

LP Impacts on the Neoliberal Political-Economic Context

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Abstract Lean production has repeatedly been associated with the development of skills, increasing employee participation levels and enhancing the quality of working lives. However, diverse studies also come out against this perspective and instead identify certain limitations to this approach. This article reflects on both the implications lean production holds for the quality of life of workers and its impact within the context of neoliberalism. Opting in favour of a critical view, we present the innovative principles to lean management, segmented into three major topics: production management techniques, supplier networks and human resource management. Subsequently, we make a critical overview of the lean production implications for organising work and the workplace contexts faced by employees. Complementarily, this article also spans the terms under which the neoliberal political-economic system emerged. We conclude that lean production in itself is not the cause of negative impacts but depending on the management style and the way such practices get implemented. This neoliberal contextual framework underpins the focus on the most contested facets of lean production and how this effectively reflects in an intensification of work, boosting control levels, fragmenting and atomising labour and, on the grounds of worker flexibility, ensuring their availability to work in a variety of situations, on low salaries, with limited expectations in terms of workplace security and working conditions, lower levels of collective worker resistance and highly vulnerable to deteriorations in their standards of living.

1 Introduction

After almost three decades, the management system designated lean production (LP) has expanded far beyond the automobile and manufacturing sectors where it originated to become generalised across the most diverse sectors of activity and

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geographies. Its principles have undergone application in areas as distinct as the aerospace industry (Martínez-Jurado and Moyano-Fuentes 2014), civil construction (Jørgensen and Emmitt 2008; Green 2002) and services (Sprigg and Jackson 2006; Arfmann and Barbe 2014) whether services for healthcare (Eriksson et al. 2016), education (Sirvanci 2004; Sahney et al. 2004; Thirkell and Ashman 2014), or governance, for example (Radnor and Johnston 2013). Concerns over boosting efficiency, reducing costs, and guaranteeing quality standards all encouraged the adoption of lean management principles.

There is no clear and consensual perception as regards the scope of the spread of LP in the West. However, various studies do point to a broad scale of dissemination (Holweg 2007). A study on the working conditions prevailing in 31 different European countries (Parent-Thirion et al. 2007) reports that around a quarter (25.7 %) of responding employees worked under some form of LP model. These include high performance working practices involving team working, task rotation, problem solving, quality control, autonomy in the workplace but also subject to strong restrictions such as compliance with high production standards, intense rates of works, strict quality norms and a significant presence of monotonous and repetitive tasks (Kovács et al. 2014). LP associated working practices were the most visible in countries such as the United Kingdom (32.4 %), Portugal (30.3 %), Ireland (29.2 %), Greece (29 %) alongside some countries in Eastern Europe. These are also present in industry, especially in the production of means of transport, electronic and electric devices, wood and paper pulping and in the design and publishing industry.

Contrary to traditional mass production, LP implies less of everything (Adler 1993; Womack et al. 1990; Wood 1993). The management approach seeks to eliminate waste, reduce the duplication of work, cut stock levels, achieve fewer hours per output and lower the number of workers deemed of lesser added value. LP, whilst based upon the Taylorist/Fordist model that it emerged from, has taken on distinctive characteristics given the need to adapt to the economic reality of Japan in the post-war period and the new operational objectives. The differences in approach fundamentally span three different areas of action. Firstly, LP involves the design of specific production management techniques, introducing new forms of organising production based on external networks of suppliers and differentiated at the level of organising work in placing a particular emphasis on continuous improvement processes and the role attributed to team working.

However, the organisation of work and labour relations incorporate the main criticisms of LP as a management model (Berggren 1993; Rinehart et al. 1997; Post and Slaughter 1999). The increasing intensification of working patterns, the subordination of work to the optimisation of processes, the fragmentation and atomisation of labour and the secondary role attributed to labour relations feature as some of the most contested fields. Despite the dissonant voices, many of the principles to LP have become integral components of the currently predominant management models.

There are thus many workers engaged with the principles behind LP within their working contexts. Within this scope, some questions inevitably arise. What

restrictions stem from LP practices? What physical and psychological consequences do they have for workers? Does greater involvement reflect in greater worker autonomy and the enrichment of the working tasks? How does this approach differentiate from the traditional models as regards the supervision and control of work? What human resource flexibility strategies get prioritised? What implications are there for the employment market? What is the underlying system of labour relations? Finally, just what circumstances foster the spread of LP practices and how do they fit in contemporarily with the current neoliberal political-economic context?

Based upon a non-exhaustive review of the vast literature existing on LP, this article seeks to reflect on the innovative factors introduced by LP and the socio-organisational implications resulting. Opting in favour of a critical perspective, this approaches the impacts generated for working contexts, labour and employment as well as analysing the conditions surrounding its emergence within the framework of a neoliberal economy. More specifically, this article divides into three sections. We begin with a characterisation of the main innovations inherent to lean management, themselves segmented into three main topics: management production techniques, supplier networks and human resource management. Then, we engage in critical analysis of the implications of LP for the organisation of work and the quality of life of workers. Furthermore, and complementarily, the article reflects on the macro-economic context in which LP has emerged.

