Erosion of boundaries and new forms of control in factory work

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This paper examines how control is affected by the on-going 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 control at work (employees control how and when to do what). This assumption is supported by theories on the psychosocial working environment, here represented by Karasek (1979) and his successors. 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 ‘labour process theory’. This paper studies control and the erosion of boundaries in two case factories in the food industry. Two perspectives are applied: the psychosocial working environment and ‘labour process theory’.

Keywords: Control, boundarylessness, food industry, psychosocial working environment,

Introduction

In many jobs, established boundaries between work and leisure, between various job functions, and between employers and employees are gradually eroded (Allvin 2008; Hirchhorn & Gilmore, 1993; Lund 2007, Kamp & Lund, 2008; Kamp et al, 2011). This is a development which is apparently in line with the recommendations expressed in psychosocial work environment studies, with primary reference here to Robert Karasek’s demand/control model (1979), which subsequently played a major role in assessment of job quality. The individual jobs were enriched by more diverse tasks. This provided more opportunities for learning, and could lead to autonomy in work.

In Labour Process Theory 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 management have been followed by neo-Taylorisation and new forms of management control. Following Labour Process Theory, it is most likely that the trend which we refer to as a move towards boundarylessness will weaken the defence employees have developed towards management control.

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

Our study was conducted in two case companies in the Danish food industry. The boundaries here have been 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 also created resistance and a certain degree of employee control. Boundaries between management and employees have made a collective protection of interests possible. Boundaries in time and space have created restrictions on working hours, and boundaries between job functions have created an opportunity for employees to develop some control over the intensity of their work.

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This paper therefore focuses on the horns of a complicated dilemma: The erosion of boundaries in traditional manufacturing industry creates opportunities for employees to be released from strict and humiliating employer control. At the same time however, this erosion weakens the established system of defence created by employees to protect themselves from boundaryless demands (Goldthorpe et al., 1968, Lysgaard 1999).

In our analyses of the cases we will distinguish between two kinds of boundaries:

- Boundaries between employee and management
- Boundaries in work organization, including time, space and job functions

**Boundaries and control in labour process theory**

Labour process theory (LPT) was established back in the 1970s and has developed in diverse directions since then. However, the basic assumption that unites LPT is that work was and still is marked by relationships of exploitation. Braverman 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 system for creating employer 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.

LPT maintained Bravermans interest in the exploitation and control (Thompson & van den Broek 2010). However, Taylorism was not seen as the one best way of controlling employees. Edwards (1979) argued that what could be expected was a diverse development of management systems, adjusted to different economic and technological conditions of production.

Later on, the political aspect of control was emphasized. Burawoy (1985) pointed out that the implementation of control was a political process where both employers and employees played a role, as well as the national and regional context. Different control regimes are developing. Hyman (1987) confirms Burawoy’s argument in his conceptualization of different and parallel strategies of employer control. Some of the employers’ control strategies are based on technology and work organization, others are based on industrial relations and the labour market, and others are based on market conditions for the products.

In the 1990s ‘soft control’ was spreading in working life in the developed economies. In management circles it was argued that it was favourable 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, understanding of 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 internalised by the employees (Willmott 1993).

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 analysing 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, analysing the sophisticated combination of individualization, soft control and increased surveillance. Call centres, which formed an emergent sector, turned out to be the preferred sector for analysing these new trends (Taylor et al 2002).

LPT is united 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 employers 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 employers 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.

According to LPT, in order to understand what is going on in working life it is necessary to understand the way employers create regimes of control. Working tasks, work intensity and loyalty are controlled through work organization (Tayloristic or post-Tayloristic), technologies, surveillance and soft control expressed in ‘social technologies’.

LPT sees the only successful strategy for improving working conditions as based on resistance and the creation of counter-control, defending the interests of employees. It is recognised that the boundaries created in industrial society, following the principles of Taylorism and bureaucracy, had a number of negative effects – Taylorism has, as Braverman expressed, ‘degraded’ work. However, the boundaries had also created frames for resistance and defence. A consequence of tearing down the boundaries could be that the defence and resistance would be weakened, and the ability of the company to rationalise would be unlimited.

