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To cite this version:

Ian Greenwood, Hanne Randle. Team-working, Restructuring and Skills in UK and Sweden. European Journal of Industrial Relations, 2007, 13 (3), pp.361-377. 10.1177/0959680107081750 . hal-00570970

HAL Id: hal-00570970

https://hal.science/hal-00570970v1

Submitted on 1 Mar 2011

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European Journal of Industrial Relations

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Volume 13 Number 3 pp 361–377 www.sagepublications.com

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Team-working, Restructuring and Skills in UK and Sweden

ABSTRACT ▪ This article investigates the connection between team-working, workplace learning and skills and industrial relations in six manufacturing plants in the Swedish and UK steel and metal sectors. The forms and processes of team-working observed do not conform to a stereotyped dichotomy between Swedish autonomous work organization and more hierarchical UK traditions. Our findings demonstrate the importance of product markets, sectoral effects and management processes, and the role of strategies as well as institutional structures.
KEYWORDS: steel and metal sectors ▪ team-working ▪ workplace industrial relations ▪ workplace learning

Introduction

This article uses case studies of six plants in the Swedish and UK metal industries to explore the connection between team-working and workplace learning, skills and industrial relations. Findlay et al. (2000: 239) have suggested that, 'the core of teamwork remains a new approach to skills'; while Marks and Lockyer (2004) stress the importance of workplace learning, of a formal, informal and collaborative nature, for production processes. Also, and importantly, team-working and skills and their inter-connection are dynamically connected to workplace industrial relations.

Discussion and analysis of team-working are typically framed by the distinction between socio-technical and lean teams (Benders and Van Hootegem, 1999; Sederblad, 2004). Socio-technical teams are commonly seen as associated with the regulatory frameworks and production cultures of Nordic economies, whereas lean teams, whilst originating via Japanese production systems, are typically portrayed as characteristic of developments and practices in Anglo-Saxon economies (Benders and Van Hootegem, 1999; Payne and Keep, 2005). Lean teams are generally associated with work intensification, flexibility through task enlargement, strong management control and constrained job autonomy (Garrahan and

DOI: 10.1177/0959680107081750

Stewart, 1992). In contrast, features of socio-technical systems include job autonomy, long job cycles, functional flexibility and reduced worker hierarchy (Appelbaum et al., 2000; Bacon and Blyton, 2003).

In an assessment of team-working typologies, Bacon and Blyton (2000) take this distinction further and classify teams into either high-road or low-road variants. The former exhibit task variety, with skilled craft workers integrated into teams, the integration of craft and production tasks, high levels of multiskilling and elements of autonomous working. These are useful analytical variables. Such characteristics point to the importance of skills for the functioning of teams and, within the team-working literature generally, the importance of the development of skills and learning is clear (Adler and Cole, 1995; Thompson and Wallace, 1996). However, in order to gain more analytical leverage into the processes of team-working and address our main research questions, the roles of workplace learning and skills need further consideration, especially as the issue of task variety is so prevalent in the analysis of team-working. For the purposes of this article, specific features of team-working have been chosen to permit analysis and comparison between socio-technical and lean teams. These coalesce in important ways around three dynamics: learning and skills development; autonomy and flexibility; and workplace industrial relations.

Across the European metal sectors, the focus of our study, manufacturing processes indicating change from labour-intensive to knowledge-intensive production. This process runs in parallel with the requirement for higher levels of flexibility and, at the workplace, is reflected in demands for increased levels of multiskilling (Stroud and Fairbrother, 2006). Team-working is associated with increased levels of training and skills and hence is implicated in these developments (Bacon and Blyton, 2003; Thompson and Wallace, 1996). However, while the high-road approach involves employee development and the creative contribution of workers to product and process innovation, the low-road approach pursues competitive success through cost control and work intensification.

Ellstrom (2005) describes two forms of workplace learning that can shape the development of work organization. First, *developmental* learning involves transformation, risk-taking, critical reflection and the creation of new knowledge. Second, *reproductive* or *adaptive* learning is associated with the transmission of existing knowledge to achieve the mastery of specific given tasks. One key point, according to Schuring (1996), is the ability, and space, to reflect on work, as this can enhance organizational learning, and in doing so contribute to the furtherance of specific forms of team activity. Drawing this together, it might be expected that developmental learning is more central to socio-technical systems of team-working, and reproductive learning to lean systems.