2 Lean Production: Characteristic Features

2.1 From Taylorism/Fordism to Lean Production

Despite LP taking its inspiration from the Taylorist-Fordist model of production (with that system transplanted from the Ford factory to the Toyota Jidosha automobile factory), the former displays fairly distinctive characteristics. The economic constraints prevailing in post-war Japan made certain changes necessary to the original model of production (Hiroyuki 1998). Economic resources remained highly scarce, with restrictions on the capacities of installations and companies facing not only serious financial difficulties but also irregularities in supplies and only a limited domestic market. All of these factors served to impose strong restrictions on mass production. Thus, in order to deal with such constraints, there came the need to introduce significant alterations to the Taylorist/Fordist model to shape it to the realities then existing alongside the need to attain new operational objectives (Skorstad 1994; Freire 1995).

These factors emerged in conjunction with the affirmation of new assumptions (Wood 1993) including how it might be possible to produce standardised products without raising the installed capacity or the level of intermediate stocks. This interlinked with the conception of how improvements to quality might be returned

without significantly boosting the costs of production and led to the introduction of new management principles that would call into question many of the characteristics of the original model of production (from Fordism/Taylorism).

Hence, and contrary to the traditional Taylorist/Fordist logic, shorter but still profitable production runs became possible (replacing vertical integration by the setting up of networks of subcontracting); guaranteeing quality without supplementary costs (through the introduction of the principles behind total quality management and rendering the layout more flexible) and cutting costs (through means of eliminating waste).

Stemming from this process of adaptation, some of the lean management principles ran contrary to the core tenets of the Taylorist/Fordist production model (Coriat 1991; Forza 1996). Such proves the case with economies of scale, vertical integration, the concentration of production and the undervaluation of quality in favour of quantity. In general terms, while the Taylorist/Fordist model strove for productive efficiency through both rationalising recourse to labour and incorporating technology, LP obtains its goals above all through the optimisation of production, the reduction in costs and the demand for total quality.

Should we concentrate specifically on the most significant innovations that LP brought along, we may identify three different axes that we present below: the optimisation of production, the implementation of new ways of organising production through drawing upon networks of suppliers and in addition to the differentiated management of human resources.

2.2 Production Management Techniques

Within this scope, the changes in the production management techniques rank as among the most significant changes introduced. One of the emblematic causes introduced by LP came with total quality management (TQM). This encapsulates the expansion of quality control to all products and the entire cycle of production and moving on from some process of randomly inspecting outputs as was the practice under the Fordist model.

Another structural LP axis spans the reduction in costs through the elimination of waste (Freire 1995). Among the various categories of waste, the areas of intervention targeted, for example, waste from excess production (reduced through the just-in-time concept and through production level planning); waiting times (through means of optimising the layout and the automatization and autonomy of production equipment); transport (through the Kanban system, levelling production output and optimising the layout); processing (through improving working processes and TQM); managing inventories (reducing stock levels, materials in circulation and planning production as efficiently as possible); movements (rationalising working processes) and the waste resulting from products with defects (via TQM).

The optimisation of the layout was an equally important dimension and incorporated the systematic adaptation of physical and human resources to variations in workloads (Bamber and Dale 2000). This optimisation enabled not only adjusting production to variations in demand but also the more efficient management of resources with corresponding increases in productivity. The Kanban method, despite representing only a simple technique, also proved central to LP as this enabled the implementation of the just-in-time (JIT) approach. This basically consists of recording in real time the product references that are then undergoing processing or that require prior processing. That the necessary component requisition gets undertaken not by the planning department (as was the current practice under the Taylorist-Fordist model) but rather by the workers themselves at the moment in which such are necessary ensures the avoidance of accumulations of stock. This procedure, designated pull production (Skorstad 1994), guarantees that the required quantities correspond exactly to the real needs, avoiding the build-up of excess stocks and inventories and correspondingly bringing about more effective control over the entire manufacturing process.

JIT constitutes one of the most distinctive characteristics of LP. In the strictest sense, this simply means that the pieces should arrive on the production line at the exact moment and in the exact quantities needed for their respective application (Karlsson and Åhlström 1996). The implementation of JIT not only requires the effective deployment of the Kanban system and the other aforementioned management techniques (Wood 1993) but also the heavy intervention of workers, especially in terms of manufacturing surveillance and supervisory activities, resolving operational problems and continuous improvement processes (Kaizen).

LP, while having derived from the Taylorist/Fordist model, readapted the original model to incorporate innovative techniques that enabled the implementation of more flexible management for production processes, reducing costs and raising the overall quality standards and therefore achieving through this approach, additional gains in productivity.

