



Management and Employee Control in Current Industrial Work

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ABSTRACT

This article examines how employee control is affected by the ongoing erosion of boundaries in work organization and established boundaries in the relationship between employees and management. One assumption is that the erosion of boundaries offers potential for increased employee control, meaning increased autonomy or self-determination at work (employee control how and when to do what). This assumption is supported by theories on the psychosocial working environment. Another assumption is that the erosion of boundaries threatens the frontiers from where employees can defend their interests, and consequently reduces employees' control of their work (what and how much to do). This assumption is supported by "labor process theory." This article studies control and the erosion of boundaries in two case factories in the food industry. Two perspectives are applied: the psychosocial working environment and "labor process theory."

KEY WORDS

Boundarylessness / control / industrial work / labor process theory / psychosocial working environment

Introduction

In many jobs, established boundaries between various job functions and between management and employees are gradually eroded (Alvin 2008; Hirschhorn & Gilmore 1992; Holt et al. 2013; Hvid et al. 2008, 2010; Kamp et al. 2011; Lund 2007). This is a development that is apparently in line with the recommendations expressed in psychosocial work environment studies and in assessment of job quality (Hackman & Oldham 1976; Karasek 1979; Karasek & Theorell 1990). The individual jobs were enriched by more diverse tasks. This provided more opportunities for learning, and could lead to autonomy in work.

In Labor Process Theory (LPT) we find an alternative understanding of the consequences of the erosion of boundaries in working life. Here it has been found that new forms of work organization and new relationships between employees and

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management have been followed by new forms of management control (Pruijt 2003; Taylor et al. 2002). Following LPT, it is most likely that the trend which we refer to as a move toward boundarylessness will weaken the defense employees have developed toward management control (Thompson 2003; Thompson & van den Broek 2010).

Theories about the psychosocial working environment and LPT are rarely brought into dialogue. Here we will use both traditions as perspectives in our empirical case study.

Our case study was conducted in two companies in the Danish food industry. The boundaries here are very strict, and work has consequently been very well defined. For decades, Taylorism and bureaucracy created effective managerial control over employees. However, boundaries created through Taylorism and bureaucracy have historically created resistance among the employees. This resistance has made a certain degree of employee control possible and by that Taylorism has created boundaries between management and employees that has made a collective protection of interests among the employees possible. Boundaries between job functions have created an opportunity for employees to develop some control over the intensity of their work. The traditional factory system with strict boundaries in time and space has made restrictions on working hours possible.

This article therefore focuses on a complicated dilemma: The erosion of boundaries in traditional manufacturing industry creates opportunities for employees to be released from strict management control. At the same time however, this erosion weakens the established system of defense created by employees to protect themselves from boundaryless demands (Goldthorpe et al. 1968; Lysgaard 1999). We will dig into this dilemma by *exploring whether erosion of boundaries in industrial work implies a higher degree of employee control in work or whether the erosion destroys the platform for employee resistance and defense against managerial demands and thereby degrades the work environment.*

The dilemma will guide us through the empirical analysis together with a special focus on two kinds of employee control:

- Control related to the boundaries between employee and management
- Control related to the boundaries in work organization, including time, space, and job functions

Management control in LPT

Management control over labor is a consistent theme in LPT (Thompson & van den Broek 2010). During the history of LPT from the 1970s up to now various forms of management control have been identified. This partly reflects the evolution of work throughout LPT's history. However, the forms of management control identified in the 1970s have not disappeared today. The forms of management control identified in the early LPT studies are still there; however, more and perhaps more sophisticated forms of control have emerged.

We here summarize the three types of management control LPT identifies. Later we examine whether and how these control types exist in our cases.

Management control through the work organization

The most basic assumption of LPT is that all kinds of paid work are marked by relationships of exploitation. To enforce this exploitation management must ensure control over the labor process. It was the basic thinking of Braverman, who was the first unifying figure of LPT. In his book “Labor and monopoly capital: the degradation of work in the twentieth century” (1974), Braverman argued that exploitation is a basic necessity in the capitalist economy. The necessary drive for exploitation has created organizational structures to control workers. Braverman saw Taylorism as the most advanced organizational principle for creating management control, and he was convinced that Taylorism would spread to all sectors of the economy. He studied how Taylorism was gradually implemented in administrative work, and found confirmation of his overall thesis.

The development of work since Braverman published his book neither confirmed nor denied Braverman’s thesis that Taylorism will spread according to leading figures in LPT. Taylorism is today realized through information and communications technology-based (ICT) production systems and through new organizational concepts such as LEAN. Taylorism has realized itself in neo-Taylorism (Pruijt 2003). However, quite early in the history of LPT it was realized that Taylorism was not the one best way of controlling employees. Edwards (1979) argued that what could be expected was a diverse development of management systems and forms of control. As a consequence, LPT searched for different types of management control and examined their impact on the working conditions.

