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Teamwork in the Automobile Industry – An Anglo-German Comparison

Niels-Erik Wergin[*]

Abstract

Teamwork in the automotive industry varies significantly from plant to plant. This article compares teamwork in four automobile plants in Germany and Britain, and addresses two questions: (1) Do different models of teamwork fit into a bi-polar model of teamwork, being either innovative or structural conservative? (2) Do current models of teamwork signify a development towards post-fordism, or are they merely part of a neo-fordist rationalisation of production?

The following answers are suggested: (1) Teamwork in different motor-car plants cannot be categorised in a bi-polar model; rather do they represent a continuum. (2) Teamwork moves manufacturing away from traditional taylorist models of production, but does not over-come Taylorism altogether.

Keywords: *Teamwork, Automobile Industry, Industrial Relations, Lean Production, post-Fordism*

[*] Niels-Erik Wergin, Teaching Fellow and Doctoral Candidate; Department of Industrial Relations, London School of Economics and Political Science

1. Introduction

Already in the late 1960s and early 70s, teamwork was important in manufacturing. During this period, the aim of teamwork was to improve working conditions. In West Germany, teamwork was supported by the *HdA* programme, a quality of working life programme by the Brandt-government (Auer 1988: iv). During the 1980s, teamwork became important again with the spread of new production concepts in the German manufacturing industry (Kern/Schumann 1984). Teamwork was meant to facilitate a more intense utilisation of labour.

Since the beginning of the 1990s, teamwork has experienced another revival. In opposition to the 1970s and 1980s, it now is about two ends, improvement of working conditions *and* rationalisation, however the latter is clearly dominating (Gerst et. al. 1994: 5).

One major cause for this revival of teamwork was the MIT-study on the Japanese motor-car industry (Womack et al. 1990). The authors explained the world-wide success of the Japanese motor-car industry with what they called lean production, which bases on organisational efficiency and an intense utilisation of labour. One central component of lean production is teamwork.

The motor-car industry played a key role in the ‘sudden boom of teamwork‘ (Endres/Wehner 1993). In Germany, all major motor-car companies implemented teamwork in the early 1990s (Roth 1996a). In Britain, too, most major car manufacturers adopted lean production methods, including teamwork, in the 1990, following the establishment of Japanese car plants (where work practices are based on lean production) in the UK (IRS 1993: 5, FT 01/09/1995).

The models of teamwork in different car factories vary considerably, and so do the judgements about them. Teamwork is described as either post- or neo-fordist, innovative or conservative, work enhancing or work controlling (cf. below). This variety of teamwork provides the starting point for this article, which compares teamwork in two German and two British car plants.

The following section introduces the two research questions – whether teamwork in different car factories can be categorised into a bi-polar model of teamwork, and whether the introduction of teamwork brings about a development towards post-fordism. The third section reviews the literature on teamwork in the automobile industry, and introduces two opposite models of teamwork. The fourth section contains four case studies, which are compared and evaluated the following two sections. The seventh section concludes.

2. Research Questions

The development of teamwork in the automotive industry since the mid-1990s seems to be characterised by a 'struggle of two lines' (Roth 1996b), which represent two contrary 'conceptual poles' (Kuhlmann 1996: 114) of teamwork.

Various German authors have attempted to conceptualise this. Antoni (1994) confronts 'partly autonomous teams' with 'production teams', Roth (1996b) talks about self-organised and taylorised teamwork, while Gerst et al. (1995) contrast innovative teamwork with structural conservative teamwork. Similar approaches to divide different models of teamwork into two opposite groups, such as ' work enhancing' or 'work controlling', have been made by British authors (cf. Babson 1995, Bacon/Storey 1995, Waddington/Whitston 1996). However, there is no research that examines whether these bipolar models are applicable across countries.

The first question is: Can teamwork in different plants be classified using a bi-polar model of teamwork, as conceptualised by these authors?

The second question regards the consequences of the introduction of teamwork, which has brought about substantial changes in the organisation of production.

There is wide disagreement about the extent and quality of these changes as well as about their consequences. Influential conceptualisations describe them as either neo- or post-Fordist, i.e. as either a renewal or a transcendence of Taylorism (Lane 1995: 146).

The proponents of the post-fordism thesis, such as Piore and Sabel (1984) predict that these changes would entail a move away from the taylorist division of labour, and lead to increased skills and autonomy for workers. Kern and Schumann (1984) share this optimism, predicting 'the end of the division of labour'[1].

In contrast, members of the French école de régulation (e.g. Coriat 1980) are very critical of the developments including the introduction of teamwork. They interpret them as a renewal rather than a transcendence of Fordism that leads to an intensification of work and managerial control, rather than creating better working conditions and empowering workers. Thus, they talk of neo-fordism rather than post-fordism.

The more recent industrial relations literature has dealt with these issues, too. Again, there are two sides. The optimists argue that new productions concepts, of which teamwork is a central element, empower workers and create a better and more stimulating work environment. Walton (1985) postulated a shift from a 'Management of Control' to a 'Management of Commitment', which implies 'a progressive withdrawal of managerial control in favour of employee autonomy' (Gallie et al. 1998: 57).

The 'simplistic and unitarist biases of these accounts' (Geary/Dubbins 2001: 4) have been criticised widely (cf. ibid.). Basically, the criticism is similar to that by the Regulation School. Hyman and Mason (1995: 191), for example, argue that 'empowerment becomes a euphemism for work intensification'.

The second question is: Does teamwork in the automobile industry overcome the taylorist division of labour and bring about the introduction of post-fordist modes of production, or is it merely part of a neo-fordist rationalisation of production according to the principles of Fordism, renewing it rather than transcending it?

Both questions are, while dealing with different issues, closely linked. The two polar models of teamwork (to which question one relates, and which will be elaborated upon in the following section)

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[1] This is the title of their book. Yet, it should be noted that it is followed by a question mark. While Kern and Schumann are optimistic, they seem to have doubts.

correspond to ‘post-fordist teamwork’ and ‘neo-fordist teamwork’.

3. Teamwork in the Automobile Industry – Theory and Literature

According to Shaw’s definition (1981: 8),

> ‘a group is defined as two or more persons who are interacting with one another in such a manner that each person influences and is influenced by each other person.’

Furthermore, teams[2], as opposed to aggregates of people,

> ‘(1) endure for a reasonable period (…), (2) have a common goal or goals, and (3) have developed at least a rudimentary group structure’ (ibid.).

In line with that, Katzenbach/Smith (1993: 45) define a team as:

> ‘a small number of people with complimentary skills who are committed to a common purpose, performance goals, and approach for which they hold themselves mutually accountable.’

These definitions refer to small groups of people, as interaction and mutual accountability are less likely in large groups. Rosenstiel (1978: 40) furthermore stresses the necessity of a ‘we-feeling’, i.e. the existence of group cohesion, in order to call an aggregate of people a team. The cohesion of a group of people is influenced by their interdependence, based on the division of labour and their emotional relations (ibid.).

There are different forms of teamwork. On the one hand, there are so-called off-line teams that meet only from time to time, such as proposition groups and quality circles. On the other hand, there are permanent teams that are part of the regular organisation of work. This article is about the latter form of teamwork.

There are different models of teamwork of the latter type. It has been suggested that two opposing models of teamwork are evolving, as stated earlier. Antoni (1994) distinguishes ‘partly autonomous teams’ from ‘production teams’, Roth (1996b) talks about self-organised and taylorised teamwork, while Gerst et al. (1995) contrast ‘innovative teamwork’ with ‘structural conservative teamwork’.

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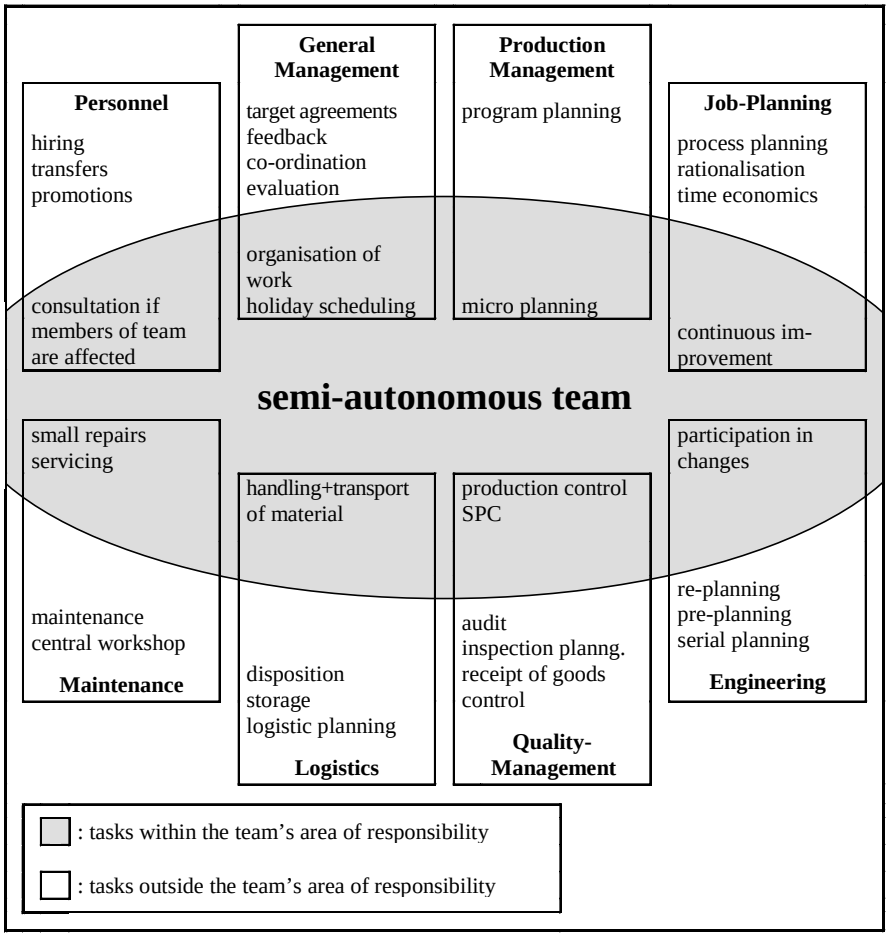
[2] The terms ‘group’ and ‘team’ are used interchangeably here.