2.3 Supplier Networks and Types of Inter-company Relationships

However, the innovations introduced extended beyond the optimisation of the production process. LP also incorporated a new structure of productive organisation based upon establishing dense chains of geographically clustered suppliers (Ferreira et al. 1994). Following the launch of JIT and the eliminating of tasks that did not bring any added value to the final product, productive activities were deverticalised, segmented and externalised to outsourced chains of subcontractors.

Initially, the optimisation of supplier networks (France, Commissariat Général du Plan 1990) incorporated long term relationships based upon criteria of reliability and trust. This generally assumed exclusivity in the relationship within a pyramidal

structure, hierarchically ordered into successive levels of suppliers. This also required geographic proximity, especially for the suppliers of components with significant value to the final product or of importance to maintaining consistent levels of production output.

However, this matrix for inter-company relationships has since undergone modifications. Despite the surviving predominance of long term relationships, there have been rising levels of recourse to suppliers internationally (Hiroyuki 1998) and as reflected in multi-sourcing policies as a means of maintaining a downward pressure on prices. The importance of involving the supplier in the continuous improvement process has also gained ground. In this case, the maintenance of the supplier relationship now depends not only on compliance with quality standards, specifications and delivery deadlines but also the capacity to adapt to the various impositions of the contracting company and the resulting need for innovation (Lambert et al. 1998).

2.4 Organising the Workplace and Managing Human Resources

The introduction of innovations to the productive process and the organisation of production came about once again through the differentiated management of human resources. The emphasis attributed to teams and continuous learning processes and the introduction of quality circles, the focus on learning, multi-tasking and operational flexibility were all associated with symbolic management centred around the common sharing of objectives and a company team spirit and representing the most innovative aspects of LP. Without boosting the scope of worker intervention in the working process, there would be little likelihood of implementing the management techniques underpinning TQM, JIT, optimising layouts; eliminating waste, etcetera (Skorstad 1994).

LP particularly benefitted from the specific culture that served as its incubator. Characterised by a strong sense of community, harmony of values, commitment towards common objectives of which rigour and perfectionism were integral dimensions, there was also an underlying presence of workers with a strong sense of dedication to the company and a willingness to do their best coupled with a high capacity for adaptation (Coriat 1991).

The fact that employees have to deal with, and especially in initial phases, various diverse operational problems (such as the lack of components, excess stock levels, problems with manufacturing or downtime, for example) generated the need for more direct intervention on their behalf. This required members of staff to hold the capacity not only for undertaking routine operations but also for resolving operational problems, ensuring quality control and intervening to prevent any incidence of product defects (Beauvallet and Houy 2009).

Given this expansion in worker functions, there arose the corresponding need to foster the incentives necessary to guaranteeing the higher levels of performance, greater proactivity, the critical spirit and high levels of motivation. Within the framework of material stimuli, the distribution of profits generated a particularly important impact alongside job security policies. The deployment of symbolic management techniques, such as public recognition, standardised uniforms, identical social benefits and shared common spaces, for example Kovács et al. (2014), proved of equal relevance. Furthermore, there is the value placed on a homogenous culture, unit centred and striving for consensus, strengthened by the absence of independent trade unions and deepening the sense of work ethic, guided by common objectives and high levels of performance.

The very suggestion box system and the process of continuous improvement (Kaizen), rank as the most emblematic LP innovations within the framework of human resource management and deployed above all as powerful instruments for the management of persons. The need for workers to optimise processes, detect problems and correct setbacks extended to a predisposition for cooperation, stimulating the capacity for initiative and raising the sense of worker responsibility. While some estimates state that the resulting quality circles do not resolve more than 15 % of the quality control problems (Juran and Gryna 1991), this organisational form is known to generate a fairly high level of motivational impact. The applied human resource management instruments thus comply with a dual objective: rendering feasible the new production management principles and guaranteeing compliance with the operational objectives established.

3 Impact of Lean Production on Organising Work and Health and Safety

After over three decades, the principles of LP have spread far beyond the original Japanese context to enter into the most diverse sectors and territories worldwide and with many workers now experiencing forms of lean management in their workplace. Despite a lack of any broad consensus over the actual impacts of LP and with shortcomings to the scope of analysis on this field, various studies have already warned that the advantages returned by LP in terms of economic performance do not always bring about improvements to the quality of life of employees (Rinehart et al. 1997).

Furthermore, analysing the impacts of LP proves difficult and complex given such is the diversity of the contexts to which the model has been applied. Additionally, these processes often turn out to be hybrid forms that render analysis of the LP impact still more complicated in terms of ascertaining the attributable implications. Opting for the assumptions underlying a critical perspective, we present below some of the themes that have consistently featured in research on this theme.