Soft management control

In the 1990s “soft control” was spreading in working life in the developed economies. In management circles it was argued that it was favorable to replace strict boundaries with common values and corporate cohesiveness through a strong corporate culture and soft HRM (Storey 2001). This would create a learning and flexible organization which uses resources more optimally, creating a higher degree of adaptability and a capacity for innovation. Seen through the lenses of LPT, this development expressed a new, more sophisticated managerial control. Boundaries were demolished, but replaced with sophisticated new control mechanisms. Casey (1995) made an influential analysis of the process of disciplining in the so-called “learning organization.” Willmott and others developed a Foucault-inspired critique of soft management, showing how external control was internalized by the employees (Willmott 1993).

Management control through surveillance

In many workplaces soft control has been combined by increased surveillance. The development of ICT has created many new opportunities for surveillance. Already in the 1990s studies were published analyzing the sophisticated kind of control that the combination of autonomous teams and strict surveillance can create (Sewell 1998). In the first



decade of the new century many studies related to LPT were conducted, analyzing the sophisticated combination of individualization, soft control, and increased surveillance. Call centers, which formed an emergent sector, turned out to be the preferred sector for analyzing these new trends (Taylor et al. 2002).

Management control formed in a political process

Burawoy (1985) pointed out that the implementation of control was a political process where both management and employees played a role, as well as the national and regional context. Burawoy developed the concept “factory regimes,” each characterized by specific forms of control. Hyman (1987) confirms Burawoy’s argument in his conceptualization of different and parallel strategies of management control. Some of the managerial control strategies are based on technology and work organization, some are based on industrial relations and the labor market, and others are based on market conditions for the products. The concept of “factory regimes” is used in comparative analyses and in historical analyses of changes of labor processes.

To summarize

LPT identifies three kinds of managerial control:

1. Control through the work organization, with Taylorism and neo-Taylorism as the most appropriate means
2. Soft control where the managerial control is internalized by the employees
3. Surveillance

All three kinds of control will often be present at the same time at a factory, forming a specific “factory regime.”

According to LPT a successful strategy for improving working conditions in all “factory regimes” must be based on resistance and the creation of counter-control, defending the interests of employees. This basic assumption unites LPT in a critical dissociation from all concepts and ideas expressing a win–win strategy for improving working conditions and creating more productive work systems. Thompson (2003), who is a prominent figure in LPT, argues in more general terms “why management can’t keep their side of the bargain” in the win–win strategy. High trust, high commitment, high involvement, and good opportunities for learning do not constitute a stable situation because management cannot keep their side of the win–win bargain. The world of business is increasingly unstable as a consequence of global market conditions, and in the “finance-led accumulation regime” it is short-term profit and not long-term trust that counts.

Theories concerning psychosocial working environment on the contrary believes in the opportunities to improve working conditions, and at the same time improve productivity. According to Karasek’s famous theory on demand and control it is possible to improve productivity by increasing employee control in their work.

Employee control in psychosocial work environment theory¹

The basic assumption in this research tradition is that work can be mentally and physically destructive. However, work can also potentially be constructive, both mentally and physically. It depends on the quality of work, and especially on how much control the employee has in his/her work. If work is controlled by others and the employee has no influence over what they do and how they do it, and no learning opportunities, work is destructive. However, if workers control their own activities, have influence over their working conditions, and have learning opportunities, work is constructive. Robert Karasek is the most prominent figure in this tradition. His main contribution was the creation of the demand/control model (D/C model). The model was first presented in 1979 (Karasek 1979), and has since had a profound impact on the understanding of job quality.

The D/C model has played a key role in occupational psychology and psychosocial work environment research, and has provided a practical foundation for understanding the quality of working life. In the world of research, Karasek's model has mostly been used in a context of physical and mental health, and his most famous book where he applies the model has the title "Healthy work" (Karasek & Theorell 1990).

However, the D/C model was not only about health. The model was inspired by the profound working life movement in the 1970s focused on the quality of, and the democracy in, working life. Implicitly the D/C model was an argument for the positive health effects of democracy at work (Foley & Polanyi 2006). The D/C model made it possible to recognize that a solution to working environment problems was not simply a matter of the personality of the individual employee, or of protecting the workers. Changes at work, whereby employees gained control, were needed, and Karasek and Theorell (1990) proposed such changes: the creation of autonomous teams, employee participation in the implementation of technology, involving employees in the process of innovation, creating functional flexibility in the organization, and developing direct relations between producers and customers/users. These suggestions were similar to what was suggested in the work reform movement with roots going back to the early Tavistock school (Trist & Murray 1993), the American movement for "quality of working life" (Hackman & Oldham 1976), and the Scandinavian movement for democratization of working life (Gardell 1991; Sandberg 1992).

This reform movement is still alive. However, the name has changed to High-Performance Work Systems (HPWS) (Applebaum et al. 2000; Lawler et al. 1995) or High Road Strategies (Totterdill et al. 2002). Here the opportunities for pursuing a High Road Strategy, with working conditions more or less the same as recommended in the previous work reform movement, are explored.