The ways in which team-working, learning and skills confront each other in the workplace will inevitably be mediated by the prevailing institutions of workplace industrial relations (Murakami, 1998). To the extent that workplace institutions of industrial relations are themselves shaped by the broader legal and regulatory framework, it is unsurprising that comparative analysis of team-working and skill systems, and their insertion within industrial relations structures, is typically framed against national stereotypes (Benders and van Hootegem, 1999; Murakami, 1998; Ortiz, 1999; Payne and Keep, 2005). Typically, the team-working literature associates the socio-technical (high-road) approach with Nordic countries, and lean teams (low-road) with Anglo-Saxon economies.

Against this backdrop, the article explores the connections between the development of teams, the role of learning and skills within this and the mediating effect of workplace industrial relations. To the extent that analyses of team-working are typically associated with notional national systems or stereotypes, specific features of team-working that might discriminate between Swedish and UK systems have been used to order our empirical analysis. These are presented in Table 1.

TABLE 1. Characteristics of 'Stereotypical' Swedish and UK Teams

	Swedish (high-road)	UK (low-road)
Autonomy and flexibility	High autonomy	Non- or semi-autonomous teams
	Some control over quality, workflow, planning, staffing, work tasks, learning	Some control over internal division of labour and quality
	Mainly functional flexibility; frequent task rotation	Numerical and some functional flexibility; constrained task rotation
Learning and skills development	Multiskilled teams with combination of craft and process skills	Multiskilled teams
	Focus on functional flexibility and vertical up-skilling	Problematic functional flexibility (weak blend of craft and process skills). Main focus on task expansion: horizontal skilling
	Ready availability of training	Availability of training uneven
	Emphasis on developmental learning	Emphasis on adaptive learning
Industrial relations	Partnership/cooperative	Typically adversarial

Research Background

The research forms part of a wider EU project investigating the impact of restructuring and change within the European steel and metalworking sectors. These sectors have experienced continual restructuring and change, with heightened international competition and product market change allied with corporate consolidation and technological innovation (Stroud and Fairbrother, 2006). Waves of restructuring have led to extensive job losses and plant closure and reorganization of work, with team-working increasingly important (Bacon and Blyton, 2000). With increased capital intensity, the need for greater workplace flexibility has focused the attention of both unions and management on the issues of knowledge and skills (Stroud and Fairbrother, 2006); and in all our case study sites, the introduction of team-working has been associated with training and re-skilling initiatives. This allowed insight into the development and use of skills and the interconnection between skill formation and industrial relations.

The research consisted of qualitative case studies in production units of six sites in two sectors, steel and engineering sectors. The cases were chosen not because they were statistically representative but rather because they seemed theoretically pertinent. Primary data were collected through plant-level semi-structured interviews with team-workers (teams are a combination of former craft and process workers) local union workplace representatives, management specialists and national union officials. Interview data were supplemented by documentation from both company and union sources. Seminars, group discussion, work shadowing (close observation of individual team workers) in the Swedish plants and observation, at for example Learning Centre Partnership meetings in the UK, complemented interview data. In total, 135 interviews were conducted in the UK and 110 in Sweden. Team-working had been introduced in all the cases, although had taken slightly different forms and was supported by learning and training practices in variable ways. Across both Swedish and UK sites, teams contained on average seven multiskilled workers. For reasons of confidentiality we refer to the plants by pseudonyms. In the context of the UK, the description 'craft worker' equates to an apprentice trained worker, either electrical or mechanical, whilst 'process worker' refers to semi-skilled or 'unskilled' workers (only in terms of an absence of formal qualifications, although some process workers had gone through a production apprenticeship).