3.1 Impacts of Lean Production on Occupational Health

One of the most frequently studied facets concerns the effects of LP on the occupational health of workers and the associated risk factors. Longitudinal analysis carried out by Koukoulaki (2014), spanning some two decades of research on this theme, makes it more than clear that despite the diversity prevailing in the conclusions reached, some LP practices bear unequivocally negative effects for the health and wellbeing of workers.

This study also reveals how research conclusions have diverged over the course of time. They moved on from a strongly negative perspective, especially in the initial phase to a vision encapsulating mixed effects, depending on the management style and its form and style of implementation. The first studies, primarily targeting the North American automobile industry, took place in the 1980s and 1990s and reported on an intensification of working rhythms and speeds and the presence of monotonous and repetitive tasks with deeply negative impacts on the health of employees. Later studies, mostly focused on European contexts, following the migration of LP into the service sector, highlighted the negative psychological effects and the stress caused and, even while demonstrating the presence of mixed effects (hence, both positive and negative), with the latter tending towards a lower level of incidence. After 2000, studies encapsulated a broader range of services with the results proving still more controversial given their portrayal of both positive and negative effects (Handel 2014).

Despite the clear differences, there are still some factors drawing a broad consensus, including how the negative impacts of LP proved particularly strong in the automobile industry. There are various studies demonstrating how the transposition of LP to the automobile sector drove an intensification of the pace of work and a reduction in the working cycles (Rinehart et al. 1997; Parker and Slaughter 1988; Dassbach et al. 1994). The continuous search for means of reducing downtime and other periods of inactivity led to a failure to consider the minimum cycles of rest necessary to the recovery of the worker and contributing towards a heightened risk of muscular injury. The rotation of working posts, deployed by some companies as an alternative strategy, turned out ineffective as this rendered the identification of those working posts causing physical problems still more difficult. The option in favour of the introduction of ergonomic improvements and technological means of support returned greater efficiencies that improved on the physical conditions in which the jobs got done. However, there remains clear evidence testifying to how some lean production managers opted for still more rigorous recruitment procedures in order to select workers less susceptible to workplace injuries (Huxley 2015). In this case, workers unable to adjust to the demanding pressures of LP would have to leave and accept some form of disability or invalidity compensation payment.

The literature also attributes relevance to how the intensification of working speeds was closely associated with the deployment of specific lean management techniques and particularly the case with JIT production (Rinehart et al. 1997; Koukoulaki 2014). This finding led some authors to consider that the negative

impacts do not stem from LP in the general sense but are interrelated with the way in which certain principles undergo implementation by companies. The research findings of Parker (2003) conclude that the installation of an assembly line generated negative effects on employees, including an increase in workplace depression. However, the negative effects resulting did not prove as extreme as in cases of the introduction of team working or the formalisation and standardisation of working patterns and flows (e.g., in reducing inventories). Deepening this perspective, Conti et al. (2006) also identify specific working practices that were clearly related with workplace stress. Their findings particularly emphasise practices involving the raising of the rhythms and intensity of work, eliminating resources, working longer hours than otherwise wished for, shortened time cycles, undertaking the work of absent colleagues, feelings of guilt over the occurrence of defaults and as well as ergonomic difficulties.

These authors also highlight the fact that the actual impacts of LP may vary in accordance with the management style and the means of implementation. The strategies and options taken by managers thus serve to strengthen or weaken these negative effects. For example, options over the extreme elimination of “redundant activities”, with direct effects on the intensification of work may be minimised when accompanied by other measures designed to soften the stress resulting such as awarding greater autonomy or supplementary support for teams. According to Westgaard and Winkel (2011), options in favour of these auxiliary measures (such as improvement programs for example) do serve to offset and cushion the negative impacts of lean systems.

Despite the diversity existing, there is an analytical consensus around how specific LP techniques generate negative impacts on the health of workers above all those interlinked with the intensification of labour and working routines and heightened stress levels. Even after workers get adapted to LP practices, they remain critical of the additional heavy workloads, resulting from variations in demand, the high production patterns and standards, the interruptions caused by technology and even failures in the supply chain (Huxley 2015). Figure 1 displays a summary of the potential risk factors associated with LP by Koukoulaki (2014).

3.2 Impacts of LP on the Organisation of Work

In an initial phase, LP emerged associated with more qualified models of labour featuring higher levels of both participation and autonomy. However, many of the original assumptions were subsequently called into question by later studies (Parker 2003; Bruno and Jordan 2002; Jones et al. 2013). From early on, researchers such as Klein (1989) have warned of the excess of optimism that LP induced changes may evoke. We set out below a summary of the main criticisms of LP within this scope.