**Boundaries and control in work environment theory**

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. 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 (2000) 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) (Lawler 1995, Applebaum et al. 2000) or High Road Strategies (Totterdill et al 2002). The means to develop a better working life are more or less the same as in the previous work reform movement.

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 categorises all kinds of jobs in two dimensions, which can be measured in surveys: the extent of job demands and the extent of job control. It is possible to map all kinds of jobs using these two dimensions (Karasek & Theorell 1990). When jobs are described in terms of these two dimensions (control and demands), four types of jobs can be identified. Low-strain jobs are where employees have a high degree of control over their job and the demands are moderate. In contrast, high-strain jobs are 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), 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 papers summarizing the findings in epidemiologic studies (Van der Goeef & Maes 1999; Egan et al. 2007; Lange et al. 2003) and Grönlund (2007) 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 wellbeing, and increased control improves health and wellbeing. But increasing control does not reduce the negative effects of high demands. Van der Doef and Maesen (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.
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. To improve employee control, established boundaries must be rejected – the boundaries between jobs, skills, departments, producers and users must be rejected and employees must control their own work. 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 demands. If a higher degree of job autonomy includes control over the demands, working conditions seem to improve. If, on the other hand, job autonomy and better learning opportunities are followed by increasing demands (employees do not control the demands), the positive aspects of increased control are doubtful. Employees have gained some control over work activities, but employers may have increasing control over the demands. Then we come back to LPT again, because LPT offers an approach to analysing the content of and conditions for management control.

Our main research question is therefore:

1. Does an erosion of boundaries in manufacturing work imply a higher degree of employee control in work and thereby improve the work environment? Or
2. Does an erosion of boundaries in manufacturing work destroy the platform for employee resistance and defence against employer demands and thereby degrade the work environment?

Cases, data and method
We have chosen two traditional production companies in the food industry. This choice was made for two reasons: First, the concept of boundarylessness was developed with reference to knowledge work (Alvin 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 labour, 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 optimisation in such a production process (without major investment) are few and simple:

- Increase the pace on the line
- Minimise production stops
- Minimise 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.

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 labour, 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. Each interview lasted up to one hour and was taped and transcribed. The data analysis was initially structured around boundaries, control and demands, but we were also open to unexpected emergent themes. Table 1 presents an overview of interviewees. All positions and all shifts are covered. Each factory was visited four times.

In order to meet ethical concerns and to create an open atmosphere, confidentiality and anonymity were offered to the participants and the two factories. Each factory was presented with the results, followed by a discussion.

Table 1.

Insert

**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.

**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 individualised ‘I’, emphasizing personal development, is in the process of replacing ‘us’.

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

**Narrative of the small local company and 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 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 employers 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 rationalisation and streamlining is required as well as cultural change in order to meet these requirements. In the sweets factory the new culture should be characterised 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.

The role of trade union representatives

Both factories have a long tradition of union organisation. 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, organisation 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 modernise their company. Their task is to ensure that modernisation 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 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" (Union representative)

The union representatives have a different role to the classic one. They promote the requirements set by the Board and management. For the union 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 fulfils 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 scepticism. They do not trust the management, and find that the focus on personality is inappropriate and a threat towards the established relationships between employees and 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 and discussion**

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, labour process theory 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 employers 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 employers are actually able to keep their side of the bargain, because they have not promised anything other than hard work for the select 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. There is only one to blame: the individual.

**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.

**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 night-shift).

"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 night-shift).

Flexibility also means that the predictability which has characterised 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 towards 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:
- 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 have 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 just to 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.

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

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 take 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 night-shift)

"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.

**Control and demands in work organization – summary and discussion**

From a D/C perspective, the development of work organization in the two case companies is ambiguous.

On the one hand, employee control in daily work is increasing. When the employee can handle more functions, he or she will have better opportunities to create a working day in accordance with his or hers wishes. Increased flexibility in job functions means that the individual is not locked to the same job functions and the same colleagues. Rather, they will become part of a larger community, which in principle can include all employees at the workplace. The individual employee is no longer limited to colleagues on a single line or team.