The D/C model is extraordinary in that it is related to a huge and diverse work reform movement, it is simple and easy to understand, and it is possible to test the model in quantitative analyses. The D/C model gives very simple answers to very complex problems, which is both the strength and the weakness of the model.

The D/C model categorizes all kinds of jobs in two dimensions, which can be measured in surveys: the extent of job demands and the extent of job control (Karasek & Theorell 1990).

Job demands are defined as the quantitative aspects of the demands: Is the work excessive? Is it expected that the employee is working fast and hard? Are there conflicting demands (doing different things at the same time)?



Job control is defined by two variables: “Task authority” concerning the possibilities for the employee to influence the planning and execution of the work, and “Skill discretion” concerning variation, learning possibilities, and job-related creativity.

It could be argued that both dimensions in the D/C model deal with demands at work. The model reduces the demands to quantitative demands (how much to do), and the dimension of control deals with qualitative aspects of the demands (how to do).

According to Karasek and Theorell (1990), it is possible to map all kinds of jobs using these two dimensions. When jobs are described in terms of (quantitative) demands and employees’ control over execution of the work, four types of jobs can be identified: low-strain jobs, where employees have a high degree of control over their job and the demands are moderate. In contrast we have high-strain jobs, where demands are high and employee control is low. When both employee control and demands are low, jobs are characterized as passive, and conversely, active jobs are where both demands and employee control are high.

Hundreds of epidemiological studies using the D/C model have been conducted, and it is only possible to get an overview thanks to a number of review studies. These reviews document that high demands, combined with a low degree of control, increase the risk of stress symptoms, cardiovascular disease (Belkic et al. 2004; Kivimäki et al. 2012), muscle and joint problems (Lange et al. 2003), and mental disorders (Van der Doef & Maes 1999).

From the early stages of the model it has been discussed whether control can serve as a buffer for high demands. During the last decade, a number of review articles summarizing the findings in epidemiologic studies (Egan et al. 2007; Grönlund 2007; Lange et al. 2003; Van der Doef & Maes 1999) discuss this question within a broader sociological framework.

These studies question the win-win approach to the development of work, for which the D/C model has been used as a justifier. According to the win-win approach, a high degree of job control makes it possible for the employee to handle higher demands - high demands can even be a vehicle for learning and personal development.

The problem with the win-win hypothesis, however, is that the hundreds of studies testing the hypothesis show no evidence of it. The main result of the numerous studies is that increasing demands reduce health and well-being, and increased control improves health and well-being. But increasing control does not reduce the negative effects of high demands. Van der Doef and Maes (1999) indicate that the relationship between demands and control depends on the nature of the demands and the control. If the employee has the opportunity to control the demands, there is a positive relationship between control and demands. We find a similar argument by Busck et al. (2010), saying that employee control is increasing as it is defined by the D/C model, but demands are increasing at the same time - and especially new types of demands related to new forms of organization are increasing. Employee control, defined by Karasek, should also include employee control over the demands.

The lesson from the epidemiological studies based on the D/C model is, therefore, that employee control is in itself a positive factor in working life. However, it seems that the positive aspect of control depends on what the employees control and what they do not control - whether they have some degree of control over the quantitative demands. If a higher degree of employee control (control over how to do) leads to a certain degree of control over the quantitative demands, working conditions seem to improve.

In line with Braverman (1974), a prominent exponent of LPT, employee control over how to do their work could give employees a certain control over the quantitative demands. It is however not necessarily so. There are also jobs with a high degree of employee control over how to do the work but very low employee control over how much to do. It seems that there is a need for a third dimension in the D/C model: employee control over the quantitative demands.

This third dimension creates a bridge between Karasek's Demand/Control theory and LPT. In the LPT tradition resistance against unlimited demands is the most reliable way to improve working conditions. According to the Demand/Control theory it is possible to create a win-win situation where increasing employee control raises productivity without increasing quantitative demands. By confronting the two theoretical traditions we have created a tension between demands and control, which we in the following examine empirically.

Cases, data, and method

We have chosen two traditional manufacturing companies in the food industry. This choice was made for two reasons: First, the concept of boundarylessness was developed with reference to knowledge work (Allvin 2008). Here the erosion of boundaries is studied in traditional production companies. Second, traditional production companies provide good examples of lack of employee control, but may be considered as an extreme case regarding the possibility for an increase in employee control (Flyvbjerg 2011).

Presentation of the two cases

One company produces biscuits and the other produces sweets. Both companies have a provincial location, making them important to both local and regional employment. The companies have around 300 production workers each (primarily in unskilled positions) and around 50 white-collar workers.

Both companies are owned by capital funds and both are for sale for the right price. The funds have quite a short-term perspective. Their aim was to streamline and rationalize the companies. Top management was replaced in both companies four years ago, and charged with returning the companies to profitability.

Both companies have relatively simple production processes, which are very similar. Production basically consists of four processes: ingredients are mixed, the mixture/dough is shaped, the product is finished in an oven or drying cabinet, and the product is packed. The packaging requires the most labor, while shaping and drying are primarily automated, with monitoring. It is a sequential process which cannot easily be halted—once a production line is up and running it runs until the product is finally packed.