The Swedish research involved two sites. *SweProc* is a Finnish-owned steel-processing firm employing 440 people. It competes internationally in the production of high-quality steel bars. It has an ageing workforce and recent redundancies had cut the workforce by a third. Union membership is nearly 100 percent. *SweEng* is a Norwegian-owned engineering company that competes internationally in the production of specialized steel

equipment. It employs 235 people, the majority aged over 50. Small-scale redundancies have occurred in recent years. Union membership is 100 percent and the union is influential in the design of training strategy.

The UK research included four sites. *UKA* is part of a multinational steel company. It employs 700 people. *UKB* and *UKD* are both integrated iron and steel works, employing 3000 and 4200 workers respectively, and part of the same multinational. All three companies have high levels of union membership, although union influence in corporate training strategy has been low in recent years. All had experienced considerable waves of redundancies in recent years and management was continuously looking at new ways to cut costs and improve efficiency and market share. *UKC* is a Finnish-owned steel-smelting (electric arc) works that employ 300 people. Union membership is high. Employee turnover has been low in the recent past although there have been some voluntary redundancies. The company is pursuing a cost reduction strategy that has focused heavily on flexible forms of working through multiskilled teams.

Team-working in Sweden

Since 1990 both Swedish firms have experienced restructuring and job losses and have moved away from standardized output to that based on higher quality, customer specified products. At both sites, workers are multiskilled and flexible, and the pressure to become even more so is increasing. Team-workers have more autonomy than their UK counterparts, though autonomy in SweProc has declined as a result of job losses. Both firms are commercially successful.

Autonomy and Flexibility

Teams at SweProc organize workflow but do not manage team numbers or plan workflow. At SweEng, teams plan the workflow and are also involved in the development of new products and manufacturing lines and communication with customers and subcontractors. They also plan for staffing levels and employee learning needs. 'We plan work so that people can learn from each other when working together' (team-worker). To facilitate training, teams have the ability to provide slack in the system and vary workloads.

At both sites the number of line managers has fallen, making teams increasingly responsible for process outcomes. However, the impact of restructuring has differed. The cost reduction strategy of SweProc has led to a marked reduction in the size of teams, intensification of work and, at the same time, a requirement for increased flexibility; yet a lack of time and space to train work against this goal. Workers are tied more tightly

to specific work-stations. Team autonomy has reduced and the responsibilities of teams now exceed their control, with autonomy only extending to the deployment of existing staff. This has increased levels of stress. 'The focus of restructuring is on decreasing the number of employees and downsizing work teams' (union representative).

By contrast, in SweEng, the span of team control matches team responsibilities: 'the work teams have a great freedom in how they chose to place the work tasks in the team, the job is planned and organized as team work' (team member). Although team-workers appear to accept longer hours and the disciplines of tighter customer deadlines, there is growing concern about the increasing intensification of work and lack of slack in the system.

Learning and Skills Development

At both sites, management and workers consider the acquisition of workplace skills and multiskilling to be important. Restructuring has, however, created different learning cultures in the two plants. At SweEng, management and workers consider continuous personal development and high skill levels vital to understanding changing production methods and to company competitiveness. Individual and team development and problem-solving are part of the learning culture, and teams are encouraged to suggest solutions to manufacturing problems. Participation in learning, both formal and informal, is viewed as an everyday activity and developmental learning is deeply embedded. Team members consider job rotation as crucial to their ability to face change, comprehend workflow and better understand each others' jobs. The union considers the development of individual competences essential, 'we need to make a plan for developing the workplace to fit future requirements. We need to develop new methods for work rotation' (union representative).

In contrast, at SweProc the learning culture is adaptive rather than developmental. Although some certified training is available, learning relies heavily on informal worker-to-worker contact. According to the maintenance manager, the lack of formal learning is a problem because standardization of procedures is difficult to achieve. Workers are responsible for arranging cover for their jobs if they want to leave their post to train, yet 'it can be difficult to manage the time needed for mentoring, there is simply no surplus time or staff for these tasks. Even if training is planned, facilities can be withdrawn at the last minute' (manager). This further reduces flexibility and ties team members to specific jobs. Union representatives believe that training will lead to even greater work intensification, and are consequently withdrawing support for new training initiatives. Team members consider their skill levels inadequate to deal with the extra flexibility expected of them, '[line] management puts the responsibility on the individual worker to cope with the changes and to learn

new techniques' (team member); 'at the moment the work pace in production is too high to provide time for training' (team member). Reduced staffing levels and a lack of structured training cause some team members to refuse to perform tasks that they consider unsafe. At SweEng the situation is different. Formal training is provided at an on-site training centre and in order to release people from the line to train, workflow is slowed.