These concepts are presented below. While the above-mentioned authors use different terms, their concepts are compatible. I therefore summarise partly autonomous teams, self-organised and innovative teamwork on the one hand, and production teams, taylorised, and structural conservative teamwork on the other.

Figure 1: ***Organisation of Tasks and Responsibilities in SATs***



Source: Antoni 1994: 36

3.1 Innovative Teamwork: Semi-Autonomous Teams

The concept of socio-technical teamwork with semi autonomous teams (SAT) became popular through the experiments of the Swed-

ish companies Saab and Volvo, and by projects that were part of the German *HdA* programme (cf. introduction) (Berggren 1991). SATs are used to overcome traditional structures of work.

The crucial feature of SATs is that they produce complete components such as engines largely self-organised and self-dependent. SATs carry out a considerably extended range of tasks (compared to workers on the assembly line) and assume considerable discretion for the organisation and conduct of their work, independent of superiors. Besides an extension of direct productive tasks, indirect production and planning tasks are transferred to the team, such as holiday scheduling, maintenance of machines, and the micro-regulation of the production process (cf. figure 1) (Gerst et. al. 1995).

As a means of self-regulation, team meetings take place on a more or less regular basis. In these meetings, work is co-ordinated and planned, and internal problems are discussed. Furthermore, the team elects a team speaker who represents the team, but is no superior.

One important element of SATs is a decentralisation of the functions of specialists (Antoni 1994: 35ff). The concept of the SAT comprises accordingly job enrichment (or 'vertical integration of tasks'), i.e. the integration of indirect production and planning tasks and functions (or secondary tasks) into the area of responsibility of the team, as well as job enlargement (or 'horizontal extension of tasks'), i.e. an extension of direct production tasks (or primary tasks) performed by each worker (ibid.: 26ff) (cf. figure three). Job enlargement is normally achieved by job rotation[3]. Thus, SATs are characterised by a quantitative and qualitative extension of tasks.

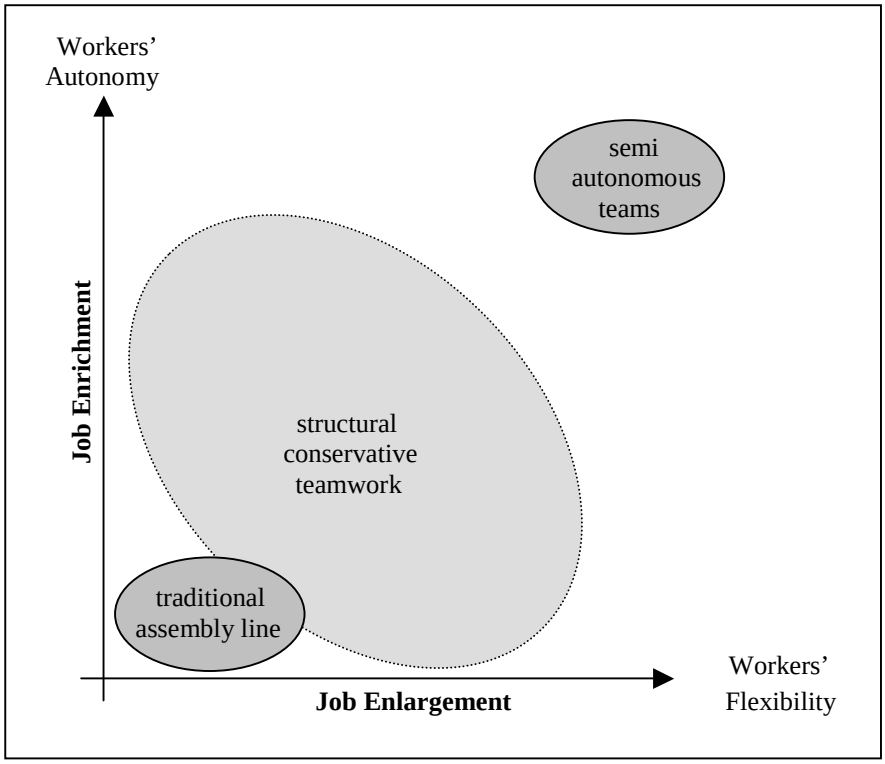
3.2 Structural Conservative Teamwork: Taylorised Assembly Teams

Assembly teams are fundamentally different from SATs. Here, the

[3] However, job rotation is not necessarily confined to direct production tasks, it can also include indirect production and planning tasks, cf. the case study on Mercedes A-City.

assembly line[4] remains central. This results in a technical dependence of the workstations, which is even raised by the removal of buffers for material in the course of just-in-time manufacturing. The taylorist division of labour with short (as a rule, less than two minutes), cycle-bound and standardised tasks, too, remains unchanged. The extension of tasks is subordinated to this principle.

Figure 2: ***Integration of Tasks and Functions in Teams***



Source: Antoni 1994: 26

In opposition to manufacturing on the traditional assembly line, the personnel on the line are subdivided into teams. It is expected, as a rule, that each employee be acquainted with at least three stations from within its section of the line. This makes possible a limited job

[4] The assembly line does not necessarily have to be based on a conveyor belt. The crucial fact here is that manufacturing does not take place stationary.

rotation, and thus a high flexibility in the deployment of personnel. The integration of indirect tasks is limited (Antoni 1994: 42f).

The self-organisation of these teams, too, remains restricted to few areas. The prerequisites for this, such as own scope to act and decide, team meetings or possibilities to gain additional qualifications are normally absent.

Team leaders appointed by the management head teams. They control and evaluate their team and assign work to team members. Consequently, they take over the role of a superior or foreman, in opposition to elected team speakers, who are primus inter pares.

Planning and execution of work are still largely divided. Separate departments or superiors are still in charge of all aspects of personnel/HRM, general management, production management, Engineering, logistics and often maintenance. Only parts of quality management, job planning and, sometimes, maintenance are transferred to the teams (Gerst et. al. 1995, Roth 1996b).

Thus,

> '(t)he reality of work for the employees remains, as before, characterised by precise instructions, low requirements and a largely disciplining framework. (…) The conditions of work do not differ from traditional motor-car plants in most respects; the stress lies mainly on a high workload' (Gerst et. al. 1995: 42f).

4. Case Studies

This article is based on four case studies in two British and two German automobile plants. A comparison of teamwork in Britain and Germany is interesting as Britain and Germany are prototypes of different production models, the Anglo-Saxon model on the one hand, the Rhineland model on the other. While Germany is a highly regulated high-wage economy, the British economy is identified with its supposed flexibility and its ability to compete on the basis of low labour cost.

The four studied plants are Nissan Sunderland and Vauxhall Luton in Britain and Opel Eisenach and Mercedes-Benz A-City[5] in Germany. Two of the plants, Luton and Eisenach, are owned by the same corporation, General Motors (GM). Therefore, sample allows comparing teamwork within countries as well as within one corporation across countries[6].

In the following four sections, teamwork in the four mentioned plants will be described by looking at the tasks of the teams, the organisation of work within teams, and the role of team leaders.

The case studies draw on various unpublished materials[7] and 23 interviews.

4.1 Opel Eisenach

Opel's Eisenach plant is located in Thuringia in East Germany. It opened in 1992 and currently employs about 2,000 people. Eisenach is Opel's first plant that is organised completely according to the principles of lean production. However, Japanese production methods were adapted to German circumstances.

Opel was the first company to emulate Japanese manufacturing methods without a Japanese joint-venture partner. Opel could, however, draw on experiences from other GM plants. Eisenach thus represents the case of a 'transplant' modelled after the Japanese concepts of 'lean production', but set up by a western company (Enderle 1994, Shaiken et al. 1997, Jürgens 1998: 326ff, Reitz 1999: 133).

