

Forum





Círculo FEUC

Innovation-by-Agreement: Activating the Lisbon Agenda¹

Teresa Carla Oliveira / Stuart Holland

Faculty of Economics – University of Coimbra

Introduction

The Lisbon Agenda of 2000 confidently assumed that Europe could combine competitiveness with reinforced employee rights. When it was re-launched in 2005, convinced believers in the former EU-15 were hard to find. Globalisation and enlargement had hollowed it out. Besides which, different actors with different interests saw it differently. Some saw it as a call for more flexible production with reinforced rights, or flexibility-by-consent, notably, the ETUC, whose general secretary John Monks, forwarded a proposal on these lines to the employers' federation UNICE in 2004². Others took it as a call for more flexible labour markets and reduced employee rights, or flexibility-by-constraint. The 'consent' view focussed on promoting innovation by reinforcing rights; the 'constraint' view focussed on cutting costs and reducing them. Given the choice, most management preferred the constraint option.

The Lisbon Agenda has been more cited than read, especially by much of the European press. In fact it called for:

'giving higher priority to lifelong learning as a basic component of the European social model, including encouraging agreements between the social partners on innovation and lifelong learning; by exploiting the complementarity between lifelong learning and adaptability through flexible management of working time and job rotation (and) furthering all aspects of equal opportunities, including reducing occupational segregation, and making it easier to reconcile working life and family life (European Council, 2000).

Lisbon, in these senses, was a call less for reform of labour markets than for a renewal of the European social model based on both economic efficiency and social consent (EU Commission, 1993). The background case behind this call was for innovation-by-agreement between social partners, which had been argued in an earlier report to Jacques Delors (Holland, 1993), and invited by the Portuguese Presidency of the European Council (Holland, 2000). This paper extends this reasoning and draws upon methodologies which we have independently and jointly developed, including a project for the European Commission to follow through the commitment of the Lisbon Agenda to lifelong learning (Oliveira, 2003).

It does so first by considering contrasts between flexible labour market theory and flexible production theory. Second, it addresses the widespread presumption that the 'flexible production debate' is over, or its claims exaggerated, suggesting inversely that its implications for western economic and management theory and practice have been understated. Third, it addresses the degree to which effective flexible production depends on explicating tacit knowledge, latent abilities and implicit skills within organisations. Fourth it suggests that social dialogue on the basis of principles of feasible mutual advantage for organisations and their employees can operationalise the principles of Lisbon Agenda and enhance both economic and social efficiency, before drawing some

¹ This paper followed the FEUC Conference Series *Europe in Question* April-June 2003, sponsored by the Bank of Portugal and opened by the President of the Republic, and was available for the FEUC seminar series *Can Portugal Compete? The Autoeuropa Paradigm*, January-June 2005.

² In Portugal, both João Proença and Carvalho de Silva, general secretaries of the two leading trades union confederations, endorsed the flexibility-by-consent approach at a conference on *Innovation-by-Agreement* at the Faculty of Economics of the University of Coimbra in 2003.

1. Conflicting Flexibility Paradigms



conclusions concerning the relation of economic and social efficiency in terms of enhancing competitiveness by more flexibly meeting employee needs.

Gosta Esping-Andersen and Marino Regini (2000) have observed that 'worker protection is not just a matter of welfare, but also may be conducive to efficiency'. They admit that hard trade-offs are involved. Yet add that: 'Firms - and entire nations - which choose to compete on quality rather than mere price, need a qualified, dependable and cooperative workforce. Cheap labour cannot guarantee such qualities... As a growing literature attests, markets alone are not very capable of assuring adequate workforce training. Over deregulated markets may engender a low skill equilibrium, the long run effect of which is productivity lag and loss of competitiveness'.

Flexibility-by-Constraint

Since EU enlargement, few firms in the former EU-15 have been impressed by this argument. Notably, since 2004, leading companies have opted for flexible working time by constraint. Siemens led the way by proposing in the spring of 2004 to move 2.000 jobs in two plant, producing cordless and mobile phones, from North Rhine Westphalia to Hungary. In June 2004, the workers at both German plant agreed to work 40 rather than 35 hours a week in return for a commitment not to move the jobs out of the country until 2012, and to do so for no increase in pay. Within a week, Daimler-Chrysler announced that it also wanted to increase working time from 35 to 40 hours for no pay increase. Karstadt-Quelle, a department store and mail order company, announced its intention to do the same, as did Thomas Cook in Germany, and Continental Tyre (Münchau & Atkins, 2004).

