	-	-
Underwear/ Lingerie	8	24	3	18	5	32
Nightwear	1	3	1	6	-	-
Workwear	2	6	1	6	1	6
Hosiery	2	6	1	6	1	6
Non-Garment	1	3	-	-	1	6
Total	33	100	17	100	16	100

Table 5. Size of Companies

Number of Employees per Company	All Companies		Production Line		Team Work	
	Number of Firms	%	Number of Firms	%	Number of Firms	%
1-4	-	-	-	-	-	-
5-19	2	6	2	12	-	-
20-49	6	18	6	35	-	-
50-199	14	43	6	35	8	50
200 plus	11	33	3	18	8	50
Total	33	100	17	100	16	100

Table 6: Highest Qualifications of Questionnaire Respondents

Qualifications	All Companies		Production Line		Team Work	
	Number of Respondents	%	Number of Respondents	%	Number of Respondents	%
None	79	81	51	86	28	72
NVQ	2	2	-	-	2	5
City & Guilds	2	2	1	2	1	3
BTEC	1	1	1	2	-	-
O'Level / GCSE	12	12	4	7	8	20
A'Level	2	2	2	3	-	-
Total	98	100	59	100	39	100

Table 7. Number and Types of Interviews Conducted

Type of Interview	Number of Companies (%)			Number of Interviews (%)		
	All Companies	Production Line	Team Work	All Companies	Production Line	Team Work
Operative Questionnaire	29 (100)	15 (52)	14 (48)	98 (100)	59 (60)	39 (40)
Operative Group Discussion	33 (100)	17 (52)	16 (48)	33 (100)	17 (52)	16 (48)
Management Interview	33 (100)	17 (52)	16 (48)	33 (100)	17 (52)	16 (48)

Table 8. Age Group of Questionnaire Respondents (%)

Age Group	16-25	26-35	36-45	46-55	56-65	Total
All Companies	28 (29)	26 (27)	18 (18)	22 (22)	4 (4)	98 (100)
Production Line	9 (15)	14 (24)	14 (24)	18 (30)	4 (7)	59 (100)
Team Work	19 (49)	12 (31)	4 (10)	4 (10)	-	39 (100)

Table 9. Length of Time Questionnaire Respondents Have Worked in the Industry

Years	All Companies		Production Line		Team Work	
	Number of Respondents	%	Number of Respondents	%	Number of Respondents	%
1-5	10	11	3	6	7	19
6-10	27	30	13	25	14	38
11-20	22	25	12	23	10	27
21-30	18	20	14	27	4	11
31-40	12	14	10	19	2	5
Total	89*	100	52*	100	37*	100

* 9 respondents did not reply to this question (7 on production line, 2 on team work)

Table 10. Average Length of Time Questionnaire Respondents Have Worked in the Industry (Years)

	Production Line	Team Work
Mode	21-30	6-10

Table 11. Length of Time Questionnaire Respondents Have Worked in Teams

Years	Number of Respondents	%
>1	7	18
1-2	18	47
3-4	12	32
5+	1	3
Total	38*	100

* 1 operative did not answer this question

Table 12. Sex of Managers Interviewed

Sex of Managers	All Companies		Production Line		Team Work	
	Number	%	Number	%	Number	%
Male	20	61	11	65	9	56
Female	13	39	6	35	7	44
Total	33	100	17	100	16	100

APPENDIX TWO: OPERATIVE QUESTIONNAIRES

- 1) Operative Questionnaire (for production line)
- 2) Operative Questionnaire (for team working)

OPERATIVE QUESTIONNAIRE (FOR PRODUCTION LINE)

This questionnaire is designed to help us assess the impact of production line work on your daily working life.

Please answer as many of the following questions as possible.
There are no right or wrong answers.

Nobody in the company will see your answers. All data collected is confidential.
Any report will not identify individuals.

HOW TO ANSWER THE QUESTIONNAIRE

Please answer the following statements by ticking one of the five boxes.

The *nearer* to a statement you tick, the *stronger* you agree with it.

Ticking the centre box means that you do not agree with either statement.

Example

Work is interesting Work is boring

This shows that the operative finds work interesting but does not strongly agree with the statement.