At SweProc, time for rest beaks has been reduced with workers increasingly tied to their workstations. Breaks formerly provided the occasion for reflection and discussion about work, 'there was more time for socializing, when you learn from others that is when you glue the team together' (team member). The reduction in social learning hinders understanding of workflow and the development of new ideas. Teamworkers believe that the absence of regular rest breaks will make them focus increasingly on their own areas becoming isolated from other teams. This experience contrasts to that at SweEng, where learning is both formal and informal and workers are encouraged to share experiences and reflect on new ways of approaching new jobs.

Industrial Relations

Both plants have recently become foreign-owned. Union density is high but opportunities for union participation in decision-making processes differ. Despite work intensification, unions at SweEng work cooperatively with management and participate in workflow control and setting learning requirements and training for skills. Management regards the union as a partner and co-agent for change. The union view is, 'we want to map employee education and skill levels in order to be able to plan for future activities that relate to competence development' (union representative).

This contrasts with the situation at SweProc, where the relationship between management and the union has become increasingly strained. The new owners introduced a business strategy focusing on cost-cutting and customer satisfaction. During this restructuring 'there was no codetermination … , management in practice made all the decisions'; whereas 'previously the trade unions played an active part in the decision-making process in relation to the future of the plant' (union representative). For example in 1999, during a round of redundancies, management and unions established a resource centre ensuring that a majority of the redundant workers found employment.

The union at SweProc has little or no input to job design or business strategy. Nevertheless, the chair of the local union does not believe that use of codetermination legislation and national union structures is a satisfactory alternative: 'if we cannot reach agreement at the local level, then the issues will be lifted to national level and the local trade unions will become spectators in the negotiation process'.

Team-working in the UK

Discussion and analysis will concentrate on general patterns observed across most or all of the plants, since similarities were striking. Restructuring has occurred at all sites; in response to international competition and increased customer demand for more consistent and often higher quality products, management has attempted to increase productivity, reduce both costs and headcount and increase flexibility. The introduction of multiskilled teams in the past decade was central to the reorganization of work and job reduction: 'multiskilling helped to reduce numbers' (production manager). Before then, unions strongly influenced the distribution of skills, but team-working has been associated with greater management control over the work process, 'to get management back in charge' (senior production manager).

Autonomy and Flexibility

Craft and process workers have been incorporated into multiskilled teams, although all plants have retained a core of dedicated craft workers. This was a corollary of the strategic decision to cut jobs. Workforce reductions meant that more had to be extracted from workers, via multiskilling, to meet the levels of flexibility needed within the restructured production process. The introduction of team-working was thus accompanied by a significant training initiative, designed to increase flexibility through the provision of basic craft skills to process workers and process skills to craft workers. In teams, craft workers are now expected to work the line and process workers to perform basic maintenance operations. However, many former process workers appear to lack the confidence to use their maintenance skills, believing that training should have been more extensive and that 'you are a Jack-of-all-trades, master of none' (team member). A leading process union representative was trained in basic craft skills but states that 'we came back from college and I've never picked up a spanner since'.

These concerns are understood by line management; 'there is no real mechanism to force people to be multiskilled. I wanted this but it didn't happen' (production manager). This has caused resentment amongst former craft workers who feel under greater pressure to discharge two jobs without having control over their pace of work: 'a lot of production (process) workers have been on small tool courses but they want to sit around and don't want to do craft work' (ex-craft team member). Former craft workers are also concerned that they are not permitted to participate in problem-solving meetings with other craft workers. Such developments have contributed to tensions between former craft and process team-workers, undermining effective group learning and flexibility. Teams have little ability to challenge these problems.