This challenge rapidly leapt borders. In France, within days of the Siemens deal, Bosch gained an agreement from a majority of its workers at a components plant near Lyon to do an extra hour a week without extra pay. The sanction was otherwise relocating in the Czech Republic. By December 2005 Bosch also was

seeking a 40 hour week for no extra pay. Dozens of other companies followed suit including EADs, the giant high tech engineering and defence group, which is a major shareholder in Airbus. Hewlett Packard was offering to reduce job cuts in France by a quarter in return for longer hours, but while still planning to move most abroad (Hollinger, 2005). This was despite landmark legislation in France only a few years earlier for a 35 hour week. By the end of 2005, according to official figures, French workers on average already were working 39 hours a week (Hollinger, *ibid*).

Suzanne Berger (2006) recently has argued that there are two strategic choices for enterprise faced with the option of gaining access to lower cost labour: reorganise or relocate. The German and French firms which just have lowered unit labour costs by gaining longer hours for the same pay are playing a variant on this: cooperate or we relocate. And their strategy is consistent with the insider-outsider model of Assar Lindbeck and Dennis Snower (1988) that their competitiveness is in question because insiders within strongly unionised companies defend high wages and benefits against outsiders who would be prepared to work longer for less on both accounts. The sanction of relocating to where labour costs and benefits are lower is a variant on this theme, which itself has wide support in German management thinking. Hans Werner Sinn, head of the Ifo institute in Berlin, claimed that a 42 hour working week - a net average increase of seven hours - should be the German industry norm (Sinn, 2003). Klaus Zimmermann, head of the less conservative DIW institute in Berlin called for more than double this increase to a standard 50 hour week (Münchau & Atkins, 2004).

Such claims can be challenged on macroeconomic grounds. For instance, in contrast with the claim of allegedly inefficient European labour with more productive US labour, productivity per hour worked is higher in France than in the US. Nor are longer hours in themselves either a necessary or sufficient condition for international competitiveness. Germany in 2004 overtook the US as the leading export economy in the world. Since in



population terms it has less than a third of the population of the United States, this indicates that Germany as a whole is more than three times as competitive as the United States. Besides, where Germany domestic productivity may be low, this is much related to low growth in its domestic market, attributable less to the flexibility or otherwise of its labour markets than to constraints from the EU's stability pact (Rühmann, 2004; Soukiazis & Castro, 2005).

Flexibility-by-Consent

Also, behind the different views of the flexibility debate, there is a paradox. It is not flexible labour markets which give leading Japanese firms such as Toyota a competitive advantage over their global competitors but flexible production, product innovation and continuous improvements in methods of work organisation (Colenso, 2000; Womack & Jones, 2005). Japanese firms emulating the Toyota production system have achieved this because they guarantee their core employees lifetime employment and profit sharing. It is precisely because they are 'insiders', with both job security and a share in the success of the firm, that they are so willing to propose innovative methods of work operation. (Womack, *et al.*, 1990; Womack & Jones, 2005). And flexible production is a global winner. In 1946 Toyota was producing only as many vehicles in a year as General Motors was producing in a day. By the early 1980's its output already was half that of GM, and now it is set to overtake GM to become the world's no 1. automobile producer (The Economist, 2004b, 2005).

The Japanese flexible or 'lean' production paradigm reverses the Lindbeck-Snower (1988) 'insider-outsider' model and also the western flexible labour market model. Western firms, as in a standard Cobb-Douglas production function, have tended to treat capital as a fixed cost and labour as a variable cost. But because of their commitment to lifetime employment, the companies leading Japanese firms have to treat labour as a fixed cost. It is this that drives them to improve and diversify their

investment by long-term process and product innovation to ensure efficiency and competitiveness. Nor have Lindbeck and Snower (1988) tried to reconcile the Japanese combination of lifetime employment and flexible production with their 'insider-outsider' model. Snower has admitted that they have not even looked at it³. Paul Samelson (2004), and Gomory and Baumol (2004) have explained much of what is happening in terms of downwards wage pressure with globalisation in terms of factor price equalisation. But, again, as with the Lindbeck-Snower (1988) model this stays within a standard Cobb Douglas production function in which innovation, or technical progress, or labour skills, or operational culture are residuals, if they feature at all.