- | | |
|---|--|
| Work is interesting | <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> |
| Line working is good | <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> |
| I am multi-skilled | <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> |
| Being multi-skilled
would be beneficial
to me | <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> |
| I enjoy performing one
task all day | <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> |
| I would prefer more
variety at work | <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> |
| I understand my part in
making the garment | <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> |
| Quality is most important | <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> |
| I am always checking
quality | <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> |
| I feel personally
responsible for errors | <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> |
| I have to take notice of
what is going on | <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> |
| I solve production
problems | <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> |

Work is boring

Line working is bad

I have one good skill

Being multi-skilled
would benefit the company
more than me

Performing one task is
boring

I would not prefer more
variety at work

I do not understand my
part in making the garment

Speed is most important

I do not notice faults

Mistakes are not my
responsibility

Someone will know what
to do next

I do not solve production
problems

- I control my work
- We participate in setting production targets
- Production targets are reasonable
- Production targets create stress
- I feel pressurised by production targets
- I strive to reach production targets
- I work hard on the production line
- Working harder makes the day go quicker
- I am proud of what I achieve
- I am appreciated by the company
- Pay is predictable

I have no control over my work

Production targets are
set by management

Production targets are
much too high

I do not worry about
production targets

I do not care about
production targets

I am unconcerned about
production targets

I do not work hard on
the production line

Working harder makes you
tired

It does not matter what
I achieve

The company does not
appreciate me

Pay is unpredictable

- Piecework is the best payment system
- I work hard on piecework
- The operatives look after each other
- Working on a line is stressful
- I am too tired at the end of the day
- I feel irritable
- I do not have many aches and pains
- Sitting down is good
- Standing up would be better
- When I am off sick I feel guilty
- When another operative is off sick I resent it

Set wage is the best
payment system

I would work harder on
a set wage

Really you are on your own

I do not find line work
stressful

My tiredness at the end
of the day is okay

I feel calm

The aches and pains are
awful

Sitting down is bad

Standing would be worse

Sickness is just one of
those things

It does not matter to
me if an operative is
off sick

- | | | |
|--|--|---|
| Supervisors respect us | <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> | Supervisors think they know best |
| Supervisors let us get on with the job | <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> | Supervisors are always interfering |
| Management take notice of us | <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> | Management never listen |
| Management are approachable | <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> | Management are aloof |
| I understand my role in the company | <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> | I am not interested in my role in the company |
| I feel confident | <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> | I lack confidence |
| I want promotion | <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> | Promotion does not interest me |
| There will be opportunities for promotion here | <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> | I would have to leave to get promotion |
| My training is continuous | <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> | I finished training some time ago |
| I am loyal to the firm | <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> | A job is a job |

THANK-YOU FOR YOUR COOPERATION

PERSONAL DETAILS

Please answer the following questions to provide us with background information.
We do not require your name and address. All answers are confidential.

1. Sex: Male / Female
2. Are you registered disabled? YES / NO
3. Age.....
4. Please state what you consider to be your first language:
.....
5. Please list any qualifications you have, stating their grade
where appropriate:
.....
6. How long (approximately) have you worked on a production line?
.....
7. How many years experience do you have in the industry?
.....
8. Which machining skills do you currently have?
.....

OPERATIVE QUESTIONNAIRE (FOR TEAM WORKING)

This questionnaire is designed to help us assess the part that team work is playing in your daily working life.

Please answer as many of the following questions as possible.
There are no right or wrong answers.

Nobody in the company will see your answers. All data collected is confidential.
Any report will not identify individuals.

HOW TO ANSWER THE QUESTIONNAIRE

Please answer the following statements by ticking one of the five boxes.

The nearer to a statement you tick, the stronger you agree with it.

Ticking the centre box means that you do not agree with either statement.

Example

Work is interesting Work is boring

This shows that the operative finds work interesting but does not strongly agree with the statement.