The plant is highly productive. Eisenach was identified as most productive car plant in Europe in 1995 (EIU 1995). In 2002, Eisenach was still fifth most productive plant in Europe (Financial Times, 07/08/2002).

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5 A large amount of unpublished material on this plant was made accessible to the author with the condition not to reveal the name of the plant.

6 Because of the small number of cases, the results remain tentative.

7 These include internal sources from companies and memos from works councillors and researchers.

The Eisenach plant started from the beginning with teams as the basic work units (Lieske 1993). As the Eisenach plant is a greenfield site, Opel could implement a working organisation of its choice without the need to consult a works council.

Recruitment for Eisenach was highly selective. Opel hand-picked out of a huge reservoir of skilled car workers. As a result, all of the line workers are *Facharbeiter* (skilled workers) (Jürgens 1998: 332).

The Teams

The average size of teams is 4.65 members. Within the teams, every employee is expected to master all tasks. Next to direct production tasks, teams are responsible for material supply, holiday scheduling, selection of new team members, and occasionally for dealing with external customers and suppliers (Gerst 1995a: 4, Opel 1999a: 7).

Besides material supply, teams have very few responsibilities for indirect production tasks, as there are specialised teams for maintenance and quality assurance. Teams carry out only minor maintenance and quality control. Per work cycle (currently around 100 sec), team members have about three to six seconds to check the quality of their work.

An important task of teams in Eisenach is the participation in *Kaizen*, the continuing improvement process, by making improvement suggestions. Team members are requested to 'strive for improvements in cost, quality, productivity etc' (Opel 1999a: 5). The most important task in this respect is the reduction of times for the standard operation procedures. Management tries to provoke this by constantly reducing cycle times (Gerst 1995a: 6), a method called 'management by stress' (Parker/Slaughter 1988). The suggestion system is quite successful in Eisenach: Workers currently make about 20 suggestions per annum on average.

In theory, workers have to stick to the standard operation sheets (Opel 1999a: 5), but in practice, this is not supervised, and workers deviate from the standard operation procedures.

Teams are allowed to refuse production targets if they think that these are out of reach, however this does not happen in practice (ibid.).

Jobs are rotated on a regular basis for training and ergonomic reasons (Jürgens 1998: 331). Teams determine jointly and independently how to rotate jobs, which may be weekly, daily or after each break (Buleweg 1995: 27). According to the works council chairman, job rotation strengthens solidarity and brings about an equal distribution of strain between the members of the team.

Team meetings have tailed off in recent years. There are obligatory monthly meetings that last about one hour. They are outside regular working hours and paid as overtime. The meetings are about the organisation of work as well as quality issues, improvement suggestions etc. Topics are not given by management (ibid.).

The Team Leaders

Team leaders in Eisenach assume a broad range of responsibilities. They cover for absentees, co-ordinate and allocate work, organise team meetings, train team members, perform most personnel functions besides holiday scheduling, and assure that the team fulfils the performance standards (Gottschall 1994: 246, Opel 1999a: 6ff).

Furthermore, they evaluate and forward improvement suggestions made by members of their team, carry out time measurements, and administer the standard operation sheets and Kanban-cards, i.e. secure material supply, check the quality of the supplied material, and supervise the production process (Gerst 1995a: 4, Mickler et al. 1996: 117, Jürgens 1998: 331).

Thus, the team leader could be described as a ‘revalued foreman’, Gerst (1995a: 5) concludes. The works council chairman agrees with this assessment (interview notes). However, team leaders in Eisenach have no disciplinary functions and no authority to instruct. These functions are performed by so-called ‘area engineers’. Thus, team leaders are no superiors; they are ‘organisers’ (ibid.) and ‘co-ordinators’ (Buleweg 1995: 27).

Team leaders are appointed by management on suggestions of foremen and the works council (Köhler 1993: 12). They are paid 20 per cent more than normal employees.

In a survey in 1996 years ago, 88 per cent of team members indicated that they were dissatisfied with their team leaders (Opel 1996), but in a more recent survey (Opel 1999b), team members assessed their leaders 'surprisingly positive' (interview notes). The most likely reason for this is a change in the team leader's understanding of their role, i.e. that team leaders behave less like a superior and more like *primus inter pares*.

4.2 Mercedes-Benz' A-City Plant

The Mercedes-Benz plant in A-City, founded at the end of the nineteenth century, produces Engines and engine components. The plant has continuously been extended, is highly mechanised and currently employs 2,700 people.

Before teamwork was introduced, production jobs had been limited to operating individual machines, i.e. tasks were basically confined to machine tending and handling parts. These jobs were highly repetitive, and employees were exposed to considerable physical strain.

A company-wide agreement (Mercedes-Benz 1995) between Mercedes-Benz and the company-wide works council was the basis for the introduction of teamwork. According to this agreement, a joint steering committee was established 'to co-ordinate the introduction of teamwork and to further develop it' (ibid.: 246, own translat.). Furthermore, workers were involved in the design of their new work areas (Gerst et al. 1995: 376f). The previous workforce was taken over completely.

The Teams

Teams in A-City consist of 13 members, including the team speaker. The company agreement on teamwork states that 'Holistic job designs are to be introduced by means of integrating direct, indirect

and planning tasks and functions' (Mercedes-Benz 1995: 242, own translat.). This has been realised: There are no more dedicated personnel for machine setting and manning and quality control – these functions are now carried out by the teams – and there are only few maintenance staff left for major breakdowns. Teams conduct most maintenance tasks too – not just minor maintenance.

In addition to ten workstations on machines per team that are cycle-bound, the comprehensive integration of indirect and related functions led to the creation of three additional, non-repetitive jobs per team where most indirect tasks – which were formerly carried out by specialists – are concentrated. These are rotated routinely among team members (Kuhlmann 1996: 126).

In addition to indirect production tasks, teams have collectively taken over responsibility for most planning functions. Teams now administer their shift and holiday timetables independently, and organise the production programme and the sequence of orders to be fulfilled independently.

Within the team, all tasks and functions are rotated routinely, including the three jobs that are not cycle-bound. Team members administer the rotation independently (Gerst et al. 1995: 376ff, Kempe 2000: 20).

According to the company agreement, 'A time of about thirty minutes per week is guaranteed for team meetings' (Mercedes-Benz 1995: 245, own translat.). These are led by the team speaker. Management does not prescribe the content of the meetings.

The Team Speakers

The team speaker in A-City is fully integrated into the production process and has hardly any additional responsibilities compared to 'normal' team members. Their only additional responsibilities are preparation and leadership of team meetings, and the representation of the team. Team speakers hold no hierarchical position and posses no disciplinary or supervisory functions and have no authority to instruct.

All indirect and planning tasks were devolved to the team as a whole. Thus, decisions are made by the entire team, not just the speaker. Gerst et al. (1994: 12, own translat.) found that 'The team interprets their area of responsibility explicitly as a common task'.

The team speaker is elected by his team (Mercedes-Benz 1995: 244) and does not receive any additional compensation.

4.3 Nissan Sunderland

Nissan's Sunderland plant in Tyne and Wear opened in 1986. Nissan started from scratch on a greenfield site, with no traditions of trade unions organisation or established shop-floor custom and practice. Nissan thus has been able to experiment with a model of its choice from the beginning (Oliver/Wilkinson 1992: 214). All workers have been organised in teams from the very beginning on.

Sunderland is a comparatively large plant: it employs around 5,000 and produces three passenger car ranges. In 1999, Nissan[8] became Britain's biggest carmaker. The plant was the first so-called Japanese 'transplant' in the UK. It became the benchmark among European manufacturers and was an important catalyst for the diffusion of Japanese production methods in Europe (Jürgens 1998: 323).

For the last six years, Sunderland has led the productivity tables for European car plants (Financial Times, 07/08/2002, EIU 1997-2002).

The Teams

All approximately 5,000 employees working on the assembly line are organised in teams. Each team consists of eight to 17 workers; the average size is about ten.

Within each team, workers are responsible for basic maintenance, sub-assembly tasks, and quality assurance for their own work. However, there are special personnel for maintenance and quality assurance. Team members do not assume responsibility for these

[8] Sunderland is Nissan's only plant in the UK.

tasks completely. There is one so-called check-and-repair-person for each two teams who checks the quality of tasks performed by these two teams and repairs faults. Similarly, there is still dedicated staff for maintenance. Yet, in opposition to the traditional taylorist plant, team members are expected to assist maintenance personnel when they come along.

Workers' autonomy in Sunderland is very restricted. According to the AEEU regional officer responsible for Sunderland, work at Sunderland is 'dictated' (interview notes). Corresponding with that, a member of NMUK's company council stated that team members can make 'no decisions at all' (ibid.).