By contrast, the Japanese have come closest to Schumpeter's (1949) claim that innovation merits being seen as itself a value-creating factor of production. Innovation as a strategy has been typical of most leading Japanese firms since the 1973 oil shock. While western companies then cut costs by reducing labour, or as now by downsizing or demanding longer hours, the Japanese leaders, encouraged by the Ministry of International Trade and Industry (Okimoto, 1989) innovated their way out of global recession from the 70's by bringing forward R&D and accelerating introduction of the range of products in which they now dominate world markets. We later suggest that these central differences in production and labour relations paradigms have been missed by those critics of Japanese flexible production who see it only as a more sophisticated form of Fordism, or cost cutting, because it also is mass production. We also submit that many commentators who have seen the later trend to 'in house' company unions in Japan, have missed key role played by trades unions in the origin of the Toyota production system and the social partnership central to it.

Kenichi Toyoda, whose family name means rich rice field, had been producing staff cars or the Japanese military during WW2 and with a depressed civilian market, in 1946, was only

³ When one of us put this point at the launch of their joint book by Dennis Snower in London in 1988, he replied: 'I don't know about Japan. It may be different'.

producing a few thousand vehicles a year. He had visited Ford's River Rouge plant in the States and realised that he could not possibly achieve high volume Fordist economies of scale. Instead, in 1950, he opted for cuts in labour costs and benefits, as European producers now are. But, under the US occupation, Japanese trades unions enjoyed rights drafted by American New Dealers who had failed to get them accepted in the States in the thirties, including the right to occupy a plant if not consulted on redundancies. They did so, brought Toyota to his knees, and thereby opened the dialogue which resulted in an end to job demarcation, the introduction of multi-tasking and multi-skilling, and economies of scope. Most centrally they gained the right to profit sharing and lifetime employment which assured the crucial condition for continuous improvement that workers could see that innovations in terms of work operation were to the mutual advantage of themselves as well as the management. Sensitive to the fact that he needed a better brand name than 'rich rice field' Kenichi Toyota had gained advice that changing the 'd' to a 't' in the family name would suffice since Toyota, in Japanese, meant nothing. Now it means near everything in terms of a post Fordist production paradigm (Womack, *et al.*, 1990 and direct enquiry).

One of the key advances in economies of scope, or gaining more from the same capital equipment, was reducing die changes on giant cold steel presses for body parts from three weeks to a few minutes. The US auto majors could afford to take three weeks, since this suited their by then well established 'planned obsolescence' strategy of introducing new models annually in the autumn. Workers during the summer holiday break would fit, test and then fix the new dyes for pressing new body parts for each new model on its dedicated assembly line. It was by positioning the dyes horizontally, rolling them into place and fitting them with clips, that Toyota's engineers and workers managed to reduce changing them from three weeks to three minutes. Combined with other advances such as just-in-time delivery of parts to the point of assembly, or *kanban*, this meant that Toyota could produce more than one vehicle on one assembly line. Just-in-

time parts delivery rather than Henry Ford's just-in-case stocking of parts reduced costs by a tenth or more (Womack *et al.*, 1990). Also, unlike earlier practice by the US auto majors, and following Toyota's example, Japanese workers can stop the production line if a fault is going through which, essentially, is how they have achieved fault-free production.

Big Leaps – Small Steps

Kaizen or 'continuous improvement' is more important in terms of understanding the efficiency gains of leading Japanese firms than just-in-time delivery or *kanban*, most of which the US and European auto majors have replicated. *Kanban* has been crucial in reducing or eliminating stocks, and also has been improved over time. *Kanban* in Japan was improved after its introduction by enabling the components for an individual product, such as a car, to be customized to the specifications of individual consumers who then were delivered 'their car' within days of ordering it. Some US and European producers have achieved a high degree of product customization, notably Dell in computers, which is a key feature of its success. Volkswagen's Autoeuropa plant in Portugal has brought this to a fine art, and can make multiple variants of the same model on the same assembly line (FEUC Autoeuropa, 2004). Inversely some auto producers such as DaimlerChrysler are concerned that relocating entire plant will seriously disrupt the *kanban* system, which works best when the component suppliers either are local or not distant, and already have been successful on the basis of both iterative trial and error, and mutual trust. This in turn echoes a wider point made by Berger (2006) in that a unit cost gain in terms of wages and benefits from relocation may be nullified by a loss in the efficiency derived from both current skills and previous experience.