- Work is interesting
- Line working is good
- I enjoy team work
- I am multi-skilled
- Being multi-skilled is beneficial to me
- I enjoy variety at work
- I understand my part in making the garment
- Quality is most important
- I am always checking quality
- I feel personally responsible for errors
- I have to take notice of what is going on
- I solve production problems

Work is boring

Line working is bad

I do not enjoy team work

I have one good skill

Being multi-skilled
benefits the company more
than me

I do not enjoy variety
at work

I do not understand my
part in making the
garment

Speed is most important

I do not notice faults

The team is responsible
for mistakes

Someone will know what
to do next

I do not solve production
problems

Working problems out in the team is satisfying

I control my work

We participate in setting production targets

Production targets are reasonable

Production targets create stress

I feel pressurised by production targets

I strive to reach production targets

I work harder in a team than on a production line

Working harder makes the day go quicker

I am proud of what the team achieve

I am appreciated by the company

I do not enjoy problem
solving in the team

I have no control over
my work

Production targets are
set by management

Production targets are
much too high

The team do not worry
about production targets

I do not care about
production targets

I am unconcerned about
production targets

I do not work harder in
a team than on a production line

Working harder makes you
tired

It does not matter what
the team do

The company does not
appreciate me

- I am better paid in a team
- Pay is predictable
- Piecework is the best payment system
- I work harder on piecework
- The team look after each other
- Working in a team is stressful
- I am too tired at the end of the day
- I feel irritable
- The aches and pains are better
- Standing up is good
- Sitting down is good
- When I am off sick I feel guilty

My pay is worse than on
the line

Pay is unpredictable

Set wage is the best
payment system

I work harder on a set
wage

Really you are on your own

I do not find team work
stressful

My tiredness at the end
of the day is okay

I feel calm

The aches and pains are
as bad as ever

Standing up is bad

Sitting down is bad

Sickness is just one of
those things

When a team member is off sick I resent it

Supervisors respect the team

Supervisors let us get on with the job

Management take notice of the team

Management are approachable

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I understand my role in the company

I feel confident

I want promotion

There will be opportunities for promotion here

It does not matter to me
if a team member is off
sick

Supervisors think they
know best

Supervisors are always
interfering

Management never listen

Management are aloof

I am not interested in
my role in the company

I lack confidence

Promotion does not
interest me

I would have to leave to
get promotion

My training is continuous I finished training some
time ago

My loyalty to the firm A job is a job
has grown

THANK-YOU FOR YOUR COOPERATION

PERSONAL DETAILS

Please answer the following questions to provide us with background information. We do not require your name and address. All answers are confidential.

1. Sex: Male / Female
2. Are you registered disabled? YES / NO
3. Age.....
4. Please state what you consider to be your first language:
.....
5. Please list any qualifications you have, stating their grade where appropriate:
.....
6. How long (approximately) have you worked in a team?
.....
7. Were you on line production before? YES/NO
8. Were you on piecerate before? YES/NO

9. How many years experience do you have in the industry?

.....

10. Which machining skills do you currently have?

.....

APPENDIX THREE: OPERATIVE GROUP RECALL SESSIONS

- 1) Interview schedule for operatives working on a production line
- 2) Interview schedule for operatives working in teams

**INTERVIEW SCHEDULE FOR GROUP RECALL SESSIONS WITH FEMALE
MACHINISTS WORKING ON A PRODUCTION LINE
(Schedule represents the broad outline of the discussions undertaken)**

Can you all introduce yourselves? How long have you worked in the industry? How many skills do you have?

1. Working Day

Can you tell me about your working day?

What time you do start?

What time do you finish?

Do you work part-time or full-time?

2. Quality

Who is responsible for quality?

3. Payment System

Method of payment

Are men paid more or less than you in this company?

4. Skills, Training and Technology

Methods of training, length of training

Breadth of skills: technical and non-technical

When broken, who repairs your sewing machine, you/mechanics etc.?

Are the mechanics male/female?

Do you think that you are capable of being a mechanic (with training)?

Are you treated the same as the men in this company?

Has any new technology been introduced? What is it?

How has it changed the job? Does it require more or less skill?

Who uses the new technology/machines?

Are you capable of using it?

When new equipment/machines are brought into the company do you get the chance to use them?

Do you get equal chance to use the machines as men?

Do men and women do the same jobs?

What jobs do men do, what jobs do women do?

Do you think that men are more or less skilled than you?