Even the possibility to make changes to their work routines independently does not exist, as supervisors do not allow even the slightest deviation from the 'standard operation routines'[9], and changes in the standard operation procedures must first be cleared by several superiors before they can be implemented. Several workers reported that in many instances, even though they could provide better solutions, these were frequently ignored or deferred.

Workers are expected to master different tasks from their team's section, *but not all*. The team's supervisor assures that each team member is able to cover three jobs, and that each job is to be covered by three people. Nissan thinks that 'this formula will allow enough flexibility so that all jobs can be covered at all times' (Garrahan/Stewart 1992: 84). Therefore, a complete rotation (of all men through all jobs) is not possible. In fact, jobs are not changed much at all. One employee said: 'On-line I would say I move around pretty rarely. On-line you are given a specific job and it is very rare you will change from this job unless somebody is absent' (quoted in ibid.: 83).

There are daily team meetings at the beginning of each shift that last about five minutes. Discussions do not usually take place in these meetings; they are to give information to team members merely. What Nissan calls 'consultative decision making' (Wickens 1985:

[9] Standard operation routines, recorded on so-called 'standard operation sheets', are a central element of Taylorism.

19ff) (in the meetings) is in fact a process of managers and team leaders 'informing and imposing the pre-ordained "right" answer' (Garrahan/Stewart 1992: 96ff).

The Team Leaders

The team leader has not many tasks; he is merely responsible for training and development in his team, for leading the daily team meetings, and for few planning functions. He works on-line regularly with his team members. He has no disciplinary functions and no authority to instruct.

The supervisor, on the other hand, is responsible for basically everything that happens in his zone (Wickens 1985: 21), he is 'like a managing director' (interview notes) for his zone, which comprises two teams, and 'holds together everything' (ibid.). He is responsible for finance, personnel, efficiency, quality and *Kaizen*, and has disciplinary functions, among other functions.

4.4 Vauxhall Luton

The Vauxhall Luton plant in Bedfordshire near London was built in 1902. Substantial investments were made to upgrade it in the 1990s. The plant closed down[10] in 2001, by which time it employed about 2,000 people.

The investments in the 1990s led to plant-wide changes focusing on the implementation of lean production techniques, including teamwork. Negotiations on the introduction of teamwork began in 1990. Initially, unions were suspicious of teamworking[11]. However, teamwork had already been introduced in Vauxhall's Ellesmere Port plant, and there was consensus that it wouldn't be possible to reject teamwork altogether. Therefore, unions – in particular the TGWU –

[10] This happened shortly after interviews were carried out. Still, I am using the present tense in this case study.

[11] Unions feared that teamwork would lead to job losses and poorer and harder working conditions and that unions' influence would be reduced.

chose to ‘engage and change’ rather than to oppose teamwork altogether.

As the strategy of Vauxhall’s management was to get union consent in all stages in order to avoid damaging confrontations, unions got some concessions from management. In the final agreement, both sides achieved their objectives (Stewart 1997: 5). It states, among other things, that the role of union representatives would be preserved and that team leaders have no role in discipline and grievance cases (Carr 1994: 201ff, Murakami 1998: 802).

A ballot of union members in August 1992 accepted the agreement. The previous workforce was taken over completely.

The Teams

Teams in Luton may consist of five to 15 people according to the plant agreement. However, as there have been problems to manage large teams, the maximum size of teams was, in fact, seven, while the average size at the time of the interviews was 6.3.

Teams members take over responsibilities for minor maintenance and self-inspection ‘subject to time allowance’ (Vauxhall 1992: 19) and are requested to ensure that the required quality standards are met and to rectify defective parts, wherever possible. However, there is still dedicated staff for maintenance and quality assurance as well as material handling (Vauxhall 1992: 19ff, Vauxhall 1996).

Furthermore, team members are expected to participate in *Kaizen* by doing their own time and motion studies, by helping to control scrap, and by looking for improvements in the design of the product and the safety of the work area (ibid.). That is ‘as far as it goes’ (interview notes); other tasks are not devolved to team members.

At the time of the interviews, workers in Luton made just two improvement suggestions on average per year. If workers have ideas to improve the work process or the product, they usually talk about this with their fellow team members initially. If the intended changes are rather small, they might be tested straight away on-line.

Then, a formal improvement suggestion is filled out, usually by the whole team collectively. Depending on the level of the change, the team leader, supervisor, shift manager or unit manager, who may consult engineers when necessary, decides whether to adopt the suggestion or not.

As in other plants, Standard Operation Sheets exist in Luton, but their compliance is not supervised, and in practice, workers deviate from them.

Jobs are rotated within the team, and where necessary, also between teams within job classifications (Murakami 1998: 801). Job rotation takes place on a regular, scheduled base. Teams decide independently on how to rotate jobs. While it is officially the team leader's responsibility to organise and plan job rotation, the team usually agrees jointly on how to rotate. Jobs may be rotated weekly, daily or twice daily, for example. As team members are expected to master all jobs from their team's section, a 'complete rotation'[12] is possible.

Team-meetings take place as the need arises. They are rather short and informal. Often, meetings are hold in breaks, which last 25 minutes[13]. Form and contents of team meetings are subject to joint regulation according to the plant agreement (Vauxhall 1992).

Meetings may be about work scheduling or improvement suggestions, for example. However, *Kaizen* is not usually an important topic, as there is a separate, daily Kaizen meeting, which is attended mainly by specialists. From time to time, team members of 'affected teams' may attend these meetings, but this does not happen often, probably once a year.

This – that *Kaizen* is not usually an important topic – may explain the fact that team members make less than two improvement suggestion on average per annum, despite the team's responsibility for *Kaizen.*

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[12] i.e. everyone performs all of the team's jobs subsequently, not just some

[13] Which is not to say that the 'team meeting' lasts the entire break.

The Team Leaders

Management appoints team leaders. Eighty per cent of team leaders are former foremen who were 'transformed' to team leaders in 1992, when teamwork was introduced (Murakami 1995a: 97, Murakami 1998: 800ff).

Murakami (ibid.) predicted that team leaders' responsibilities would be expanded into those of a traditional supervisor, resulting in team leaders and supervisors sharing management responsibilities. However, unions ensured that this has not happened. The deputy convenor for the TGWU at the Luton plant reported that there were some team leaders who actually tried to take over the role of a foreman or supervisor, but 'we (the unions, N.W.) made sure that didn't happen' (interview notes).

Team leaders must be able to perform all operations within the team's area, as they cover for absentees. They plan and organise job rotation, ensure material supply, monitor if team members meet their responsibilities[14], take a leading role in cost-reduction activities within the team, and train team members. They also regulate internal matters and disputes.

Despite the range of functions they perform, team leaders are responsible only for minor decisions, such as how to rotate jobs and which tools to use. Supervisors or managers make all bigger decisions. Team leaders have no disciplinary functions, either. These are performed by supervisors, who are responsible for around four teams and perform all personnel issues (Vauxhall 1994).

Since team leaders are appointed, 'many workers seem to view them as a new form of supervision rather than integral part of their teams' (Murakami 1998: 804f).

5. Comparison

In this section, teamwork in the four studied plants is compared.

[14] Here, team leaders *do* take over supervisory functions, even though they do not officially have those functions.

The first part deals with production technology, while the following parts deal with organisational aspects – horizontal and vertical integration of tasks, the role of the team-leaders, and the degree of self-regulation.

5.1 Production Technology

Teams in all four plants work on a rather short-cycled assembly line with cycle times below two minutes. In this respect, all plants are identical. However, there is one important difference concerning production technology: Eisenach, Luton and Sunderland are final assembly plants. In the units where the large majority of employees works, trim and final assembly, work is almost purely manual[15]. The Mercedes plant, on the other hand, is an engine plant that is highly mechanised[16]. The conditions for job enrichment are more favourable in areas of mechanised production than in areas of manual work, as there are more indirect tasks to be performed in mechanised areas, such as maintenance[17] and machine set-up (Kuhlmann 1996, Schumann/Gerst 1996).

Another important technological difference between A-City and the three other plants is the low level of buffers in Sunderland, Luton and Eisenach. In A-City, there are comparatively many buffers, which allow for a de-coupling of the production flow.

As the production technology, or 'technological framework' at Eisenach, Luton and Sunderland is basically the same[18], there are no technological reasons for different forms of working organisation in general and different models of teamwork in particular in these plants.

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[15] The preceding units (press, body, paint) are highly automated, and thus only few people work in these areas.

[16] The plant is mechanised, but not automated, i.e. there are many machines in A-City, but no robots.

[17] There are maintenance tasks to be performed in areas of manual work, too, but as there are far fewer machines in areas of manual work than in automated ones, there are far less maintenance tasks to be performed.

[18] There are many minor differences in the production technology between these three plants, but these differences don't have a significant impact on the working organisation.