One of the most recurrent criticisms derives from the maintenance of Taylorist organisational principles in the workplace. While LP assumes a broadening of

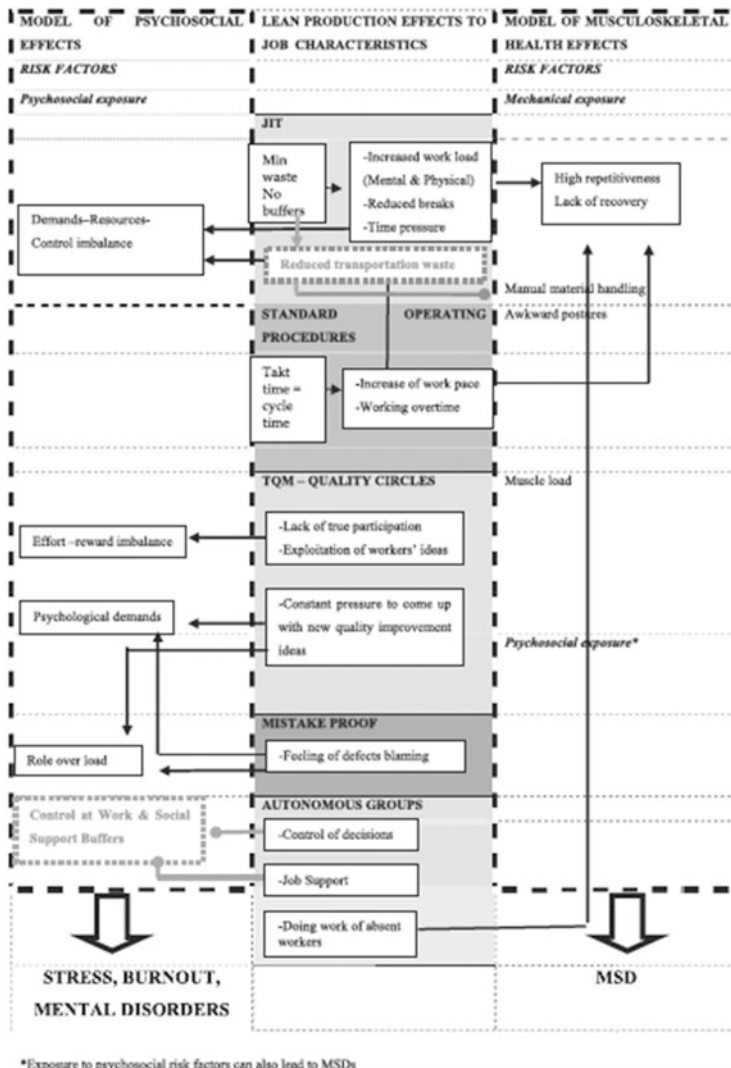


Fig. 1 Interaction model of lean production characteristics with risk factors. *Source* Koukoulaki (2014)

tasks, these are above all horizontal in nature and eligible only to the extent workers are able to alternate between different tasks. Maintaining the fragmented character and standardised nature of work means there was no significant corresponding increase in qualification with multi-skilling remaining predominant while tightening short and rapid working cycles. This also retained the assumption that efficiency stems more from the rigid and a priori detailed predetermination of workplace tasks and job content rather than the autonomous management of tasks by workers as is

the case with other more qualified models of labour organisation (Skorstad 1994; Wood 1993; Kovács and Castillo 1998). The maintenance of standardised and individualised tasks does not enable any enrichment of working content or any greater qualification of labour.

The affirmation that LP induces greater participation has also come in for some very close questioning. The level of worker participation has also displayed significant limitations. Their intervention has remained restricted to quality circles, maintaining the mechanical execution of tasks that the operators themselves recreate. This becomes compounded by how this same intervention may prove punitive to the workers as the end result may incorporate another intensification of working practices (Kovács et al. 2014). Studies carried out on LP in the automobile industry, such as those by Wood (1993), Skorstad (1994) and Rinehart et al. (1997), for example, report that the presence of quality circles or suggestion programs not only do not introduce major alterations in terms of participation but also inclusively imply an intensification of the patterns of work. The research project carried out by Zhang (2015) corroborates this position. The majority of workers interviewed considered that employee participation programs do not endow them with any greater level of intervention in the workplace. On the contrary, interviewees stated that the suggestion program did not extend beyond rationalising the production process as this focused detailed analysis on how to guarantee gains in productivity and reduce waste and having also resulted in both higher pressure and greater workloads for members of staff. Equally, the research findings of Bruno and Jordan (2002) from a Mitsubishi Motors cohort, where LP was fully implemented over an 8 years period, also report that the workers expressed frustration towards the rhetoric of empowerment within an environment they state does not provide them with any real power. This extends as far as the expression of feelings that the management had deployed the production system against them.

We would also additionally state that even in those cases where there is a higher level of worker intervention (as in continuous improvement processes), the decision making continues to follow a descending order (Wood 1993). This conveys how workers remain subject to the Taylorist stipulation holding that design and planning belong to the management sphere of competences. This also reflects how participation remains conditioned by certain levels of tolerance given that suggestions only get accepted when not calling into question the production parameters and the established prevailing power relationships. To this end, the scope of worker intervention remains that of the productive and operational spheres and dependent on hierarchically structured decision making processes, especially for suggestion acceptance and implementation (Kovács et al. 2014).