Are there any male machinists?

Do you think that men could do your job?

Do you feel that you could do the jobs that men do in this company?

5. Absenteeism and Labour Turnover

6. Relations with Management

Level of supervision and input from management

Role of supervisors

How are targets set and by whom?

7. Career Aspirations

Interest in becoming a supervisor/manager?

Interest in other areas, e.g. Cutting, design etc.?

Interest in further vocational education and training?

Are promotion opportunities available?

Do you think that women have the same opportunities for promotion as men in this company?

8. Childcare

Do you have any children?

In your household who has the main responsibility for looking after the children and doing the housework?

How do you cope working full-time and looking after children/doing housework?

Would you prefer to work part-time, Why?

Do you think childcare facilities are adequate?

Does this company provide childcare facilities?

Do you think the level of childcare, nurseries etc. has changed in the last few years? Has it improved or got worse?

9. Attitudes to Working Life

Image and reality of the industry

Is a job in a clothing firm a good choice for young people?

10. Sexual Discrimination

Do you face any sexual discrimination at work?

Are you treated the same as men in this company?

INTERVIEW SCHEDULE FOR GROUP RECALL SESSIONS WITH FEMALE MACHINISTS WORKING IN TEAMS

(Schedule represents the broad outline of the discussions undertaken)

Can you all introduce yourselves? How long have you worked here?
How long have you been on team working? Were you on the production line before? How many skills do you have? How were you chosen for team working?

1. Working Day

Can you tell me about your working day?

What time you do start?

What time do you finish?

Do you work part-time or full-time?

Any changes since team working? Why?

2. Quality

Who is responsible for quality?

Changes since team working?

3. Payment System

What method of payment are you on? Changed since team working?

Are men paid more or less than you? Changed since team working?

4. Skills, Training and Technology

Methods of training, length of training

Breadth of skills: technical and non-technical

Have you got more or less skills under team working?

Before team working, when broken, who repaired your sewing machine, you/mechanics etc.?

What about now after team working?

Are the mechanics male/female?

Do you think that you are capable of being a mechanic (with training)?

Are you treated the same as men in this company? Has team working changed this at all?

Has any new technology been introduced? What is it?

How has it changed the job? Does it require more or less skill?

Who uses the new technology/machines?

Are you capable of using it?

Before team working, when new equipment/machines were brought into the company did you get the chance to use them? What about now after team working?

Do you get equal chance to use the machines as men - before team working and after?

Before team working did men and women do the same jobs?

What jobs did men do, what jobs did women do?

What about now under team working, has this changed? Do men and women do the same jobs now? What jobs do men do now? What jobs do women do now?

Before team working do you think that men were more or less skilled than you?

What about now after team working, do you think that men are more or less skilled than you?

Before team working were there any male machinists?

What about now after team working are there any male machinists?

Do you think that men will be more likely to become machinists under line production or team working? Does it make any difference?

Before team working do you think that men could have done your job?

What about now after team working, do you think that men can do your job now?

Do you think that men can work in teams like you are doing now?

Do you feel that you could do the jobs that men do in this company?

5. Absenteeism and Labour Turnover

6. Relations with Management

Level of supervision and input from management

Has the role of supervisors changed since the introduction of team working?

How are targets set and by whom?

What happens when there is a style change?

How much discretion do you have?

Do you have team meetings?

Who calls the team meetings?

If you want to call a meeting to discuss a certain problem is it possible?

Did you have team meetings before team working?

7. Career Aspirations

Interest in becoming a supervisor/manager?

Interest in other areas, e.g. Cutting, design etc?

Interest in further vocational education and training?

Are promotion opportunities available? Before team working and now?

Before team working, do you think that women had the same opportunities for promotion as men in this company? What about now after team working?

8. Childcare

Do you have any children?

In your household who has the main responsibility for looking after the children and doing the housework?

How do you cope working full-time and looking after children/doing housework?

Has team working made this more or less difficult?

Would you prefer to work part-time? Why?

Do you think childcare facilities are adequate?

Before team working did this company provide childcare facilities?

What about now after the introduction of team working?

Do you think the level of childcare, nurseries etc. has changed in the last few years? Has it improved or got worse?