In terms of learning from or at work, Toyota gives the equivalent of seven years retraining either formally, or informally on-the-job. Koike and Inoki (1990) evidence what they with reason call 'a phenomenal growth of up-grading training' in leading Japanese firms





across sectors following the impact of the first OPEC oil price increases in September 1973. At the time, in reaction to falling rates of growth of global demand, western firms were laying off workers and dispersing their skills. In the Japanese case they were continually up-grading them. On job rotation and variation, workers in leading Japanese companies can spend some years in production, some in marketing, some in cost control and accounts, some in relations with supplier companies. Spending time with suppliers facilitates 'voice' rather than 'exit' (Hirschman, 1970). Not understanding how a supplier could assure both quality and a low price for a component, Toyota, again, invited itself to visit it, and came to realise that it was spending too little on R&D. It agreed to increase the price paid for the component on condition that the company developed its R&D division and developed its own innovation trajectory (direct enquiry). Job rotation also facilitates understanding of both the scope and constraints facing other parts of an organisation or a production plant. On these principles, the middle managers in Volkswagen's Autoeuropa plant in Portugal have initiated an 'in my shoes' policy by which they spend the equivalent of several weeks a year working alongside other managers, such as the manager for cost control with a production manager, in a manner in which the implicit conflict of their demands can be better understood and reconciled (FEUC Autoeuropa, 2004).

2. Flexible Production in Context

Some commentators have suggested that both Toyota and the auto industry are special cases and that other sectors of the Japanese economy are more typical of inflexible Fordist mass production. Wood (1989, p. 33) has argued of flexible production that 'nothing in these innovations implies an end to mass production'. Berggren (1989, p. 172) has claimed that the Japanese are 'the modern masters' of standardisation and Taylorist task segmentation. But we submit that this is misconceived. Of course, Toyota is into mass production, otherwise it would not be about to overtake General Motors as the world's no. 1 auto producer. But its paradigm is not inflexible mass production of standardised

products but flexible, customised volume production. It is flexible production as a flexible response to individualised demand that enables Japanese consumers to identify eighty or more specifications that they want in or on 'their' vehicle and have it delivered to and for them within days (direct enquiry).

Otherwise, Japanese flexible production is not Berggren's (1989) 'modern mastery of Taylorism' but its inverse. In Taylor's (1911) operational logic, what was to be done was according to his 'scientific management', and decided top-down. The instruction needed to do a job was minimal because the task was so, with Taylor notoriously claiming that if you gave him a man for minutes he would train him for life. Taylor did not want craftsmen who were multi-skilled and multi-tasked because his design was to reduce labour to its least possible task, and de-skilling rather than re-skilling (Lacey, 1987). It was because his shop floor experience showed him that workers skilled in multiple tasks could slow down the pace of work that he had designed a de-skilled production system (Monin & Monin, 2003). Taylorism is the inverse of the Toyota production system in which the main aim is to achieve multi-tasking through multi-skilling, and continuous improvement in methods of work operation suggested by employees rather than designed top-down in a Taylorist manner (Womack *et al*, 1990; Womack & Jones, 2005). Taylorism also is by definition inflexible. His presumption that there was 'one best way' meant that it could not be changed once achieved unless top-down by a new 'scientific' operational design. Such a Taylorist operational logic excludes organisational learning. Toyota's is based on it.

The further claim that Toyota and the auto industry are special cases is correct but in degree rather than in kind. Continuous improvement for years has been integral to all Japanese management thinking in bigger business (Nonaka, 1994, 1998; Colenso, 2000). And, even within the Japanese auto industry, Toyota has been exceptional rather than typical. It has been up to five times more productive per employee than other vehicle producers such as Mazda; Mitsubishi has run into difficulties; Nissan's own problems prompted its joint venture with Renault. But Carlos Ghosn of Renault in reverse learned

from the operational practice of kaizen style continuous improvement in Japan. And Toyota still is the global production pacemaker in terms of both process and product innovation. Its hybrid Prius is gaining global volume at 200,000 vehicles a year at a time when US companies are calling for federal subsidies even to develop hybrid technology. To claim that the Toyota production system does not represent a paradigm for other industry is as useful as to claim that Fordism as a production paradigm is meaningless because it also originated in the auto industry.