The opportunities for optimization in such a production process (without major investment) are few and simple:

- Increase the pace on the line
- Minimize production stops
- Minimize waste and error
- Perform quicker changeovers from one product to another on a given line



Management is focusing on all four elements. For the sweets factory, the paradigm is Lean. The biscuit factory is not talking about Lean, but doing almost the same things. However, social integration is very important here and management is aware that Lean has a bad reputation. According to the literature the consequences of Lean for quality of working life varies from one case to another (Schouteten & Benders 2004). In our cases the consequences seem to be quite similar.

The companies run 24 hours a day. Most employees work during the day-time. Both companies employ a majority of women, and there is a clear gender-based division of labor, such that the women typically work in packaging.

Data and method

Data from the two factories were collected in 2009 and 2010, where observations and 33 interviews were conducted. Three semi-structured interview-guides were used in the interviewing: one was aimed toward employees, one toward shop stewards, and one toward management. All three guides were structured after six themes: the interviewee's background, a description of the company, the development in work content, the development in work organization, the development in boundaries between employees and management and boundaries in work organization, and finally the experience of the psychosocial working environment. Each interview lasted up to one hour and was taped and transcribed. All positions and all shifts were covered. Each factory was visited four times.

In each factory we set up a steering committee. The members were shop stewards and representatives from skilled and unskilled employees, HR management, middle management, and top management. The steering committee was following the project and the results from the study were discussed by the committee. The feedback from the committee gave an important validation of the studies and the results.

In order to meet ethical concerns and to create an open atmosphere, confidentiality and anonymity were offered to the participants and the two factories.

Table 1 provides an overview of interview persons organized after position and gender, separately for each factory.

Table 1 Overview of the interview persons at the two factories—the biscuit and the sweets factory.

Factory	Biscuit		Sweets		Total
	Female	Male	Female	Male	
Position/Gender					
Management	1	3	2	3	9
Middle management	1		2	0	3
Shop steward		1	1	1	3
Unskilled workers	5	4	5	4	18
Total	7	8	10	8	33

Empirical analysis

The empirical analysis is divided into two parts: one focusing on the boundaries between employees and management, the other focusing on boundaries in work organization.

Aside from the two kinds of boundaries we also want to use our empirical analyses to explore our main theoretical-based dilemma. We want to explore and discuss whether an erosion of boundaries in industrial work implies a higher degree of employee control in work and thereby improves work environment as the theory of psychosocial work environment claims or whether an erosion destroys the platform for employee resistance and defense against management demands and thereby degrades the work environment as LPT claims. The theoretical-based dilemma is a guideline for the empirical analyses and the following discussions and is a way to address the two theoretical positions from LPT and the psychosocial work environment theory, respectively.

The boundary between employees and management

Both companies are traditional factories where the social relations include strong boundaries between “them” and “us.” There have been strong boundaries between the management and employees, between those on one production line and those on another, and between the various production groups. These boundaries are now being eroded. A common “we,” encompassing the entire company, is under construction, at the same time as an individualized “I,” emphasizing personal development, is in the process of replacing “us.”

Some employees see this as liberation, others as a threat toward established security and social relations.

The small local company against the international financial market

Management has invited all employees to discuss the difficult strategic position the factory is in. Both factories have held a one-day conference where all employees were invited, where the strategic position of the company was presented and discussed. Many employees feel that in doing so the management has recognized them as equal partners in the fight for the survival of the company. A widespread understanding of the company’s conditions has thereby been established, and for most employees it is unavoidable that each person will have to adapt to the new conditions:

“Employees must be imparted a greater understanding of the business, both in terms of the organization and in terms of finances. Employees must be self-driven in articulating demands, for example for training and education.” (HR manager)

A common narrative has been established in both companies. The owner of the company, the capital fund, is a common opponent for both management and employees. It has imposed very tough demands on the company: a deficit must quickly be turned into a surplus with only minor investment. In the sweets factory it has been proclaimed that all investments must have a maximum payback time of two years, because the time horizon



of the fund is no longer than that. It is widely accepted that rationalization and streamlining is required as well as cultural change in order to meet these requirements. In the sweets factory the new culture should be characterized by “passion,” “team spirit,” and “focus.” Posters with these three catchwords decorate the walls all over the factory.

The sweets factory is one small factory in a large international corporation with production units in many countries. The common goal here is to do better than the other factories in the corporation. The biscuit factory is a single company owned by a capital fund, and the goal here is to retain its position as an independent company.

This narrative provides legitimacy to streamlining, intensification, and staff reductions:

“Most [employees] are well aware that the purpose of lean is to improve the company’s financial position, but it is also commonly accepted that it is about preserving some jobs instead of losing them all” (middle manager)

Employees have generally accepted that it is necessary to dismiss some colleagues in order to keep the business running. By doing so employees are breaking the traditional boundary between “them” and “us,” where the battle for jobs and employment security was vital.