9. Attitudes to Working Life

Image and reality of the industry

Is a job in a clothing firm a good choice for young people?

Does team working have any effect on the image of the industry?

10. Sexual Discrimination

Do you face any sexual discrimination at work?

Are you treated the same as men in this company?

Has this changed with team working?

APPENDIX FOUR: INFORMAL SEMI-STRUCTURED INTERVIEWS WITH MANAGEMENT

- 1) Schedule for informal semi-structured interview with managers of production line companies
- 2) Schedule for informal semi-structured interview with managers of team working companies

**SCHEDULE FOR INFORMAL SEMI-STRUCTURED INTERVIEW WITH
MANAGEMENT (PRODUCTION LINE)
(Schedule represents the broad outline of questions asked)**

What are your main products?

How many people do you employ?

What proportion of your employees would you say are female?

Do your employees work full-time or part-time?

Do you have flexible working hours, i.e. part-time, job share, flexitime etc.?

Do you have any problems employing a predominantly female workforce?

Would you anticipate similar problems with a male workforce?

Have you ever thought about providing childcare facilities?

Do women and men tend to do different jobs in this company? Or do they do the same jobs?

The majority of machinists are female, why do you think that this is so?

Have you ever had male machinists? Any problems? How do they feel about working in an predominantly female environment?

What do you think about male machinists? Are they better or worse than female machinists?
Can men make good machinists?

Is labour turnover high/low?

How often have you made machinists redundant in the last few years?

Why traditionally is there a separate post for mechanics? Why is it that machinists do not repair their own machines?

Do the mechanics here tend to be male or female? Why?

Do you feel that women would make good mechanics? Would they want to be mechanics?

What new technology has been introduced in recent years?
Can you describe it?

How has the new technology changed the job? Is it more or less skilled?

Who uses the new machines/technology?

Are women capable of using it?

Do you think that women and men have the same attitudes and relationships to technology and machines?

Do you think that women are more suited to certain jobs than men and vice versa?

Do you think that women can do the same jobs as men to the same standards, given the same training?

How skilled would you say your workers are?

What do you think about men and women working together? Is it possible?

Are women capable of doing highly skilled work?
i.e. are they capable of becoming senior managers etc.?

Women managers tend to manage women, do you think that women are also capable of managing men?

What training opportunities are available to your employees? At which levels is training available?

Do women in this company get the same training opportunities as men?

What promotion opportunities are available in this company?

Can machinists become managers? What routes are available?

Is the company doing anything to help facilitate this kind of career progression?

Do women get the same promotion opportunities as men?

**SCHEDULE FOR INFORMAL SEMI-STRUCTURED INTERVIEW WITH
MANAGEMENT (TEAM WORKING)**

(Schedule represents the broad outline of questions asked)

Can you describe your system of team working to me?

What type of payment system do you have? Changed since team working?

Why did you introduce team working?

How did you introduce team working? Who did you get advice from?

How were the team members chosen?

How did the workers respond to the introduction of team working?

How do you think team working has affected the workforce?

What benefits has team working provided to the company?

What happens when there is a change of styles? How much say do machinists have?
Changed since team working?

Have you experienced any problems with team working?

Would you recommend team working to other companies?

How many people do you have working on team working?

How many people do you employ altogether?

What proportion of your employees would you say are female?

Do your employees work full-time or part-time? Changed since team working?

Do you have flexible working hours, i.e. part-time, job share, flexitime etc.?
Changed since team working?

Do you have any problems employing a predominantly female workforce?

Would you anticipate similar problems with a male workforce?

Have you ever thought about providing childcare facilities? Changed since team working?

Do women and men tend to do different jobs in this company? Or do they do the same jobs?
Changed since team working?

The majority of machinists are female, why do you think that this is so?

Have you ever had male machinists? Any problems? How do they feel about working in a
predominantly female environment?

What do you think about male machinists, are they better or worse than female machinists?

Can men make good machinists? Does team working change this?

Is labour turnover high/low? Changed since team working?

How often have you made machinists redundant in the last few years? Have these come from the production line or from team working?

Why traditionally is there a separate post for mechanics? Why is it that machinists don't repair their own machines? Does team working change this?