Learning opportunities, which are the second component of ‘employee-control’, were also increasing. Most employees were learning to handle more functions, and to organize work and involve themselves in changes. However, decreases in employee control were also observed. Unpredictability in relation to what to do and where to work was seen as loss of control by some employees.

On the other hand, demands are also increasing. First of all, work intensity is going up. The constant streamlining of processes has been accompanied by a reduction in formal breaks. However, what seems to contribute more to intensification is the elimination of informal breaks. When a production line is down because of a changeover or breakdown, it no longer provides a break for employees because there is always something else to do: maintenance, work related to the changeover, cleaning or project work. Functions which were previously management tasks are now also additional demands on the production staff.

The increased employee control is clearly accompanied by increased demands. With reference to the D/C model, a positive factor (employee control) is accompanied by a negative factor (demands). However, some of the demands bring increased employee control. These demands are linked to job improvements and are therefore presumably less problematic.

From an LPT perspective, both the development of employee control and the development of demands are problematic because both contribute to an individualization of the employees and weaken their position in opposition to the employers. To be functional, flexibility is a precondition for keeping the job, but only those selected by management are given the necessary training to be functionally flexible. Intensification of the daily work will presumably reduce the opportunities for informal dialogue. Management impose the demands of the market on the employees by involving them in production planning and monitoring the output. Involvement and surveillance are sophisticatedly combined.
Finally, it appears that women, who have the most location-bound and physically demanding work, are the ones who will benefit the least from the changes. It is more difficult for the women to be functionally flexible. It is more difficult for them to receive training in new functions because they are location-bound in their daily work. The women continue to have the most physically demanding work, and many of them feel the loss of fellowship due to the new unpredictability and lack of common breaks.

The boundary between work functions that are reserved for women and work functions that are reserved for men is the only boundary which is not being questioned. No one even tries to discuss this boundary. If management could erode this boundary, it would provide opportunities for improving working conditions and more flexibility and learning opportunities.

**Discussion and conclusion**

In this paper 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: a. based on Karasek’s D/C model, which focuses on employee control and improvement of the psychosocial working environment, and b. based on the labour process tradition, where management control and possibilities for collective resistance are studied.

The erosion of boundaries in the two factories has been followed by organizational changes which are broadly in accordance with the recommendations put forward by the early work reform movement. 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, scepticism towards 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 are also losing the collective control previously linked to the boundaries. Demands are therefore increasing (the demand dimension of the D/C model is deteriorating). Employee control at work is increasing, but employer control over work is also 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; and soft control via performance appraisal interviews, social events, etc., through which employees accept individual responsibility. At the same time, refined surveillance of individual and team performance has been established.

Our study clearly confirms that the erosion of boundaries in work organization leads to intensification of work. Social support is also reduced because of the work intensification and reduced opportunities for informal communication. With reference to the D/C model, it can be concluded that employees gain some autonomy and learning opportunities, but at the cost of increasing demands and reduced social control.

The erosion of existing boundaries between managers and employees and between different groups of employees in the factories is leading to a kind of employee ‘empowerment’. They are being given insight into the company's development conditions, and being invited to participate in taking the ‘necessary’ steps to
improve business by increasing productivity. However, this involvement of the employees primarily provides management legitimacy for taking the ‘necessary’ steps, including intensification and staff reductions.

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 to unite the perspectives of the D/C model and the labour process tradition. Or to put it another way, to find ways whereby the positive aspects of the erosion of boundaries 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.
References


Table 1. An overview over interview persons organized after position and gender, separately for each factory

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<th>Position/Gender</th>
<th>Factory</th>
<th>Biscuit</th>
<th>Biscuit</th>
<th>Sweets</th>
<th>Sweets</th>
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<tr>
<td></td>
<td>Male</td>
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<tr>
<td>Middle management</td>
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<td>Unskilled workers</td>
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