In UKC, local management unravelled a successful team-working arrangement that had been based upon high levels of training, multi-skilling and flexibility. New owners imposed a lower cost base and new product mix, one with a more volatile sales profile. To respond to anticipated output fluctuations, management established a peripheral workforce comprising about seven percent of production employees. These workers, hired and fired at relatively short notice, are not trained to the same level as core workers but when employed are expected to work in teams on routine tasks. The effect of these changes, in the words of the site HR manager, has been to sacrifice 'operational flexibility' for 'response flexibility'. Peripheral team workers, paid much less than core workers, often refuse to perform certain tasks. Core team workers, who are consequently placed under pressure, have in some cases become disillusioned with the team-working system they once supported strongly.

Across all sites workloads have intensified. Hence although training is available, line managers are reluctant to allow workers to leave the line, 'training is being squeezed because of costs' (HR manager). Team members are unable to challenge such decisions. Again, work intensification and lack of control hinder the acquisition of skills and flexible working.

Learning and Skills Development

Whilst former process workers have acquired new (maintenance) skills, former craft workers believe that their own craft skills have been eroded. One ex-craft team member explained, 'ask any of the lads, none use their skills in the way they used to' and 'I can go weeks without using a spanner … we feel we should be doing our own jobs. Now we are tied to the shifts [teams] doing routine work … we used to do a lot more routine maintenance.'

Management expresses a desire for higher skills, and initiatives have been made to match competences to jobs. The firms have sought formal accreditation as 'Investors in People' and offer small grants to support off-site learning. However, the experience of training is patchy. It is often difficult to leave the line and many team-workers are reluctant to participate in training. Reasons include a fear that training needs analysis may lead to selection for redundancy, and the lack of a clear connection between training and pay.

Management wants to understand better the skills necessary for production and to 'move beyond teams … We are trying to look into the future … at knowledge management and trying to capture the knowledge of key people, the black arts [informal, uncodified skills]' (quality manager). The goal is to define competency and standardize tasks and processes. At one of the sites, a culture change programme has been introduced to focus employees on innovation and create an atmosphere where workers feel empowered and motivated or new initiatives.

Interest in the wider aspects of workplace learning is also reflected in the work (at two of the four sites) of Union Learning Representatives (ULRs) and their involvement with management in on-site learning centres. At one centre the process union controls day-to-day operations and aims to use the centre to provide its members with certified 'skills for employability' (process union representative). The craft unions who control the other centre, want to offer their members 'aspirational skills' beyond the immediate requirements of the job (craft union representative). Management hopes the learning centres will advance basic and job-based skills. The work of the centres is innovative and reflects perhaps uneasy, but nevertheless cooperative relationships between unions and management. Although unions are making an impact on training and skills through the learning centres, in many other respects their influence in this area is limited.

Industrial Relations

At the time of the research, unions did not bargain formally on training strategy nor were they able to influence the operation of team-working or the design of work. According to one shop steward, 'we don't sit down to discuss training. There is no discussion with the union, no involvement.' This is a typical observation. Management is quite clear that it does not want unions involved in its strategies for work organization or workplace skills: 'if the unions have a role in the learning agenda, it cannot be about the bargaining table, it must be about people development' (HR manager).

The generally problematic relationship between craft and process unions is impeding the development of joint union initiatives around teams or training. The position of management appears to reflect a more focused interest in training and development as industrial relations issues; 'training is fundamentally an employee relations issue. If we train we want something back in return' (senior HR manager). Also, 'unions must recognize the importance of employee development, training and how the company is performing. Unions need to deliver on employability not just wages' (HR manager). Local workplace union branches have autonomy from their national leaderships and national policy intervenes indirectly in workplace industrial relations. However, the activities of ULRs are receiving increasing attention from union centres. Certainly their work, particularly through the learning centres, does appear to be generating the basis for a different, more cooperative form of industrial relations around workplace learning. At one of the sites a 'learning partnership agreement' has been signed. Management is, however, concerned not to lose control of the learning agenda; as one training manager noted management needed to 'make sure they [ULRs] don't take over our agenda'.