None of which implies that Toyota gets everything right all the time. With other Japanese auto producers it can make big mistakes, as it did in with its first European FDI foray at Burnaston in Derbyshire in 1992, finding that European consumers did not want 'bland boxes', even if they were fault free. As Thierry Dombrevail, head of sales for Toyota recently put it: 'We didn't have a product that really appealed to the European customer in terms of exterior or interior design, powertrain or driving dynamics', and the break even point of 200,000 vehicles a year at Burnaston, only after entirely new models, took another five years (Mackintosh, 2006a). But the difference between a culture of commitment to continuous improvement meant that Toyota learned and reacted, within half a decade, whereas the US auto majors have failed to do so for decades, still producing models that, other than 4x4 pick-ups, US consumers did not want, not least because they were unreliable (Mackintosh, 2006b).

Also, if approaching a Weberian ideal type in production efficiency (Weber, 1947), the Japanese flexible production model should not be idealised. In Japan it involves varying degrees of implicit constraint. Non performance or non compliance can result in loss of promotion which, in a system where pay in the main has been through seniority, can mean both loss of income and loss of face. Where Japanese firms have transplanted flexible production to other countries without guaranteeing lifetime employment, or offering profit sharing, case studies have found it to be as much 'mean' as 'lean'. Tacit resistance and high labour turnover are common in several Japanese

transplants, just as they were under Fordist mass production (Parker and Slaughter, 1988; Garrahan and Stewart, 1992; Wilkinson *et al.* 2001).

Nor is it feasible in most cases to replicate Japanese lifetime employment in Europe for those companies exposed to globalisation, even if they could well be advised to offer no involuntary redundancy agreements for the lifetime of a product or product range, which could have a similar effect in terms of increasing willingness to suggest methods of work operation and continuous improvement. Many European companies have managed the 'big leap' from Fordist standardised mass production and inflexible economies of scale to post Fordist flexible economies of scope, and especially the auto majors. But it is evident that those that now are opting for longer working hours rather than continuous improvement are failing to maximise the 'small steps' of kaizen or 'continuous improvement' which has given leading Japanese firms their competitive advantage in global markets (Colenso, 2000) despite having some of the highest real wages and social benefits in the world.

Meanwhile, as Toyota is set to become no. 1 in the world auto league, General Motors, Ford and Daimler-Chrysler are finding themselves either with the wrong vehicles (GM) or increased faults and loss of quality with expanded production (Daimler-Chrysler's Mercedes division) and, with Ford, committed to tens of thousands of redundancies in both Europe and the US (Milne, 2005; Milne & Mackintosh 2006). The fact that the big three in the US, despite some renegotiation, are faced also with private health and pensions for former employees equivalent to adding \$1,500 or more to the cost of a vehicle is giving rise to claims that they may need to file for chapter 11 bankruptcy proceedings unless they are bailed out by the federal government. GM has used this prospect to gain wage cuts and reduce pension rights from the UAW (Simon & Mackintosh, 2006). But this is a defensive tactic, not a long-term strategy. And it is in particular their failure to achieve continuous improvement that underlies the long run competitive failure of the US auto majors (The Economist, 2004a, 2005).





For instance, GM should know everything there is to know about flexible production and post Fordism since it entered a joint venture in 1986 with Toyota in the NUMMI production facility with Toyota in California (Womack *at al.*, 1990). But while it learned the operational logic of production flexibility and just-in-time components delivery, GM focussed on flexible production as a technique rather than on continuous improvement as an organisational paradigm. It prioritised cost rather than innovation, and thereafter took organizational decisions that were the inverse of the Toyota hand-in-hand relations with suppliers and concern to develop joint innovation trajectories. It hived off its internal components division to an independent company, Delphi Automotive Parts which, in 2005 filed for bankruptcy (The Economist, 2005). Yet it is this failure to grasp that flexible production as a paradigm is both about reducing costs and continuous process innovation and quality control that underlies the long term competitive failure of the US majors. For, even with lower productivity levels in the States than in Japan, the Japanese transplants in the US can produce and sell a fault free vehicle for \$1.500 less than the big three which, with higher health and pension charges, gives an average vehicle differential of \$3.000 (The Economist, 2004a).