An employee expresses understanding for the need to intensify production and introduce new technology:

“The future for the production involves optimization and outsourcing. Intensification has not yet come to an end. The owners will invest in more technology which will decrease the needs for employees. We know this” (employee, nightshift)

However, there is still some ambiguity connected to the introduction of new technology:

“We have just got this new machine which reduces the hard work at the packing line, but the machine also save hands. That means that we are a little ambivalent about new technology. On the one hand we love to get rid of the hard work. On the other hand we want to keep our jobs” (employee, dayshift)

“We have to become even more effective to keep our jobs, but it is impossible to run faster. The only opportunity is to invest in new machinery and planning the production even better.” (employee, eveningshift)

“In the beginning a lot of us were afraid of losing our job. I experienced my colleague was laid off. But now we are a little more confident because we can see that we are earning money. That made us more optimistic. We can actually see that it pays to save and be more effective” (employee, dayshift)

Management has succeeded in the creation of a basic understanding among the employees that the future for the company is unsafe and only the employees who contribute positively have a future at the company:

“It has been really motivating that we now are able to follow our own performance at the production line. In the beginning I was somewhat provoked by the figures, but now we

have accepted the challenge. It is nice to be able to follow our performance. If we don't have red figures at our line then it is not our fault if the company has a deficit in the end.”
(employee, dayshift)

The role of trade union representatives

Both factories have a long tradition of union organization. At both factories, virtually all production employees are members of the trade union. There is one full-time union representative at the biscuit factory, and two full-time union representatives at the sweets factory. The union representatives work closely together with the HR managers in all matters relating to wages, skill development, employee participation in projects, organization development, layoffs, and recruitment. At both companies the representatives are members of the boards.

The union representatives see themselves as active participants in the effort to modernize their company. Their task is to ensure that modernization takes place with adequate consideration for employees, and in compliance with applicable regulations. The union representatives also work closely with the management to improve the working environment and create opportunities for personal development for the employees.

The classical boundary between employees and management is eroded via the union representatives' commitment and acceptance of the external requirements the companies are faced with. As shown by the following quotes, the union representatives legitimize the changes the management announces, even though the changes will impair the working conditions of their colleagues. They do it because they understand that it is necessary to survive as a workplace:

“All breaks have been reduced. People were fired and the work load was obviously increased. Gradually, we understood that savings are a matter of survival” (Union representative)

“You can see that there is a need for greater flexibility between the lines and sections”(Unionrepresentative)

The union representatives have a different role to the classic one. They promote the requirements set by the board and the management. For the union representatives these requirements are unavoidable:

“Many jobs have disappeared [...]. Sales have gone down and efficiency has increased. People work faster and have more duties—administrative tasks. More literary skills are required. The management keeps the really flexible employees—the ones that are easy to move to other functions” (Union representative)

Boundaries between insiders and outsiders

Personal development has become a central theme at both factories. A large project focusing on personal skills development is underway at the biscuit factory. A wage system has been introduced at the sweets factory which focuses on personal character



and skills. During performance interviews, managers place each employee in a matrix, where one axis represents professional skills (primarily the number of machines the employee can operate), and the other axis represents the degree to which the employee fulfills the company's values - "passion," "team play," and "focus." The goal is obviously to have as many employees as possible in the quadrant representing multiple skills and the right values. It is clearly expressed that employees outside this quadrant are likely to be laid off during the next round of retrenchments as indicated by the quote below:

"We talk about Xs and Ys. We've either changed the Xs into Ys or we have fired them. A Y-employee is an employee who follows our values in his daily work. It is an employee who constantly thinks of focus, passion and team play. An X-employee is the opposite" (production manager).

Some employees have found that this focus on personal development has been very beneficial. They have begun to see themselves as competent people who are capable of more than they had believed, both socially and professionally. Others view the development with skepticism. They do not trust the management, and find that the focus on personal-ity is inappropriate and a threat toward the established relationships between employees and the management:

"They fire people according to who involve themselves the least and do not want to learn new job functions. Today it is not possible to keep your job, if you behave like a traditional wage earner" (employee, night shift).

Dissolving boundaries between management and employees—summary

The traditional boundaries in factory life between "them" and "us" have been largely eroded in the two case companies. Erosion of these boundaries has both positive and negative consequences for quality of work. Employees are experiencing recognition and a kind of empowerment. Through information and involvement in practical decisions they are experiencing more control over their own situation. Employees feel that by their own actions and decisions they have become part of a community fighting for the preservation of local jobs. They also feel that management is investing in the "human resources" of the employees.

In line with the premise of the D/C model, the erosion of these boundaries gives employees the opportunity to experience more control over their own situation. However, LPT is also right: demands are increasing and the collective protection against boundaryless exploitation is weakening.

A win-win narrative has been created in both factories. According to Thompson (2003), this narrative can hardly be trustworthy, because management cannot keep their side of the bargain. Work will necessarily be tougher, and employees who commit themselves to the company are still at risk of getting fired. However, in these two cases the management is actually able to keep their side of the bargain, because they have not promised anything other than hard work for the selected few not fired.