As the assembly line with short cycle times remains central to all four plants, technological dependence (i.e. workers' dependence on the assembly line) is rather pronounced (which is even increased by the low level of buffers in Sunderland, Luton and Eisenach), which restricts the scope for (teams') self regulation, regardless of whether independent decisions by teams are permitted. Thus, this technological framework does not provide good conditions for the implementation of innovative, self-organised teamwork such as in the Volvo factories Kalmar and Uddevalla[19], and thus the empowerment of employees.

After dealing with production technology, I will now turn to organisational aspects.

5.2 Job Enlargement

In A-City, Eisenach and Luton, workers master all jobs from their team's section, and teams rotate regularly and completely (i.e. through all jobs). In Sunderland, on the other hand, each worker is requested to master only three jobs (and in practice, they do not normally master more than that), so that complete rotation cannot take place. Furthermore, while job rotation in the other plant takes place on a scheduled basis, this is not the case in Sunderland. Most team members stay at their workstation most of the time and change only it in order to cover for absentees. Therefore, a balancing of different motion routines does not take place. If jobs are rotated in Sunderland, this is prescribed by supervisors, while teams decide themselves on how to rotate in the other plants.

5.3 Job Enrichment

The integration of indirect production and planning tasks and functions in the team's area of responsibility (also called 'vertical integration' of jobs or 'job enrichment') is most pronounced in A-City. This comprehensive integration improves co-operation within the

[19] In the Kalmar and Uddevalla plants, there were no assembly lines (thus assembly took place stationary), and cycle times were around two hours (Berggren 1991, 1992, 1997).

team, brings about a reduction of hierarchy and a re-qualification of production work (Gerst et al. 1995), breaking with the taylorist principles that production workers should be only minimally qualified and that planning and execution of tasks are to be carried out by different people.

The case of Mercedes-Benz shows that 'a consistent implementation of self-organisation has positive effects even under otherwise unchanged work structures' (Gerst et al. 1999: 390).

Job enrichment in the other plants is considerably less comprehensive. Both teams in Luton and Sunderland have only few additional tasks besides their direct production tasks. As there are still dedicated personnel for maintenance and quality assurance in both plants, team members are only responsible for minor maintenance and a short self-inspection of performed jobs. Furthermore, team members are expected to participate in *Kaizen*, the continuous improvement process. Other indirect production tasks or planning functions are not devolved to the teams. Thus, job enrichment for team members in Luton and Sunderland turns out to be very limited.

Eisenach lies between those two poles (A-City on the one hand, Luton and Sunderland on the other), as team members are also responsible for material supply, holiday scheduling and the selection of new members next to their responsibilities for quality assurance and Kaizen.

Because of their responsibility for Kaizen and Quality, employees in Eisenach are 'qualificatory challenged' (Mickler et al. 1996: 118) and become integrated into decision processes, for which superiors and specialists were responsible exclusively before. This results in a reduction of hierarchy, according to Adler (1992) and a higher commitment of production workers. However, the permanently high level of performance is impeding for the maintenance of this commitment, Mickler et al. (1996: 118) object.

As in Eisenach, Kaizen and Quality are among the tasks of teams in Luton, however Kaizen seems to be less important than in Eisenach, as workers in Eisenach make about ten times more improvement suggestions than workers in Luton, and as Kaizen is no important

topic in team meetings in Luton (20 compared to 2 suggestions per year, cf. above), which may be explained by the fact that there is a separate, daily Kaizen meeting in Luton. It is likely that team members thus feel that there are specialists who do this job. Furthermore, one of employees' main criticisms in Luton is that management does not listen to them and their ideas.

The situation in Sunderland is similar: team members are responsible for Kaizen, but it has no high priority for them. Team meetings provide no possibility to discuss improvement suggestions, as there are no discussions in team meetings (cf. sec. 4.3). Furthermore, similar to the situation in Luton, workers get the feeling that their contributions are not appreciated (Garrahan/Stewart 1992: 102).

In Eisenach, on the other hand, separate Kaizen meetings as in Luton do not exist, and thus it is a more important topic in the team meetings. Furthermore, there are 'Kaizen garages' close to the line where workers can test improvement suggestions independently[20]. The existence of these 'Kaizen garages' shows workers that management *does* appreciate workers' ideas.

In Luton, such garages do not exist, thus workers cannot test their ideas if it is not possible to test them directly on-line, which is obviously not always possible[21]. Thus, the 'qualificatory challenge' for workers, which Mickler et al. (1996) found in Eisenach, is not present in Luton. In Sunderland, testing of ideas is not possible, as even slight deviations from the standard operations procedures are forbidden.

5.4 Role of Team Leaders

While at both GM plants management controls teams through appointed team leaders, team speakers at Mercedes' A-City plant are elected by workers, and can also be elected out of office. This

[20] Workers have got up to 52 minutes *daily* at their disposal to test improvement suggestions (or, for example, to discuss them with fellow members of the team) in the overlapping period of two shifts.

[21] Testing on-line is confined to small changes in the standard operations procedures. Larger changes could potentially interrupt the production flow.

makes it rather likely that they will stand up for their team members and defend them against superiors. The team speaker in A-City is a moderator, spokesman and person to turn to for management (Gerst et al. 1999: 374), but definitely not a superior, while team leaders in Luton and Eisenach are quasi-superiors.

Furthermore, as team speakers at Mercedes are not appointed by management, they are less exposed to management control than team leaders in the other plants and pay much attention to the views of their team members (Gerst et al. 1995), in opposition to team leaders at other plants[22].

While team leaders at the GM plants perform many tasks, most importantly the co-ordination and allocation of work and the monitoring of team members, team leaders and speakers at A-City and Sunderland have only few additional tasks (compared with normal team members), which is stressed by the fact that they work regularly on-line, while team leaders at Eisenach and Luton only work on-line to cover for absentees. Team leaders in Sunderland have a weak role, as the supervisor is responsible for almost everything. The team speaker in A-City has got a stronger role, despite his few tasks, as he is elected which gives him a high degree of legitimacy among his fellow team members.

While teamwork in A-City is team (member) centred, in Luton and Eisenach it is leader centred, i.e. the area of (team-) leadership responsibility is considerably larger that that of team (member) responsibilities. Teams in Sunderland are neither, as neither team members, nor leaders have any scope to make independent decisions. All decisions (besides those concerning training) are made by the supervisor, i.e. by someone who does not belong to the team.

5.5 Degree of Self-regulation

From the previous discussion, it follows that teams at Mercedes are far more autonomous and self regulated than teams in the other

[22] For Vauxhall, cf. Murakami (1995b); for Opel, cf. Opel (1996) and (1999b); for Vauxhall, cf. Garrahan/Stewart (1992).

plants. In the GM and Nissan plants, superiors retained far more responsibilities than in A-City.

At Mercedes, workers have comprehensive freedom for the design and organisation of their work process. Mercedes' management is convinced that this is the best way to free workers' creativity and achieve their commitment, which is submerged in traditional, fordist assembly line production. These changes are also welcomed by a great majority of employees.

In Eisenach, teams with their strong team leaders have a considerable scope for self-regulation concerning work scheduling and the deployment of personnel, however they always have to consider strict production targets and the (intended) scarcity of personnel, which both restrict them.

In Luton, teams have less scope for self-regulation than teams in Eisenach, as teams and their leaders are not responsible for personnel functions as in Eisenach, and they cannot refuse production targets, as teams in Eisenach theoretically can. The same limitations apply. Thus, besides job rotation, 'decision making is not in the hand of the group' (interview notes) in Luton.

Workers in Sunderland contribute to flexibility and productivity, but teams are not self-organised whatsoever. Internal relations are still very hierarchical, as the supervisor is basically responsible for everything (Wickens 1985, Wickens 1987), with the result that teams (including their leaders) have hardly any responsibilities besides their direct production tasks. Teamwork and the organisation of work at Sunderland in general have nothing to do with empowering workers on the shop-floor (cf. Garrahan/Stewart 1992).

6. Discussion

Teamwork in the four studied plants differs widely. Teamwork at A-City comes close to the ideal of innovative teamwork, while teamwork at Sunderland pretty much represents the structural conservative prototype. Teamwork in none of the four plants could justifiably be called post-fordist, but teamwork at Mercedes comes much closer to it than teamwork at Nissan.

As the models of teamwork in the four plants differ considerably, so do the potential consequences (of the introduction of teamwork) on employees. Teamwork can lead to an empowerment of employees, or to an intensification of work and management control. It has the potential for both, and thus claims that teamwork invariably leads to one of the two cannot be taken seriously.

Which form of teamwork is introduced in a plant depends on a number of factors, local as well as national ones. Important factors are the 'management style', union attitudes to teamwork, and the relationship between management and unions.

Given the strength of unions in the motor industry, the options chosen by unions can be a significant factor in influencing management strategy. Therefore, the model for change, and with it, the model of teamwork, in an unionised plant needs to incorporate particular union responses to company policies (Carr 1994: 207).