Another assumption subject to close scrutiny encapsulates the perceived rise in empowerment and autonomy. From the outset, various research findings warned about how the continuous search for new means to optimise processes and reduce costs leads to the standardisation of processes and the introduction of centralised systems of operational control that in turn imply increased levels of control and supervision over workers. The very JIT system of Visual Control Methods, for example, enable real time control over daily production targets, downtime and other

quotas set for completion (Zhang 2015), deepening the level of supervision over workers and exercising extremely strong pressures for compliance with the pre-defined production objectives. Furthermore, they supply employers with an additional tool for evaluating the capacity of workers for undertaking particular jobs at faster and more intense paces (Huxley 2015). Hence, the deployment of performance control systems within the context of LP fosters tighter controls over individual performance levels and opens up the way for production targets to be adjusted and aligned with the maximum individual capacity levels. Such a situation may easily give way to feelings of instrumentalisation (as merely in the service of meeting production objectives) and, inclusively, inducing the loss of any meaning to work.

The very concept of team, core to LP, has also fallen under a critical spotlight. Surveys carried out in the automobile industry, for example, production line workers at Cami Automotive, Ingersoll, Ontario by Rinehart et al. (1997), returned fairly revealing evidence as regards the perceptions on the way team working actually took place. In an initial phase, the answers given to questions about experiences of team working remained broadly favourable. However, follow-up studies then later revealed growing levels of scepticism. In particular, references detail the pressures placed on teams to assume more tasks or even to accept working with a lower number of colleagues. In some cases, teams were pressured into reducing recourse to team “floater” positions even in situations when a member of the team was absent or working a restricted timetable. As Huxley (2015) refers, the presence of stress, especially when team working interlinks with a shortage of staff and may even prove more prejudicial to individual wellbeing than the demands handed down by a traditional supervisor.

Further weighting stems from teams representing a factor of support and backup with these dimensions also proving a vicious circle with negative unintended consequences for members of staff. Authors such as Huxley (2015) detail how these may end up serving as another means of controlling the performance of their members and lead to peers exercising pressure on their colleagues, especially those unable to execute a particular task as easily or as swiftly as themselves. In such cases, it would seem as though the principles of cooperation and trust get transformed to fall into the service of a purely mercantilist and economic logic with an inversion in the relational assumptions implicitly established (Rego and Pina 2005).

Other criticisms reference the ways in which technology has become integrated into LP. Within this scope, various authors (Kovács and Castillo 1998) highlight how LP favours a technocentric perspective on the utilisation of technology. Contrary to an anthropocentric view, that prioritises flexible and decentralised systems in which technology builds and expands on human competences, the technocentric perspective focuses upon the maximisation of control and the centralisation of operations. The investment in developing integrated and centrally controlled systems contains an underlying agenda of self-regulation via means of formalising and incorporating human knowhow into machine software. This also strives to reduce the operational tasks and eliminate human variability. This hence

privileges the technical aspects to the detriment of the human facets deemed merely as some additional cost that requires cutting and shrinking.

Gaining a similar profile are those voices raising criticism of human resource management strategies applied within the context of the lean system. Originally, LP emerged associated with job stability, opting for multi-tasking and multi-skilling in order to guarantee flexibility and adjusting to the fluctuations in demand. However, there are many lean organisations that have favoured quantitative flexibility even while combined with partial qualitative flexibility (Wobbe 1992). This situation has led to the externalisation and outsourcing of large swathes of the workplace, contributing to the weakening of worker positions in the job market and subject to greater employment instability, fewer opportunities for training and improving on their qualifications, reduced salary levels and precarious working conditions.

The model of labour relations underpinning LP approaches has also raised problematic issues. Critical analysis refers to how LP values a harmonious culture, a sense of community and a search for consensus whilst, in this process, tending to neutralise pluralism and conflicts of interest and marginalising the presence and role of trade unions (Huxley 2015). Emerging in its place, there stands a more limited conception of the employee, perceived in an individualised fashion, as if somebody awaiting their chance to participate in working entities in a unitary partnership established by the employer. In this context, trade unions fundamentally serve as a framework institution for employees, aggregating interests and establishing commitments structured around compliance with company objectives (Kovács et al. 2014). Critical voices refer to how LP deploys control through consensus rather than direct and coercive control (Kovács et al. 2014). Regarding this issue, Stewart et al. (2009) argue that LP, through such means, has proven able to entirely remove the voice and the expression of workers. Carter et al. (2011, 2013) put forward similar arguments following their study of the adoption of LP in the United Kingdom civil service.