Review of Findings

Autonomy and Flexibility

Within the last five years, all sites studied have experienced redundancies and a reduction in the number of team members, resulting in a general intensification of work. These developments have had consequences for the operation of teams and the extent to which team members are able to enhance and utilize their skills. Work intensification is reducing the opportunity to learn and train, undermining the management ambition for multi-skilled, functionally flexible teams. Nevertheless, team-workers in both countries have been required to carry out a greater range of tasks. In the UK the tensions between former craft workers who often consider themselves to have been deskilled and former process workers, often uncertain about discharging their new maintenance skills, inhibit the development of effective flexible team-working.

Compared to their Swedish counterparts, UK teams have only moderate levels of autonomy and are quite closely supervised. The ability of team members to define and organize their skill and training needs is limited. Furthermore, the absence of any input to job design or work flow does not permit UK teams to match their skill profile to existing production processes or address future learning needs. Mirroring these developments, team autonomy in SweProc has been reduced through downsizing, and control by management increased. Rotation between workstations is less frequent and team members are less able to choose which tasks they perform.

In SweEng, however, team autonomy remains high despite work intensification. Following a change in product strategy to higher quality, management needed a higher-skilled and more flexible workforce. Teams now produce large items of equipment from start to finish in a long-cycle production system. Each order is designed to specific customer specifications, requiring differing and varying combinations of skills. Teams control task allocation, resources and work tempo. The teams possess the power to define and act on developmental needs in their organization, and have more operational autonomy than those at SweProc.

The features of team-working present in SweEng do not appear essential for the product markets and continuous manufacturing processes associated with the other cases. This perhaps illustrates the impact of product markets on the organization of work and the limits of management choices for skills and team autonomy (Sandberg, 1995; Streeck, 1992). Firms trading in product markets with relatively complex products and the need for rapid innovation must be able to re-tool quickly and require skilled employees to be flexible and innovative (Crouch et al., 1999; Streeck, 1992). To this might be added the requirement for self-management.

In the UK cases, teams have little ability to determine training needs, job design or workflow. Although craft-trained UK workers are highly skilled, Swedish team-workers are in general more technically skilled and functionally flexible. In the Swedish cases, increased flexibility is being developed through upskilling but also, as in the UK, by a horizontal accumulation of skills necessary to patch up team capabilities denuded by job losses. In spite of management's concern across all cases that flexibility should be increased, reduced staffing levels threaten this objective.

Learning and Skill Development

In both Swedish sites, workers and management remain convinced of the importance of learning and multi-skilling. The impact of job losses and work intensification is however beginning to corrode this belief. In SweProc (as in all UK sites), however, reduced employment levels and work intensification have reduced the opportunities for training and for learning both within and between teams. Social contact, in the form of rest breaks and lulls in the pace of production, provided the setting for informal, social learning; but in the words of a team member, 'there are no quiet periods any more'. As the need for learning is actually greater in the slimmed-down teams, this constitutes a potential problem for management. Social and organizational learning, it has been argued, are necessary ingredients for manufacturing efficiency, sustained organizational competitiveness, innovation and the development of high skills (Adler and Cole, 1995; Crouch et al., 1999).

At SweProc, the local union now has less interest in workplace learning and is concerned that workers taken off the job to train will leave their colleagues even more overworked. By contrast, in SweEng, training and developmental learning form a natural component of the work process and each unit of production requires a novel learning experience. Skill levels are high and continually renewed. Developmental and social learning at the level of the team is directly connected to the nature of the product, and for this company at least appears to be a *sine qua non* for competitive success. Management appears to have little choice but to grant substantial autonomy and the space and time for continuous learning.

In the UK cases, management understands that skill levels need to increase, but low staffing levels and cost constraints obstruct this ambition. Regular training occurs but appears to be mainly adaptive, addressing immediate production needs through job enlargement rather than skill enhancement. The association of training with redundancy has also generated resistance to training initiatives, though employment uncertainty is resulting in a growing interest by workers in skills beyond those of their immediate jobs. This is reflected at both sites in learning centres and the desire of unions for 'aspirational' skills and 'employability'. These initiatives

perhaps presage an interest in developmental learning. They are, however, set within a context of cost reduction, low team autonomy and management interest in tighter control of the organization of work.