This is why the implementation of teamwork at Sunderland and Luton proceeded in rather different ways, and this, in turn, is one central reason why the realised models are rather different. Nissan was able to start from scratch, establishing a new factory on a greenfield site, with no traditions of trade unions organisation or established shop-floor custom and practice in an environment of high unemployment and no tradition of trade union militancy. This, together with the stress on careful selection of a loyal workforce allowed Nissan to impose a model of its choice unilaterally. The conclusion of a de-facto strike-free 'sweetheart deal' with a co-operative union[23], which was possible for the same circumstances, together with the careful selection of workers, furthermore reduced the danger of shop-floor resistance in the future (cf. Holloway 1987, Oliver/Wilkinson 1992).

[23] According to Holloway (1987: 147ff), this deal was only possible after the destruction of 'old traditions' and a considerable weakening of unions in the motor industry, which Holloway ascribes to changes in the management style at British Leyland/Rover at the time when Ryder and Edwardes were CEOs. Holloway (ibid.) postulates that the crushing of unions under Edwardes had an impact on the whole motor-car industry, which Nissan was able to exploit.

Vauxhall management, on the other hand, had to cope with strong, established unions which (in particular the TGWU) were critical about new, 'lean' working practices. Thus, in order to prevent damaging confrontations with employees and unions, Vauxhall chose to make some concessions to unions regarding their future role in the plant. As a result, unions could secure many of their old positions. The shop steward continues to be the key actor in the workplace, albeit in an altered state (cf. Carr 1994, Stewart 1997, Murakami 1998).

The differences between A-City and Eisenach concerning the implementation of teamwork are similar to those between Sunderland and Luton: The Mercedes plant is a brownfield plant with a strong works council. Whether or not to consult the works council was no question, as the works constitution act gives works council the right to co-determination in such questions.

Eisenach, on the other hand, is a newly set-up plant on a greenfield site, thus there was no works council which had to be consulted, and thus the model of teamwork was imposed unilaterally by management. Therefore, the model of teamwork realised in Eisenach is very much about rationalisation.

To conclude: In A-city and in Luton, teamwork was introduced into plants where traditions of industrial relations already existed. Therefore, management had to seek agreements with union representatives (in the case of Luton) and the works council (in the case of A-City)[24], respectively. This is for different reasons: In Germany, there is a legal requirement to do this, and in Britain, management had to recognise existing union power[25].

Another important factor for differences between different models of teamwork is that self-organised, innovative teamwork, in which team members assume responsibility for most indirect production and planning tasks, rests on one characteristic which is a constitu-

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[24] However, works council members are de facto union representatives, too, as IG Metall always wins large majorities in the works council elections in car factories. Thus, most works councillors are also IG Metall members.

[25] Which is not to say that unions in German automobile plants are not powerful, quite the opposite.

tive element of the German production system: skilled labour. However, the fact that the German production system possesses the preconditions for innovative teamwork does not necessarily mean that this concept of teamwork has always been realised in German plants. Skilled labour is a necessary condition, but not a sufficient one, as the case of Opel Eisenach demonstrates.

Furthermore, it has been mentioned that the conditions for the introduction of more innovative concepts of teamwork are more favourable in areas of automated production, as in the Mercedes plant, than in areas of manual work.

6.1 Bi-polarity of Different Models of Teamwork?

After the description and comparison of the four cases, I shall now come back to my two research questions. The first question was whether teamwork in different car factories can be depicted using a bi-polar model of teamwork, as conceptualised by various authors.

The comparison in the previous section shows that teamwork in Mercedes' A-City plant is almost the opposite of teamwork practised in Nissan's Sunderland plant. The model of teamwork that has been realised in A-City centres around the creation of skilled, comprehensive job designs and an extension of self-organisation on the shop floor. These concepts come very close to the ideal type of innovative teamwork as defined above, despite the continuing existence of the assembly line. The important fact is that employees in A-City are, indeed, empowered.

Teamwork practised in Sunderland, on the other hand, can clearly be assigned to the structural conservative model of teamwork. Here, the possibilities for workers to influence production do not increase, teams are not self-organised, and job enrichment and enlargement are very limited.

Thus, these two models of teamwork fit the categories of the bi-polar model of teamwork as described above. However, a comparison between Sunderland on the one hand, and Luton and Eisenach on the other shows that teamwork basing on the principles of lean

production is not necessarily identical. While the organisation of work in all three plants follows the same example, the outcomes are different. Teamwork in Sunderland, Luton and Eisenach represents different approaches to 'Japan-oriented' teamwork, which, while having many similarities (cf. above), differ significantly with respect to the position of the team and their leader in the internal hierarchy, as well as regarding employees' integration into optimising activities *(Kaizen).*

The first point – the position of teams and their leaders in the internal hierarchy – sets Eisenach with it s strong teams and leaders apart from Sunderland, where teams and their leaders have got a very weak position, with Luton lying somewhere in between. The second point – employees' role in Kaizen – sets Eisenach apart from Luton and Sunderland, as Kaizen is de facto less important in the latter two plants. Thus, the cases of Luton and, particularly, Eisenach demonstrate that increased participation and self-organisation on the shop floor are not incompatible with 'lean production'.

This means that teamwork based on the concepts of lean production cannot be equated with structural conservative teamwork a priori, as the case of Sunderland may suggest. Teamwork in Eisenach rather represents an intermediate position between the two ideal types 'innovative' and 'structural conservative' teamwork. Adler (1995) suggests the term 'democratic Taylorism' for this third model[26]. The teamwork model that has been implemented in Luton, in turn, lies between 'structural conservative teamwork' and 'democratic Taylorism'[27].

The bi-polar model of teamwork was useful some years ago, when almost all forms of teamwork realised in the automotive industry

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[26] With this term, Adler (1995) relates to NUMMI, not to Eisenach. However, Eisenach is strikingly similar to NUMMI, as NUMMI acted as role model for Eisenach. For reasons of space, this model named 'democratic Taylorism' will not be described here, but as stated, it is strikingly similar to the model realised in Eisenach. For details, cf. Adler (1992) and (1995).

[27] I will not elaborate where exactly between these two poles Luton and Eisenach are located, as this is not necessary for my purpose, that is to show that a bi-polar categorisation of teamwork does not depict the reality of teamwork in the automobile industry.

did indeed correspond to either of the two prototypes (innovative or structural conservative), as teamwork was oriented either on 'Volvoism' (i.e. socio-technical, 'innovative' teamwork) or 'Toyotism' (i.e. 'structural conservative' teamwork in Japanese plants). There was no middle ground.

Today, this bi-polar model of teamwork does not depict reality adequately any more. Newer models of teamwork such as in Luton and Eisenach are, while being based on the principles of lean production in a general sense, *not* modelled on any specific Japanese plant[28], but rather on the US-American transplants such as NUMMI, CAMI and Saturn, which are joint-ventures between US-American and Japanese companies. While the former (the Japanese-owned plants) do fit the prototype of structural conservative teamwork, the latter (the American-based transplants) don't. The latter rather represent an intermediate type.

Thus, this research suggests that the emergence the so-called transplants, and of forms of teamwork modelled on it (such as in Eisenach and Luton) blurs the previously clear-cut bi-polar model of teamwork in the automotive industry.

6.2 Neo- or Post-Fordism?

The second question was whether current models of teamwork signify a development towards post-fordism, or whether they are merely part of a neo-fordist approach to rationalisation.

The case studies presented here suggest that it is premature to speak of the end of Fordism. Teamwork based on the principled of lean production is different from traditional taylorist forms of production, but it is definitely not post-fordist. While some rigidities of Taylorism are defused, the assembly line is still present in all four factories, cycle times are still short[29], and line-dependence is even increased by the reduction of buffers in three of the plants. This model of teamwork is essentially a means of rationalisation that

[28] meaning a factory *owned* by a Japanese company, and not necessarily *based* in Japan

[29] i.e. the division of labour is still high

obeys the laws of Taylorism, and does not question the assembly line. Thus, this form of teamwork is neo-fordist rather than post-fordist.

I shall now go into each of the four cases briefly. In order to illustrate why the four cases cannot be called post-fordist, I apply a model developed by Berggren (1992). This model integrates different indicators for Fordism into two dimensions, working organisation, (measured in 'independence' of the team) and production technology.

As stated earlier, the assembly line with short cycle times remains central to all four plants. There are not even attempts to modify the assembly line via a de-coupling of workstations or similar measures. Thus, in this dimension, all four plants remain on the same level, on the initial position (traditional assembly line). While on could object that the presence of Andon-Systems in all plants beside A-City is an important modification of the assembly line, as it gives every worker the possibility to stop the line, the reduction of buffers in the same plants works in the other direction.