This is partly due to the “factory regime” (cf. Burawoy 1985) dominating the two factories. There are few employment opportunities in the local area, and the local trade union is strongly organized but also very pragmatic in its policy.

Boundaries between the global market and the everyday life of the individual are being eroded. Who is to blame under these conditions when the speed of the line is increased and a new round of layoffs is announced? The global market has no responsibility. The only ones to blame are the individuals who cannot meet the new demands.

Boundaries in work organization

Both cases are traditional manufacturing companies with very strict boundaries between work tasks, within time and space, and between genders and trade groups. Most of these boundaries are—to some extent—dissolving. However, one boundary is being maintained: the boundary between the sexes.

Gender boundaries

When you walk into the production area as a visitor you immediately notice that some parts of the factory are populated with women and other parts with men. The men produce the dough the cakes and sweets are made from and the women do the packaging. The men look after the production machines and the women look after the packing machines. The technicians are men, and most of the people working with transport and logistics are men. The restructuring of production has not had any impact on the gender boundaries, and there is very little awareness of the boundaries between the sexes in either factory.

Work for the women is generally repetitive and fixed in time and space compared with men’s work. One possible positive aspect of the erosion of boundaries is restricted by maintenance of the boundary between the sexes:

“Men are a little stronger, but actually there could easily be men at the packing line and I have tried making dough when people were missing. So, yes of course, women could work with the dough, but nobody wants to change the fact that women work at the packing line and men mix the dough.” (female employee, packing line)

“Many of the girls will probably think it’s physically tough to work with the dough, but I do not really think so. It is at the packing line they are busy and it’s tough—not here with us working with the dough. We are much better off here. We have more flexibility—more freedom. When you are working at the packing line you are stocked to your place at the line for at least a half hour and then you are rotating to another job at the line for another half hour.” (male employee, mixing the dough)

Dissolving horizontal boundaries in work organization

The implementation of “just-in-time production” is part of the general streamlining of production processes at the two companies. Production is not stored, but shipped



directly to customers. This means that changeovers to other products now occur far more frequently than before. Whereas the same product might previously have run on a line for a whole week, it is now normal to change over once a day. This has several consequences:

Firstly, employees have to learn to change over production equipment quickly. Previously it was usually the technical staff that completed the changeovers. Now management is encouraging production staff to make the changeovers themselves.

Secondly, it means that each employee has to handle several different types of functions—both on an individual line and on other lines. In other words, greater demands are being placed on employees' functional flexibility. Requirements have increased from mastering one work task on one line, to mastering several work tasks on several lines.

This is only possible through training. Most training takes place on the job, carried out by peers. It varies greatly how long it takes to master a new job function—from a few days to several months. There are also great differences in the opportunities each person has to participate in training. For those, often women, who are bound to their post, training requires that another person replace them at their position, while some men have more flexible functions which can include some training. This means that training, especially for women, has to be planned very carefully, and it is largely a management decision as to who receives training in what and when.

Employees at both workplaces are experiencing greater demands on their skills. It is no longer enough to master the usual work functions. Everyone is expected to be able to do more. However, the employees cannot control their training themselves. This creates insecurity:

“The training opportunities are decided by production managers. It’s something which has to be planned, so it’s not that easy to get.” (working nightshift)

“I would like to learn more job functions outside the packing rooms, but it’s just hard to get the chance to learn because it takes time.” (working nightshift)

Flexibility also means that the predictability which has characterized the work is now disappearing to a certain degree. Before, employees were given the same task on the same production line every day, with the same colleagues. Now they often do not know where they are going to be working when they clock in. In principle they can be sent anywhere within the production process, depending on which products have to be run and where there is a need for extra hands. Their placement is only limited by which work tasks they have been trained in. This unpredictability is new and is received very differently by production employees as these two quotes indicate:

“I hate unpredictability. I want to be flexible, but I want to know what to do in advance.” (working day shift)

“I like it when a work day is varied. I do not know what I’ll be doing when I arrive.” (working evening shift)

The unpredictability is experienced differently by the employees but is presumably a condition that will become more common.

There are several positive consequences of the development toward a greater degree of functional flexibility:

- Each employee experiences more job rotation, reducing the strain from monotonous repetitive work.
- The skills of production staff are developed, perhaps leading to a higher degree of employability.
- Work is more developmental and interesting.

The more negative consequences are the following:

- Predictability disappears.
- Opportunities are getting more unequal: Those who have the high stress and less qualified work are those who are bound to their position at the production line. They also have most difficulty receiving training to get a more qualified and less strained job.