Industrial Relations

Relations between unions and management in the Swedish cases have traditionally been more cooperative than in the UK, where industrial relations have been adversarial and the interest of unions directed mainly towards distributive issues. However, although both Swedish sites share a tradition of high union density, opportunities for union participation in strategic decision-making processes differ. At SweEng, management regards the union as a partner and agent for change. This ensures that the union has the capability to influence management strategy in setting learning requirements for skills enhancement. This contrasts starkly with the situation at SweProc, where the change in ownership has made the relationship between management and the union increasingly strained. At this site, the union has withdrawn support from training initiatives for fear of further work intensification, and has redirected its strategy towards increasing employment levels.

In the UK cases, management has been reluctant to bargain formally with unions about workplace learning and skills. Nevertheless, the joint union–management initiatives to create on-site learning centres in two sites enable ULRs and managers to discuss skills and learning issues cooperatively. This has led in one case to a jointly agreed (but union-initiated) Learning Partnership Agreement. Hence though industrial relations remain generally adversarial in the UK plants, foci for cooperative arrangements around workplace learning and skills have evolved.

Conclusion

In all six cases, restructuring has been associated with cost reduction measures, work intensification and job losses. To accommodate the consequences of such change, management needs team members to work more flexibly and intensively. Functional flexibility and multi-skilling create a need for new forms of developmental learning; but we have seen that restructuring can result in reduced opportunity for training, resistance to skills acquisition, and social tensions within teams. Despite some common patterns, how these contradictory pressures work out in practice shows variation across the cases, as is shown schematically in Table 2.

These outcomes only partially reflect traditional national stereotypes. Team-working in Sweden is not always associated with high levels of worker autonomy or with developmental learning, while innovative

TABLE 2. Characteristics of Team-working in Case Study Sites

	Socio-technical team-working	Lean team-working	
	SweEng	SweProc	UKA, UKB, UKC, UKD
Autonomy flexibility	High autonomy	Decreasing autonomy	Teamwork introduced as lean teams
	Empowered workers Multiskilled teams	Multiskilled teams but skills drain	Low autonomy, skills drain Management control high
	Routine task rotation	Decreasing work rotation	Limited work rotation
Learning and skills development	Developmental learning inside and outside production	Unions disengaging from training initiatives	Reduced numbers limit opportunities Mainly adaptive learning
		Increasingly adaptive learning	Innovative systems for developmental learning outside production; learning centres
Industrial relations	Collaborative	Collaborative but reduced trust Move to adversarial on training	Adversarial but collaboration and innovation around training

approaches to team-working were found in the UK, particularly in the sphere of learning. Precisely because whilst there is a weaker national culture and level of training in the UK, there is now a strategic desire for local innovation. In Sweden, conversely, competitive pressures are reflected in alternative production strategies where the requirements of lean production, a focus on standardization and cost control rather than developmental issues are becoming increasingly evident (Huzzard and Nilsson, 2004).

The connection between team-working and workplace learning, skills and workplace industrial relations is many-sided. Ferner and Hyman (1998) note that even in highly regulated systems it is only at the level of the workplace, through the politics of production, that the reality of the organization of work can be fully understood. The precise process of team-working itself is influenced by for example product market, national and local forms of industrial relations and union and management dynamics (Kahancová, 2007).

Such variability is consistent with an argument which is increasingly familiar in the comparative literature. Jacoby (2004), for example, has suggested that national production 'models' do not consist of a homogeneous set of elements but display variation across a range; we can thus expect some overlap between countries which 'on average' are quite distinct. The argument of Katz and Darbishire (1999) is that technological and market pressures are increasing such within-country variation, while encouraging convergence across countries within specific sectors. It is also relevant that all our case study plants are part of multinational companies, which have long been recognized as vectors for the cross-national transfer of production and industrial relations practices.

ACKNOWLEDGEMENTS

The research was conducted as part of the EC FP5 project, 'Learning in Partnership: Responding to the Restructuring of the European Steel and Metal Sectors' (grant number: HPSE-CT2001–00049). The authors gratefully acknowledge the contribution made by Robert Perrett and Mark Stuart to the UK research, Lennart Svensson to the Swedish research and the reviewers for their valuable comments on previous versions of this article.

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