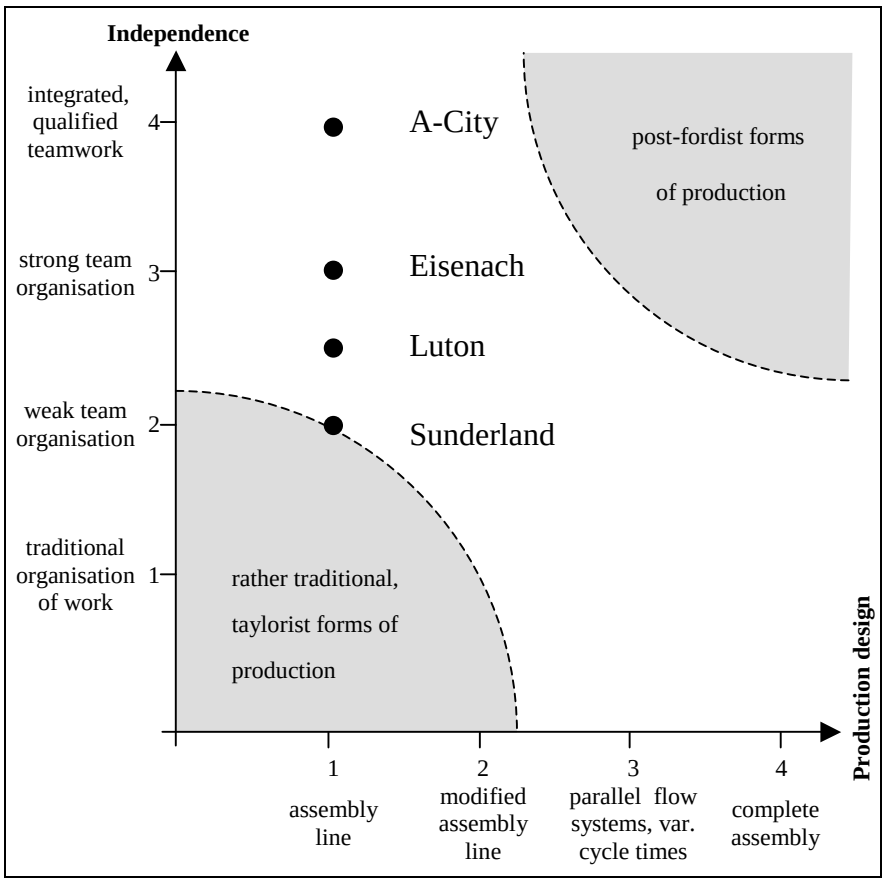
Thus, it remains to compare the organisation of work in the four plants. As I have done this in the previous section already, this shall be done briefly here.

The organisation of work in Nissan's Sunderland plant has not transcended Fordism. At best, it has supplemented classical Taylorist mechanisms of control with newer and subtler means of social control (Garrahan/Stewart 1992), above all peer control. From the workers' point of view, there are no considerable differences between a plant with a traditional working organisation and the Nissan plant, apart from the fact that they work even harder (interview notes).

The degree of workers' self-regulation goes furthest at Mercedes A-City. The case of Mercedes demonstrates that, even under unfavourable, restrictive technological conditions such as line production, it is possible to transform Taylorist forms of work into self-organised teamwork that allows greater employees' participation (Schumann/Gerst 1996: 41).

Luton and Eisenach lie between these two poles on the 'working organisation axis', whereby the degree of self-regulation is somewhat larger in Eisenach.

Figure 3: ***a two-dimensional classification of the examined cases***



Source: Berggren 1992: 105 (classification of cases by the author)

Classifying the four cases in the pattern developed by Berggren illustrates why none of the studied cases can be called post-fordist: While the introduction of teamwork in the four plants dissociates work from Fordism in one dimension to varying degrees (not a t all in the case of Sunderland though), it doesn't in the second dimension of production technology (cf. figure 3) – teams still work on

rather traditional assembly lines, not in stationary 'assembly islands'[30].

These forms of teamwork move production away from the traditional taylorist working organisation, but they do not transcend Taylorism altogether. While working organisation hardly changes at all at Nissan, the changes at the GM plants are considerable, but they remain within the framework of Fordism rather than transcending it, thus they are neo-fordist rather than post-fordist. The changes in the working organisation are most pronounced at Mercedes, where elements of post-fordist forms of production can be discovered, such as the softening the clear taylorist distinction between instruction and execution.

Yet, as mentioned before, these changes take place only in one dimension, namely working organisation (y-axis in fig. 3), while there are no considerable changes in the area of production technology (x-axis). Thus, none of the four models of teamwork transcends fordism altogether. They are neo-fordist rather than post-fordist.

7. Conclusion

The general question behind this article (and behind the two more specific research questions) is: Which impact does teamwork have on employees? This article has shown that there are different forms of teamwork, ranging from 'structural conservative' teamwork to 'innovative teamwork'[31]. While the bi-polar conceptual framework of teamwork does not depict reality adequately (any more), it is true that models of teamwork realised in different plants *do* differ considerably indeed. Thus, the impact of teamwork on employees cannot be judged a priori. An examination of the individual case is necessary. Only this can tell whether teamwork brings about an enhancement of working conditions, and possibly an empowerment, or whether it means an intensification of work and control. Teamwork has the potential for both.

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[30] which would qualify as post-fordist forms of production

[31] as defined in section three

The more employees and unions are involved in the implementation process, the more likely it is that an innovative type of teamwork will be introduced. The important fact is that there are win-win situations. There are examples of teamwork that have improved employees' job satisfaction *and* productivity at the same time. Even if the introduction of teamwork leads to an intensification of work, workers' job satisfaction might increase nevertheless if this is compensated for by greater levels of skill and increased autonomy. Mercedes A-City an example for this.

Yet, while changes in the organisation of work implicated by the introduction of teamwork are considerable, the examples studied here suggest that these changes remain firmly within the fordist production model. Cases like Uddevalla and Kalmar, where the taylorist division of labour is transcended, seem to be[32] exceptions. Thus, judging from the cases presented here, it seems premature, to say the least, to announce the imminent death of fordism.

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References

ADLER Paul S (1992), "The Learning Bureaucracy: New United Motors Manufacturing Inc", in: STAW Barry M/CUMMINGS Leslie L (Eds.), *Research in Organizational Behavior*, Greenwich, CT, JAI Press, pp. 111-194.

[32] or rather have been – both plants were closed down

ADLER Paul S (1995), "Democratic Taylorism: The Toyota Production System at Nummi", in: BABSON Steve (Ed.), *Lean Work, Empowerment and Exploitation in the Global industry*, Detroit, MI, Wayne State University Press, pp. 207-219.

ANTONI Conny H (1994), "Gruppenarbeit - Mehr als ein Konzept. Darstellung und Vergleich unterschiedlicher Formen der Gruppenarbeit", in: ANTONI Conny H (Ed.), *Gruppenarbeit in Unternehmen - Konzepte, Erfahrungen, Perspektiven*, Weinheim, Beltz/Psychologie-Verlags-Union, pp. 19-48.

AUER Peter/RIEGLER Claudius H (1988), *Gruppenarbeit bei Volvo: Aktuelle Tendenzen und Hintergründe*, Discussion Paper FS I 88-5, Berlin, Wissenschaftszentrum Berlin für Sozialforschung, Forschungsschwerpunkt Arbeitsmarkt und Beschäftigung.

BABSON Steve (1995) (Ed.), *Lean Work, Empowerment and Exploitation in the Global industry*, Detroit, MI, Wayne State University Press.

BACON Nick/STOREY John (1996), "Individualism and Collectivism and the Changing Role of Trade Unions", in: ACKERS Peter/SMITH Chris/SMITH Paul (Eds.), *The New Workplace and Trade Unionism*, London/New York, NY, Routledge, pp. 41-76.

BERGGREN Christian (1991), *Von Ford zu Volvo - Automobilherstellung in Schweden*, Berlin, Springer.

BERGGREN Christian (1992), *Alternatives to Lean Production: Work Organization in the Swedish Auto industry*, Ithaca, NY, ILR Press.

BERGGREN Christian (1997), "Advanced Automation or Alternative Production Design? - A Reflection on the new Japanese Assembly Plants and the Alternative Approach of Volvo Uddevalla", in: SHIMOKAWA Koichi/JÜRGENS Ulrich/FUJIMOTO Takahiro (Eds.), *Transforming automobile assembly: experiences in automation and work organization*, Berlin, Springer, pp. 335-343.

BUTEWEG Jörg (1995), "Modell im Alltag", *Mitbestimmung*, No. 7, pp. 26-30.

CARR Frank (1994), "Introducing team working – a motor case study", *Industrial Relations Journal*, 25 (3), pp. 199-209.

CORIAT Benjamin (1980), "The restructuring of the assembly line: a new economy of time and control", *Capital and Class*, No. 11, pp. 34-43.

EIU (Economist intelligence Unit) (1995-1999), *Europe's Leading Car Plants: Comparative Productivity Audit*, London, The Economist Intelligence Unit.

ENDERLE Peter (1994), "Das Opel-Produktionssystem im Werk Eisenach", in: INSTITUT FÜR ANGEWANDTE ARBEITSWISSENSCHAFT (Ed.): Lean *Production II. Erfahrungen und Erfolge in der M+E Industrie*, Cologne, Wirtschaftsverlag Bachem, pp. 160-166.