Do the mechanics here tend to be male or female? Why?

Do you feel that women would make good mechanics? Would they want to be mechanics?

What new technology has been introduced in recent years? Changed since team working? Can you describe it?

How has the new technology changed the job? Is it more or less skilled?

Who uses the new machines/technology?

Are women capable of using it?

Do you think that women and men have the same attitudes and relationships to technology and machines?

Do you think that women are more suited to certain jobs than men and vice versa?

Do you think that women can do the same jobs as men to the same standards, given the same training?

What do you think about men and women working together? Is it possible? Could you have mixed sex teams? i.e. males and females working together within a team?

Do you think that different skills are needed for a team worker and for a line worker?

How do the skills differ?

Are women capable of doing highly skilled work?
i.e. are they capable of becoming senior managers etc.?

Women managers tend to manage women, do you think that women are also capable of managing men?

What training opportunities are available to your employees? At which levels is training available? Changed since team working?

What training did the team members receive?

What training in terms of problem solving/communication skills etc.?

Did supervisors and managers receive any training before the implementation of team working?

Has the role of the supervisor changed since the implementation of team working?

Do women in this company get the same training opportunities as men?

What promotion opportunities are available in this company? Changed since team working?

Can machinists become managers? What routes are available?

Is the company doing anything to help facilitate this kind of career progression?

Do women get the same promotion opportunities as men?

APPENDIX FIVE: RESULTS OF OPERATIVE QUESTIONNAIRE

Table 1. Multi-Skilling of Operatives

Statement 1	Strongly agree with statement 1	Agree with statement 1	Do not agree with statement 1 or 2	Agree with statement 2	Strongly agree with statement 2	Statement 2
I am multi-skilled						I have one good skill
Number of Respondents on Production Line (%)	34 (57)	3 (5)	11 (19)	1 (2)	10 (17)	
Number of Respondents on Team Work (%)	22 (56)	12 (31)	4 (10)	-	1 (3)	

Table 2. Current Machining Skills of Operatives

Number of machining skills	All Companies		Production Line		Team Work	
	Number of Respondents	%	Number of Respondents	%	Number of Respondents	%
One	14	16	13	26	1	3
Two	15	17	14	28	1	3
Three	10	11	5	10	5	13
Four	15	17	3	6	12	32
Five	11	13	8	16	3	8
Six	9	10	1	2	8	21
Seven	9	10	5	10	4	10
Eight plus	5	6	1	2	4	10
Total*	88	100	50	100	38	100

* 10 respondents did not reply to this question (9 on production line, 1 on team work)

Table 3. Checking the Quality of Production

Statement 1	Strongly agree with statement 1	Agree with statement 1	Do not agree with statement 1 or 2	Agree with statement 2	Strongly agree with statement 2	Statement 2
I am always checking quality						I do not notice faults
Number of Respondents on Production Line (%)	28 (48)	22 (37)	7 (12)	-	2 (3)	
Number of Respondents on Team Work (%)	22 (56)	13 (33)	3 (8)	-	1 (3)	

Table 4. The Importance of Quality and Speed

Statement 1	Strongly agree with statement 1	Agree with statement 1	Do not agree with statement 1 or 2	Agree with statement 2	Strongly agree with statement 2	Statement 2
Quality is most important						Speed is most important
Number of Respondents on Production Line (%)	32 (54)	4 (7)	17 (29)	1 (2)	5 (8)	
Number of Respondents on Team Work (%)	23 (59)	4 (10)	12 (31)	-	-	

Table 5. Attitude of Supervisors Towards Operatives

Statement 1 Supervisors respect us/the team	Strongly agree with statement 1	Agree with statement 1	Do not agree with statement 1 or 2	Agree with statement 2	Strongly agree with statement 2	Statement 2 Supervisors think they know best
Number of Respondents on Production Line (%)	13 (22)	14 (24)	22 (37)	1 (2)	9 (15)	
Number of Respondents on Team Work (%)	12 (31)	10 (26)	6 (15)	3 (8)	8 (20)	