Dissolving vertical boundaries in work organization

The production staff has taken over tasks that previously belonged to the supervisor. Now the employees organize the work around the production lines themselves. They organize a rotation between different tasks. When the production line stops, which happens quite often, employees are not supposed to just wait for the supervisor and technicians, but to take action themselves. When the production line changes over to another product, which also happens quite often, employees organize that. Cleaning is another task the employees organize:

“We have eliminated all time gaps—every gap is filled out with tasks, at least when the machine is running without problems” (employee, evening shift)

“The development in technology has reduced the demands in work. On the other hand management now expects us to do all the cleaning. The time-gaps must be occupied by something useful.” (employee, dayshift)

The production staff is also supposed to involve themselves in the production planning, making suggestions to optimize the daily plans. They are supposed to report upward in the system every day on their performance:

“We have to do a lot of paperwork. There is always much to do. We have no informal-breaks. We are simply too busy.” (employee, night shift)

“The development has also provided more paperwork for everyone. Production stops at the line, and you have to write it down. Everything has to be registered nowadays. If someone has difficulty in writing, we help each other.” (employee, day shift)

Nevertheless, when the production line is running the individual employee does not have much authority. However, management involves employees in changes in work



organization in both companies, and employees take part in these changes. Many of the employees were involved in projects.

In the biscuit factory an energy-saving project driven by the employees was established. Management and employees shared the profit from the project. Many other projects were running, related to lean, commissioning new machinery, improving safety, etc:

“Many operators will probably find that they have a very little influence. When the line is running, it is running and that is true. They have influence when something needs to be changed, but not in the daily work.” (production manager)

The erosion of vertical boundaries is seen as very positive among those who are involved in tasks that were previously management tasks. However, many are not involved.

Continuous production, intensification, and dissolving the boundaries in time structure

Work has been streamlined through lean-inspired “continuous improvements,” especially the packaging line. The line is no longer shut down during breaks and lunch, but runs continually. Employees rotate between different functions; however, no one may leave their position without being replaced. To make breaks possible, one extra person is affiliated with the line to replace employees when they have their break. This means the team of employees on a line now takes breaks at different times:

“There has been a lot of optimizing. Before, we turned off the lines during breaks. This does not happen anymore. The machines are running constantly. The social aspect is gone. You do not have your breaks with your colleagues. The packing lines could easily be turned off, but we don’t do that anymore.” (working nightshift)

“Yes, the production lines are running all the time, and it is not certain that you can have your breaks with someone you like. But then we have a tradition for eating cake on Fridays and the whole team then takes a break together and I make a decision and turn off the line so we can share a break.” (middle manager)

Special breaks are arranged in the teams to discuss possible improvements to the production line. To make informal communication possible, women in particular extend their working hours free of charge to the company. They turn up half an hour before the beginning of the working day and stay half an hour after work is finished to smoke a cigarette, drink a cup of coffee, and talk.

One positive aspect of the fragmented breaks is the opportunity to get to know each other better. Now employees always have breaks together with colleagues they do not work with. That stimulates the erosion of boundaries between work groups, which have previously been very strict.

Dissolving boundaries in work organization - summary

Both productions have a well-established horizontal gender segregation - a segregation which in principle restricts the effort for more functional flexibility. Nevertheless, this boundary is not something that is discussed.

The management demand for more flexibility is met with a positive reaction from most employees but the interviews have shown that the demands can be difficult to fulfill. Even if the employees themselves want to learn more skills it is middle management which decides who and when. Furthermore, more flexibility will increase the unpredictability which for some of the employees will increase the experience of strain in everyday life.

Finally, the employees have experienced new work task. Some of this new task can be seen as an illustration of the erosion of the boundary between employees and management as, for instance, more administrative and planning tasks. Others are more illustrations of intensification of the workday as formal breaks disappear and informal breaks are filled with, for instance, cleaning.

Conclusion and discussion

We will now return to our two theoretical starting points: LPT, which conceptualizes employer control in the work process, and the work reform movement, represented here by Karasek, which conceptualizes employee control.

Control in the LPT perspective

We find all three types of management control, put forward in the LPT, in our cases, and they are all in a process of refinement.

1. *Control through the work organization*

The established production system is strongly influenced by Tayloristic production principles, but is under development in neo-Tayloristic direction: processes are streamlined; waste in time, materials, and products is reduced; time used for converting the production line is reduced; and the flexibility of the employees is increased. The employees are actively involved in this process, but the managerial control over the process is actually refined.

2. *Surveillance*

In recent years a comprehensive system for monitoring efficiency has been developed: the performance of each team is closely monitored. The result for each production line is calculated for each shift, and compared with results from other production lines. Qualifications and also attitude for each employee are registered.

3. *Soft control, where management control is internalized by the employees*

Many resources are used to exercise soft control. Employees are invited to participate in discussions of the company's strategy. Employees are assessed individually on their skills and their ability to meet the values, which in the candy factory is expressed by three catch words: "passion," "team spirit," and "focus." This assess-



ment is discussed with each employee in a performance interview. It is well known that this soft control can have hard consequences: sacking. Management control is legitimized “factory regime,” where employees and managers are united against the owners. The two factories are located in areas with few job opportunities, and maintaining the jobs is created as the common goal. The removed capital fund, who is the owner, is the common counterparty for everyone in the company. A coalition between workers and management to increase efficiency is established, and the local trade union plays an important role in this coalition.