It remains too early to fully determine the psychological and social consequences of a career and a life spent working under LP. However, we would here highlight that the impacts of LP do not occur independently of contextual factors. On the contrary, comparative studies such as that by Lewchuk et al. (2001), focusing upon LP units in the automobile industries of Canada and the United Kingdom, for example, demonstrates quite clearly how the management strategies applied (such as the productivity targets set, for example) or the prevailing type of industrial relations hold significant influences over the quality of working life (Parker 2003; Shah and Ward 2003).

The observation as to how external factors and management options shape the way in which LP gets implemented, and consequently the types of impacts generated, thus necessarily requires analysis of the surrounding macro-economic environment to LP practices.

3.3 Lean Production Within a Neoliberal Political-Economic Context

In order to more broadly grasp the scope and nature of the effects of LP for employees and the quality of their working lives, we also need to take into consideration the current economic context. Within this scope, some basic questions emerge. Why has LP expanded within a markedly neoliberal political-economic context? In what way have its core principles been subject to the competitive demands prevailing? What impact does this have on employees and working contexts? This debate necessarily incorporates the fact that the rollout of LP took place within a post-Fordist and neoliberal context.

The rupture in the equilibrium that had sustained Fordism and the interlinking crisis and recession of the 1970s opened the path for challenges to Keynesian policies and for the affirmation of neoliberal principles. “Neoliberalism” represented a “return to classical liberal economic principles emphasizing free markets with minimal regulation by other agencies, most notably the state” (Huxley 2015: 143). Within this framework, there was rising pressure to scale back the intervention of the state whether in terms of the reallocation of resources or in the provision of services to society and deemed fundamentally restricted to acting in the commodity and labour markets. In parallel, there was the advance in privatisations, the deregulation and liberalisation of markets and fostering the economic and financial globalisation seen over recent decades.

The economic point of view of the neoliberal model, characterised by the primacy of the “creation of shareholder value”, strengthened the pressures on obtaining the maximum level of profitability over the short term. This economic rationalisation essentially took shape through three means: (1) optimising productive processes; (2) economic restructuring on a global scale sustained by the downstream structuring of outsourced and subcontracted companies and (3) the reduction in labour costs. Across each one of these facets, lean production brings significant added values and to the extent of contributing a strong capacity to strengthen the dominant economic model.

In terms of the management of production, the advantages to lean production are clear. Based on the “less is better” approach, LP drives the implementation of simplified systems, orientated towards quality and carefully adjusted to client demands. Characterised by short working cycles and by the utilisation of systems that may easily be reconfigured and expanded, LP swiftly adapts to the constant variations in the products and services required by the market. This also enables the updating of working methods and the surgical incorporation of technological advances that thereby avoid major investments in capital that rapidly tends towards obsolescence.

However, LP also strengthens the systemic rationalisation that underpins the new world economic order. Centred on the segmentation of productive activities and interactions through networks of companies, this ensured the greater concentration of powers of decision making and strengthening the major corporations that

correspondingly accumulate an enormous power of decision and influence over the destinies of hundreds of millions of persons all around the world (de Lisboa 2002) and in various cases outstripping the scope of action of nation-states themselves.

Within this context, LP has also itself played a fundamental role. Whilst the Taylorist logic was restricted to the universe of the company or the factory, LP extended to the entire chain of value. Through the design of modular systems, economic transactions became possible among the most diverse business units and outsourced firms and also expanded the management of quality to the chains of supply. Lean production methods thus enable the strengthening of the logic driving this current economic model based upon the founding of global chains of value with enormous powers of decision making at the global scale and, on the way, reconfiguring, sector by sector and territory by territory, every aspect of the economy.

We would furthermore point out that LP made an unparalleled contribution towards attaining the third requirement in this logic: the reduction in the cost of labour. This was fundamentally driven by two different facets. On the one hand, in proposing techniques for the optimisation of labour and eliminating redundant tasks, LP not only rendered work more efficient but also extended to fostering its intensification. The very management culture and the deployment of more participative approaches also nurtured high levels of performance then driven by centralised control systems. In this case, the orientation of staff towards fixed targets for quality, productivity and flexible management emerge as core imperatives for profitability and to the detriment of any focus on valuing human inputs, the meaning of work or the striving for better qualified employment and personal development.

On the other hand, the search for a labour force able to provide swift, low cost responses to the demands of the market place has led to the segmentation of workers. Recourse to “periphery subcontracting”, characteristic of the lean production model has served to establish a growing pool of “flexible” workers. In this context, recourse to new forms of employment, such as part time working or temporary forms of employment, for example, has driven the segmentation of workers and divided them into better paid employees, with relative job security and unionised, and external third party workers with lower levels of remuneration, less stable employment and corresponding greater levels of precariousness.

The contracting of part time workers or those on temporary contracts at lower wages removed the pressure on salaries and even led to a reduction in indirect costs through the elimination of benefits. Indirectly, this brought about downward pressures on the expectations of workers especially in contexts of high levels of unemployment.