Table 6. Supervisor Intervention

Statement 1 Supervisors let us get on with the job	Strongly agree with statement 1	Agree with statement 1	Do not agree with statement 1 or 2	Agree with statement 2	Strongly agree with statement 2	Statement 2 Supervisors are always interfering
Number of Respondents on Production Line (%)	33 (56)	7 (12)	17 (28)	1 (2)	1 (2)	
Number of Respondents on Team Work (%)	22 (56)	8 (21)	6 (15)	1 (3)	2 (5)	

Table 7. Approachableness of Management

Statement 1 Management are approachable	Strongly agree with statement 1	Agree with statement 1	Do not agree with statement 1 or 2	Agree with statement 2	Strongly agree with statement 2	Statement 2 Management are aloof
Number of Respondents on Production Line (%)	24 (41)	15 (25)	6 (10)	4 (7)	10 (17)	
Number of Respondents on Team Work (%)	15 (39)	13 (33)	2 (5)	4 (10)	5 (13)	

Table 8. Attitude of Management Towards Operatives

Statement 1 Management take notice of us/the team	Strongly agree with statement 1	Agree with statement 1	Do not agree with statement 1 or 2	Agree with statement 2	Strongly agree with statement 2	Statement 2 Management never listen
Number of Respondents on Production Line (%)	10 (17)	13 (22)	15 (25)	5 (9)	16 (27)	
Number of Respondents on Team Work (%)	7 (18)	8 (21)	11 (28)	9 (23)	4 (10)	

Table 9. Who Benefits from Multi-Skilling?

Statement 1 Being multi-skilled is beneficial to me	Strongly agree with statement 1	Agree with statement 1	Do not agree with statement 1 or 2	Agree with statement 2	Strongly agree with statement 2	Statement 2 Being multi-skilled benefits the company more than me
Number of Respondents on Team Work (%)	22 (56)	9 (23)	4 (10)	1 (3)	3 (8)	

Table 10. Team Working and Enjoyment

Statement 1	Strongly agree with statement 1	Agree with statement 1	Do not agree with statement 1 or 2	Agree with statement 2	Strongly agree with statement 2	Statement 2
I enjoy team work						I do not enjoy team work
Number of Respondents on Team Work (%)	19 (49)	12 (31)	6 (15)	2 (5)	-	

Table 11. Levels of Pay

Statement 1	Strongly agree with statement 1	Agree with statement 1	Do not agree with statement 1 or 2	Agree with statement 2	Strongly agree with statement 2	Statement 2
I am better paid in a team						My pay is worse than on the line
Number of Respondents on Team Work (%)	5 (13)	6 (15)	19 (49)	4 (10)	5 (13)	

Table 12. Payment Systems in Companies Operating Team Work

Company	Description of Payment System (provided by the managers)
1	An individual piecework system, with an extra incentive in the form of a bonus. Skills are placed into groups. Machinists are paid by performance for the skills they utilise in their own group and receive a bonus payment for extending their skills into other groups. For the performance of skills outside their own group they receive a 5% bonus, for the performance of skills in a second group they receive a 10% bonus, for the third group 15% and so on, until the performance of skills in six groups which produces a 25% bonus. The team as a whole also receive a bonus if each individual within the team successfully achieves their individual production targets.
2	A flat rate, plus a group bonus for reaching certain performance levels.
3	A group piecerate system. Team members each receive the same level of pay. If the team as a whole achieve a certain level of performance, they receive a bonus.
4	A team piecework system. There is a guaranteed base rate with a piecerate payment scheme on top, based on a group bonus system.
5	A flat wage, with a group bonus for achieving the target. To achieve the bonus, the team must reach a daily target. From Monday to Thursday a bonus of £5 is paid for reaching the target, this is reduced to £3 on a Friday when the working day is shorter. Each daily target must be met within each week to achieve a bonus payment.
6	A team piecework payment system. Team members are paid as a group and the pay is performance related.
7	A flat rate, with a group bonus payable upon the achievement of a certain level of performance.
8	A flat rate, with a group bonus payable upon the achievement of a 70% level of performance. The level of the bonus received by the team is determined by the performance level achieved. The higher the performance level (above 70%), the higher the bonus.
9	A flat rate of pay, which is divided into four grades, ranging from a machinist with one skill to a machinist with four skills. The team as a whole then get paid a bonus for reaching a weekly target.
10	A flat wage, with a group bonus paid for reaching target levels. (This company are still in the process of formulating a payment system)
11	A flat rate, paid hourly with a group bonus for reaching a 75% performance level.
12	A flat rate, with a group bonus for the achievement of performance levels of 80% and above. The bonus payable is grouped into four bands of performance, the higher the band, the higher the bonus.
13	A flat rate, with a group bonus for reaching a certain level of production. (This company are still in the process of formulating a payment system and therefore some of the teams are still paid on an individual piecework system)
14	Individual piecework payment system. (This company are examining the possibility of implementing an individual skill bonus, to complement their existing system)
15	A team piecework system. Team members are paid the same and then a bonus which is based on their performance.
16	A flat rate, with a group bonus for reaching a 75% performance level.