ENDRES Egon/WEHNER Theo (1993), "Vom plötzlichen Boom der Gruppenarbeit in deutschen Automobilfabriken: Hintergründe und Perspektiven neuer Formen der Arbeitsorganisation", *Harburger Beiträge zur Psychologie und*

Soziologie der Arbeit, No. 2, Hamburg, Technische Universität Hamburg-Harburg.

GALLIE Duncan et al. (1998), *Restructuring the Employment Relationship*, Oxford, Clarendon Press.

GARRAHAN Philip/STEWART Paul (1992), *The Nissan Enigma: Flexible Work in a Local Economy*, London, Mansell.

GEARY John F/DUBBINS Anthony (2001), "Teamworking: a new dynamic in the pursuit of management control", *Human Resource Management Journal*, 11 (1), pp. 3-23.

GERST Detlef (1995a), *Notizen zu einem Gespräch mit Harald Lieske, Betriebsratsvorsitzender bei Opel im Werk Eisenach, 06/12/1995*, Unpublished.

GERST Detlef (1995b), *Notizen zu einer Betriebsbesichtigung bei Opel im Werk Eisenach, 06/12/1995*, Unpublished.

GERST Detlef et al (1995), "Gruppenarbeit in den 90ern – Zwischen strukturkonservativer und strukturinnovativer Gestaltungsvariante", *SOFI-Mitteilungen*, No. 22, pp. 39-65.

GERST Detlef et al (1999), "Group Work in the German Automobile Industry – The Case of Mercedes-Benz", in: DURAND Jean Pierre/STEWART Paul/CASTILLO Juan José, JJ (Eds.), *Teamwork in the Automobile industry – Radical Change or Passing Fashion?* Basingstoke, MacMillan, pp. 366-394.

GERST Detlef et al. (1994), "Gruppenarbeit in der betrieblichen Erprobung - ein 'Modell' kristallisiert sich heraus", *Angewandte Arbeitswissenschaft*, No. 142, pp. 5-30.

GOTTSCHALL Dietmar (1994), "Von 152 auf 110 Sekunden", *Manager Magazin*, No. 12, pp. 239-247.

HOLLOWAY John (1987), "The Red Rose of Nissan", *Capital and Class*, No. 32, pp. 142-164.

HYMAN Jeff/MASON Robert (1995), *Managing Employee Involvement and Participation*, London, Sage.

IRS (1993), "TGWU's response to Lean Production at Rover", *IRS Employment Trends*, No. 534, pp. 5-7.

JÜRGENS Ulrich (1998), "Implanting Change: The Role of 'indigenous Transplants' in Transforming the German Productive Model", in: BOYER Robert et al. (Eds.), *Between Imitation and Innovation – The Transfer and Hybridization of Productive Models in the International Automobile Industry*, Ox-ford, Oxford University Press, pp. 319-341.

KATZENBACH Jon R/SMITH Douglas K (1993), *The Wisdom of Teams*, Boston, MA, Harvard University Press.

KEMPE Martin (2000), "Arbeiten im 1,3-Minuten-Takt", *Mitbestimmung*, No. 7, pp. 18-20.

KERN Horst/SCHUMANN Martin (1984), D*as Ende der Arbeitsteilung? Rationalisierung in der industriellen Produktion*, Munich, CH Beck.

KÖHLER Holm-Detlev (1993), "Lean-production und Standortpoker. Ein Gespräch mit Opel-Betriebsrat W. Schaumberg", *Express*, No. 2, pp. 12-13.

KUHLMANN Martin (1996), "Erfahrungen mit neuen Arbeitsformen in der Automobilindustrie - Bedingungen strukturinnovativer Gruppenarbeit", in: BAHNMÜLLER Reinhardt/SALM Rainer (Eds.), *Intelligenter, nicht härter arbeiten? Gruppenarbeit und betriebliche Gestaltungspolitik*, Hamburg, VSA, pp. 112-139.

LANE Christel (1995), *Industry and Society in Europe – Stability and Change in Britain, France and Germany*, Aldershot/Brookfield, VT, Edward Elgar.

LIESKE Harald (1993), *Vom Kollektiv zum Team – neue Strukturen in Eisenach*, Unpublished.

MERCEDES-BENZ (1995), "Rahmenbetriebsvereinbarung Gruppenarbeit in der Mercedes-Benz AG", in: BAHNMÜLLER Reinhardt/SALM Rainer (Eds.) (1996), *Intelligenter, nicht härter arbeiten? Gruppenarbeit und betriebliche Gestaltungspolitik*, Hamburg, VSA, pp. 241-246.

MICKLER Otfried et al. (1996), *Nach der Trabi-Ära: Arbeiten in schlanken Fabriken – Modernisierung der ostdeutschen Autoindustrie*, Berlin, Edition Sigma.

MURAKAMI Thomas (1995a), *Teamwork and the structure of representation at Vauxhall Ltd. (UK) and Adam Opel AG*, doctoral dissertation, University of Warwick.

MURAKAMI Thomas (1995b), "Introducing Team Working - a motor industry case study from Ger-many", *Industrial Relations Journal*, 26 (4), pp. 293-305.

MURAKAMI Thomas (1998), "The formation of teams: a British and German comparison", *International Journal of Human Resource Management*, 9 (5), pp. 800-817.

OLIVER Nick/WILKINSON Barry (1992), *The Japanization of British Industry – New Developments in the 1990s* (2nd Ed.), Oxford/Cambridge, MA, Blackwell.

OPEL (1996), *Mitarbeiterbefragung 1996*, unpublished.

OPEL (1999a), *People involvement*, unpublished.

OPEL (1999b), *Mitarbeiterbefragung 1999*, unpublished.

PARKER Mike/SLAUGHTER Jane (1988), *Choosing Sides: Unions and the Team Concept. A Labor Notes Book*, Boston, MA, South End Press.

PIORE Michael J/SABEL Charles F (1984), *The Second Industrial Divide*, New York, NY, Basic Books.

REITZ Ulrich (1999), "Globalisierung des Eisenacher Produktionssystems", in: REFA FACHAUSSCHUSS FAHRZEUGBAU et al. (Eds.), *Produktion und*

Arbeitspolitik – Herausforderungen und Perspektiven im Rahmen der Globalisierung, NN, REFA/AKNA/IAO/GfA/MTM, pp. 133-151.

ROSENSTIEL Lutz von (1978), "Arbeitsgruppe", in: MAYER Arthur (Ed.), *Organisationspsychologie*, Stuttgart, Poeschel, pp. 236-271.

ROTH Sigfried (1996a), "Wiederentdeckung der eigenen Stärke? – Lean Production-Konzepte in der deutschen Automobilindustrie", in: KISSLER, Leo (Ed.), Toyo*tismus in Europa: schlanke Produktion und Gruppenarbeit in der deutschen und französischen Automobilindustrie*, Frankfurt am Main, Campus, pp. 109-139.

ROTH Sigfried (1996b), "Gruppenarbeit in der Autoindustrie - Stand und Perspektiven", in: BAHNMÜLLER Reinhardt/SALM Rainer (Eds.), *Intelligenter, nicht härter arbeiten? Gruppenarbeit und betriebliche Gestaltungspolitik*, Hamburg, VSA.

SCHUMANN Michael/GERST Detlev (1996), "Innovative Arbeitspolitik - Ein Fallbeispiel. Gruppenarbeit in der Mercedes-Benz AG", *SOFI-Mitteilungen*, No. 24, pp. 35-52.

SHAIKEN Harley/LOPEZ Steven/MANKITA Isaac (1997), "Two routes to team production: Saturn and Chrysler compared", in: *Industrial Relations*, 36 (1), pp. 17-45.

SHAW Marvin E (1981), Group Dnamics: the psychology of small group behavior (3rd Ed.), New York,NY, McGraw-Hill.

STEWART Paul (1997), "Striking harder and smarter at Vauxhall: the new industrial relations of lean production?" *Capital and Class*, No. 61, pp. 1-7.

VAUXHALL (1992), *Working together to Win: The Luton plant agreement*, unpublished.

VAUXHALL (1994), *Team Leader's Role*, internal memorandum, unpublished.

VAUXHALL (1996), *Team Member's Role*, internal memorandum, unpublished.

WADDINGTON Jeremy/WHITSTON Colin (1996), "Work intensification and grievances at unionised workplaces in the UK", *Industrielle Beziehungen*, 2 (4) pp. 414-443.

WALTON Richard E (1984), "From Control to Commitment in the Workplace", *Harvard Business Review*, 63 (2), pp. 77-84.

WICKENS Peter (1985), "Nissan: The thinking behind the union agreement", *Personnel Management*, No. 8, pp. 18-21.

WICKENS Peter (1987), *The Road to Nissan - Flexibility, Quality, Teamwork*, London, Macmillan.

WOMACK James P et al. (1990), *The Machine that Changed the World*, New York, NY, Rawson Associates.