This movement is not restricted to developed countries and instead spread to other geographies and territories particularly impacting on workers with lower levels of social protection and opening up the scope for the hyper-exploitation of the more vulnerable groups such as migrants, young persons, women and more elderly workers. In this case, there have been imbalances arising in the power relationships between employers and employees and to the clear detriment of the latter. This situation, to a greater or lesser extent underlying the LP labour relations

model, only gets enhanced by the respective weakness of trade union powers and capacities.

The ways in which LP principles have been applied in the establishing of conditions have served to strengthen and reinforce the neoliberal political-economic system. Indeed, LP not only enabled the reproduction of the flexible employee, willing and able to engage in a variety of working situations and with limited expectations in terms of security, salaries and working conditions, but also fostered conformity through collaborative cultures that effectively guaranteed lower levels of resistance.

This finding extends equally to another situation; that of the difficulty workers encounter in countering the legitimising discourse of LP. There is significance in the fact that workers face major resistance whenever expressing their objections to LP. Taking as his example the expansion of LP into services, within this framework Huxley (2015) refers to how professionals encounter difficulties in questioning programs that emphasise the quality of service and the best results for the beneficiaries and recipients. Just as industrial workers cannot but be in favour of quality in manufacturing, service professionals cannot stand in opposition to the improvement of quality in the provision of services despite the many who state that lean management models are accompanied by measures that boost the intensity and stress experienced by employees alongside labour types susceptible to inducing precariousness.

4 Conclusion

The principles behind LP have attained a notable level of diffusion having undergone implementation not only within the context of the automobile industry where they originally emerged but also in the most diverse and different sectors of activity. Despite lean production tracing its origins to the Taylorist/Fordist model, the approach has taken on distinctive characteristics in accordance with the need to adjust and adapt to the economic realities of post-war Japan with such differences emerging across three leading fields of action. Underlying LP is a differentiated style of managing production based upon core concepts such as just-in-time (JIT) as well as total quality management (TQM). These in turn imply the development of new forms of organising production based upon external networks of suppliers significantly contributing towards reconfiguring the economy on a global scale. LP also led to adaptations to the models in effect for the organisation of labour and attributing particular importance to setting up working teams and getting employees involved in continuous improvement processes, introducing quality circles and suggestion systems.

While initially LP appeared associated with skill development, increased employee participation and an enhanced quality of working life, various researchers

concluded to the contrary of these assumptions and instead identified strong limitations to LP. The core criticisms have tended to target the organisation of labour and the working conditions prevailing. Some of these analytical findings especially emphasise how LP does not do away with the classical principles underpinning the organisation of labour, entitled internalised Taylorism. They also describe how the continuous search for productivity gains strongly induces management practices seeking to drive and increase the intensity and rhythms of work. Within this scope, LP thus emerges as interlinked with a rise in the risk of occupational diseases (muscular injuries, physical exhaustion and high stress levels). Other critical perspectives target the intensification of control, the decrease in autonomy and the reduced scale of participation. This all conveys how the principles of cooperation, participation and valuing human inputs undergo change before getting redeployed in the service of a purely mercantilist and economic logic. This also references how the outsourcing of activities, another underlying principle of LP, opens up the way for the segmentation of labour (downsizing, temporary and part time work) and contributes towards greater workplace insecurity and precariousness.

Recent studies have also concluded that the impacts arising from the LP system differ in accordance with the management style prevailing and the form of implementation with LP not in itself the only factor generating negative impacts. The management options taken in the course of implementing LP (productivity targets, leadership styles, for example) and the contextual variables (type of labour relations, competitive context, for example) significantly influence the way in which LP principles get applied in practice and consequently shaping their impacts in terms of quality of working life.

Correspondingly, analysis also needs to take into account the neoliberal context that has sustained the spread of LP. Neoliberalism, in claiming to foster economic growth through strengthening the “free market”, reducing the scope of state intervention and cutting back the costs of labour, has served to deepen the imbalances in the already existing power relationships to the detriment of workers. Furthermore, enacting labour market flexibility, weakening the welfare safety net provided by the state alongside undermining the role of trade unions have all combined to heighten the level of vulnerability of workers and their terms of employment. At the company level, neoliberalism drove the most contested facet of LP. This presumed the adoption of flexible labour practices that extend to outsourcing, third party contracting and the segmentation of the labour force and, at the level of labour relations, reducing the recognition attributed to trade unions and weakening negotiation mechanisms. Within this context, while on the one hand LP drove the reproduction of the neoliberal model, on the other hand, this also resulted in the most contested feature of LP; its option in favour of the concept of a flexible worker, able to deal with a variety of situations, on low wages, with limited expectations in terms of job security and benefits, lower levels of resistance and highly vulnerable to deteriorating terms of existence.

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