– Local and Global Context

Lifetime employment never included more than a seventh of the total Japanese labour force. Much of the rest of the Japanese economy has been less than efficient to hyper-inefficient in terms of employment levels, as in its high cost agriculture, and highly staffed services, including banks. But this has been an implicit societal choice, to ensure high employment levels and social cohesion, supported by transfer of the efficiency gains from its world leading companies to the rest of the economy through taxation.

Therefore in services, and not least banking the Japanese economy is not flexible, waste cutting or 'lean' (Womack *at al.*, 1990; Womack & Jones, 2005). Japan's recession in the 1990's was due to over inflation of

property values, loans made on this basis, and defaults and contraction in a major banking crisis when the bubble burst. Yet the long recession in Japan in the 1990's also was not due to a loss of efficiency in its leading firms but in key part to their successful export from the 1980's of its high efficiency, flexible production model through direct investment to the United States and Europe. Up to a third of their global production now is abroad (The Economist, 2005). Japanese production in these major markets substituted for a large share of Japanese exports to them, and thus slowed Japan's economic growth. This effect was noted by Bertil Ohlin in the book for which he gained the Nobel Prize (Ohlin, 1933) but has been neglected by economists ever since.

Ohlin's parallel argument that countries will tend to specialize trade in the factor in which they have a comparative abundance, i.e. capital rich countries in capital goods and poorer countries in labour intensive goods gained prominence in the form of the Heckscher-Ohlin theory, but has been superceded since multinational companies now can combine low cost labour in emerging economies with intensive use of capital and technology. Yet it was not access to lower cost labour that attracted Japanese firms to the US and Europe, but fear of protection, especially from the US, if their greater competitiveness were to decimate the domestic market dominance of US companies, a fear well illustrated by George W. Bush trying to resort to protection for steel, and pressures against liberalisation by US farmers and textile producers. Again, such a tariff effect in promoting FDI had been identified by identified by Ohlin (1933).

During Japan's 1990's recession, and not least following the financial crisis of over exposure of its banks, there were intermittent reports that lifetime employment in Japan was finished. And its context has been changing. Some companies in Japan have been out sourcing more employment. And there has been an increase in part time employment, not least with increased feminisation of the labour force. During the recession, most leading firms introduced a combination of hiring freezes and early retirement to reduce labour costs. The close links of leading

companies to *keiretsu* banks in several cases have been loosened, as the banks addressed their own problems, and restructured. But pronouncements of death of the lifetime employment paradigm are premature. It remains central to the international competitive advantage of its leading Japanese firms. As Pilling has put it, Japanese companies 'have managed to reinvent themselves without aping the Anglo-Saxon model' (Pilling, 2006). Canon, which flirted with shorter term contracts, has reconfirmed the principle of employment from graduation to retirement for the central reasons of building cumulative skill trajectories, and keeping workers' knowledge, skills and experience 'in house'. As Fujio Mitarai, President of Canon, has stressed, the company thereby gets a workforce which is constantly relearning while Canon also keeps its process innovations secrets inside the company (Pilling, 2004).

3. Tacit Knowledge, Latent Abilities and Implicit Skills

Consistent with Fujio Mitarai's claims, it now is widely recognised in management theory and organisational psychology that one of the main competitive advantages of firms is the tacit knowledge that their employees have accumulated from non-formal learning at work. This interest builds on the work of Michael Polanyi (1958, 1962), for whom tacit knowledge is procedural 'know how' rather than semantic 'know that'. Reber (1976, 1989) pioneered the concept of 'implicit learning' in the context of tacit knowledge. Nonaka (1994) claims that organisational knowledge has four dimensions: tacit and individual; tacit and collective; explicit and individual, and explicit and collective, and has drawn on Japanese evidence to illustrate this. As he also puts it, giving examples from NEC, Sharp, Canon, Matsushita, Honda and other companies, when tacit and explicit knowledge interact:

'Something powerful happens. It is precisely this exchange *between* tacit and explicit knowledge that Japanese companies are good at developing... What's more, as new explicit knowledge is shared throughout an organization, other employees begin to internalize it – that is,

they use it to broaden, extend and reframe their own tacit knowledge' (Nonaka, 1998, pp 29, 31).