Table 13. Production Targets and Pressure

Statement 1 I feel pressurised by production targets	Strongly agree with statement 1	Agree with statement 1	Do not agree with statement 1 or 2	Agree with statement 2	Strongly agree with statement 2	Statement 2 I do not care about production targets
Number of Respondents on Production Line (%)	13 (22)	8 (14)	29 (49)	3 (5)	6 (10)	
Number of Respondents on Team Work (%)	7 (18)	14 (36)	11 (28)	5 (13)	2 (5)	

Table 14. Concern about Production Targets

Statement 1 I strive to reach production targets	Strongly agree with statement 1	Agree with statement 1	Do not agree with statement 1 or 2	Agree with statement 2	Strongly agree with statement 2	Statement 2 I am unconcerned about production targets
Number of Respondents on Production Line (%)	21 (36)	17 (29)	15 (25)	3 (5)	3 (5)	
Number of Respondents on Team Work (%)	20 (51)	13 (33)	6 (16)	-	-	

Table 15. Illness and Guilt

Statement 1	Strongly agree with statement 1	Agree with statement 1	Do not agree with statement 1 or 2	Agree with statement 2	Strongly agree with statement 2	Statement 2
When I am off sick I feel guilty						Sickness is just one of those things
Number of Respondents on Production Line (%)	26 (44)	4 (7)	5 (8)	6 (10)	18 (31)	
Number of Respondents on Team Work (%)	19 (49)	8 (20)	9 (23)	1 (3)	2 (5)	

Table 16. Illness and Resentment

Statement 1	Strongly agree with statement 1	Agree with statement 1	Do not agree with statement 1 or 2	Agree with statement 2	Strongly agree with statement 2	Statement 2
When another operative/ team member is off sick I resent it						It does not matter to me if an operative/ team member is off sick
Number of Respondents on Production Line (%)	4 (7)	2 (3)	11 (19)	4 (7)	38 (64)	
Number of Respondents on Team Work (%)	2 (5)	3 (8)	14 (36)	6 (15)	14 (36)	

Table 17. Desires for Promotion

Statement 1	Strongly agree with statement 1	Agree with statement 1	Do not agree with statement 1 or 2	Agree with statement 2	Strongly agree with statement 2	Statement 2
I want promotion						Promotion does not interest me
Number of Respondents on Production Line (%)	2 (4)	5 (8)	16 (27)	5 (8)	31 (53)	
Number of Respondents on Team Work (%)	3 (8)	3 (8)	11 (28)	6 (15)	16 (41)	

Table 18. Confidence of Operatives

Statement 1	Strongly agree with statement 1	Agree with statement 1	Do not agree with statement 1 or 2	Agree with statement 2	Strongly agree with statement 2	Statement 2
I feel confident						I lack confidence
Number of Respondents on Production Line (%)	36 (61)	16 (27)	3 (5)	3 (5)	1 (2)	
Number of Respondents on Team Work (%)	17 (44)	15 (38)	7 (18)	-	-	

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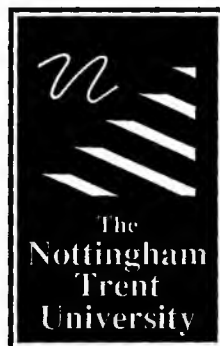
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