Control in the working environment theory

While management control is increasing according to LPT, employee control is increasing according to Karasek and working environment theory.

1. Learning opportunities

Employees in the production are learning to work at different production lines. They are learning to repair and maintain the production system. They take part in production planning, and they participate in projects giving learning opportunities. However, they do not fully control whether they will achieve these learning opportunities. In many cases, management must give them access to the learning opportunities.

2. Job autonomy

Once the production line is running, there is virtually no job autonomy. Job activities and pace are externally determined. However, it is expected that the employees constantly are alert, and interfere when something is wrong in the production. Employees are involved in maintenance of the production lines, which has given them autonomy that they have not known before, and many employees participate in projects, which give them a new kind of autonomy.

3. Control over the demands

The increased employee control is clearly accompanied by increased demands. With reference to the D/C model, a positive factor (increased employee control) is accompanied by a negative factor (increased demands). The quantitative demands are increasing: production speed increases and the formal and informal breaks are getting shorter. In some job functions, the physical load is a serious strain on the body. However, some of the demands (for instance, maintenance, conversion, and quality control) generate increased employee control. These demands put forward by the management give at the same time employee control.

Comparing the two perspectives

Thus we see that management control develops in a gradually more sophisticated direction, and all forms of management control, as applied in LPT, is present in the two case companies. At the same time we see that employee control, as defined in work environment theory, is increasing. According to Karasek’s theory, this is not necessarily a contradiction. The relation between management control and employee control is not

necessary a zero sum game. It is possible to increase management control and employee control at the same time to the benefit of productivity. To establish this mutual benefit, it seems however to be necessary for employees to maintain and further develop some degree of control over the quantitative demands.

Erosion of boundaries and control

In this article we have studied the erosion of boundaries in two traditional factories belonging to the food industry. Boundaries in work organization and between employees and management have been changed radically. This erosion of boundaries has been studied from two different theoretical perspectives: work environment theory based on Karasek's D/C model, which focuses on employee control and improvement of the psychosocial working environment, and based on the labor process tradition, where management control is studied.

The erosion of boundaries in the two factories has been followed by organizational changes that are broadly in accordance with the recommendations put forward by the early work reform movement, and supported by work environment theory. These recommendations are still used in relation to improvements to the psychosocial working environment, often with reference to Karasek and his D/C model. Most of the employees interviewed expressed a positive assessment of the changes in work organization. They appreciated the increased influence in the planning of their work, and the new opportunities for learning. The two cases thereby confirm the presumption of the D/C model: influence and learning opportunities are positive factors—confirmed here by qualitative methods.

At the same time, however, skepticism toward the current efforts to reform working conditions has also been confirmed. Employees are gaining more influence over their work (the control dimension in the D/C model is improving), but the demands are increasing.

Management is using all the methods of management control listed in LPT: a strictly regulated work organization which maintains its Tayloristic structure while making it more flexible; a political regime where the survival of the company is defined and accepted as the common goal; surveillance of individual and team performance has been established; and soft control via performance appraisal interviews, social events, etc., through which employees internalize the defined "necessities."

The quantitative demands have been increasing: work intensity has increased, and formal and informal brakes have been reduced. Furthermore, new demands have been introduced: ability and willingness to learn, readiness to involve oneself in the development of the company, ability and willingness to be a good "teampayer." The increase in employee control seems also to be a demand.

The most obvious conclusion is that the D/C model's implicit recommendation to develop work by demolishing the boundaries of traditional Taylorism, to create empowerment and learning opportunities at work, is an illusion. An apparent increase in employee control is followed by increasing management control, and the result is more stressful jobs and a weakening of worker solidarity.

However, it is inevitable that employees will see the increased influence and learning opportunities at work as progress. The big challenge is therefore to find ways whereby the positive aspects of the erosion of boundaries in the work organization do not simultaneously create boundaryless demands, because employees are no longer able to



maintain their collective control and established restrictions on the demands imposed by management. Or to put it in another way, the big challenge is therefore to find ways to unite the perspectives of Karasek's D/C model emphasizing job development and the perspective of the LPT, emphasizing collective resistance against boundaryless quantitative demands from the management.

Following the LPT perspective, it is necessary to restrict the quantitative demands through collective action. Following the perspective of Karasek and the theories on psychosocial working environment, it is possible to build in restrictions on the quantitative demands without losing productivity, if qualitative demands as learning, creativity, and responsible autonomy are increased. Following the perspective of LPT the qualitative demands as learning, responsible autonomy, and creativity can divide the employees and lead to uncertainty and a sense of injustice. However, the demands for learning and involvement could be negotiated collectively, made transparent, and implemented in ways that are perceived as fair. In the two case companies, it is however difficult for the union to deal with the new conditions and new demands in such a way that the collective strength is maintained.

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End notes

- ¹ Here we will only refer to Karasek's influential demand/control theory. We do not refer to other theories concerning psychosocial working environment where the concept of control is not included.