In analysing corporate performance in international case studies, Baumard (1999) has stylised 'individual and collective' knowledge modes which are either explicit or tacit. For Ambrosini and Bowman (2001) tacit knowledge is 'deeply engrained' in people or organisations, while abilities or skills may be unrecognised simply because "people never thought of what they were doing, they never asked themselves what they were doing, and nobody else ever asked it either" (ibid, p. 816). Innovation-by-agreement is designed precisely to remedy this by identifying tacit knowledge, latent abilities and implicit skills through social dialogue, and projecting them in new joint 'innovation trajectories' of mutual advantage to both local plant management and other employees.

Recognition of the efficiency derived from tacit knowledge, and mobilising latent abilities and implicit skills through social dialogue contrasts markedly with recent fashions for classifying employees' knowledge as Human Capital (Becker, 1964) or Intellectual Capital (Edvinsson, 1997, 2000). This not only begs the question who 'owns' the stock or flow of such imputed capital and in whose interest it is deployed. Both Human Capital and Intellectual Capital theory stress formal qualifications and inputs because they can be measured, when the knowledge of those who best know what could be improved is mainly tacit, and how it has been learned implicit (Reber, 1976, 1989). One of the most commonly cited arguments in the context of globalisation - Porter's 'competitive advantage' - is widely recognised to depend on tacit knowledge despite the fact that Porter himself makes no reference to it, attributing continuous improvement to technology rather than the labour process, and claiming that it has diminishing returns (Porter, 1998).

- *Transplanting Gains*

Where the Japanese flexible production and kaizen style continuous improvement model have been translated with success, this in some cases has been because it fits with pre-existing work attitudes and values. Consistent





with Riesman's (1954) distinction of 'other directed' and 'self directed' work, Swedish workers have found that kaizen is a set of practices and ideas, or 'technologies of the self', that enable them to 'take care of operations' (Styhre, 2001). But they have done so in large part because this was the farming tradition which shaped attitudes to work in the transition of Sweden from an agricultural to industrial society, and in particular the 'fix it' rather than 'send for help' culture typical of isolated farms (Styhre, op. cit).

In China, innovation in new methods of work organization varies between companies and sectors, as does quality. According to Hal Sirkin of the Boston Consulting Group, some big car makers initially reconfigured their capital-labour ratios in China to use more labour in their Chinese plant (The Economist, 2004). A major recent World Bank sponsored study into the vehicles sector found that in key components Chinese firms have moved to high levels of capital intensity, using robot welding, even if as yet using a higher level of manning on robots than is customary in high wage countries. As the report says: 'By so doing, they can achieve major cost savings by attaining levels of scrap losses that are extremely low relative to international best practice'. (Sutton, 2004). So, certainly, some companies in China are learning flexible or 'lean production'.

However, it should not be assumed that major relocations because of lower labour costs necessarily can match the efficiency gains feasible from continuous improvement in developed industrial countries. Neither Volkswagen nor Siemens have made a success of their low cost labour operations in China. Early into China, by 2004 VW saw its market share fall from nearly half of the FDI auto market in China to single figures. Siemens has failed both in Europe and in China with cordless and mobile telephones and within a year of gaining longer hours for the same pay in its plant in its German plant sold both of them and its China operations to a Taiwanese company (Wassener & Hille, 2005).

Some of the reasons, and the formidable operational gains that can be made in high wage countries from drawing on workers' tacit knowledge and implicit skills are apparent

from an analysis of Japanese-Thai and Japanese-Malay joint ventures in different sectors, in which a University of Tokyo study found that even where the Thai or Malay ventures were using newer plant and technology, their efficiency ranged from only one fourth to one third that of the Japanese partner companies' production in Japan (Koike and Inoki, 1990). Holding capital and labour constant, they attribute productivity differences to the differences in skills and experience of the respective labour forces. They stress that such skills for the most part are derived from informal work experience and innovative work practices and noted a phenomenal growth of 'up grading training' in Japan from the time of the impact of the first oil crisis in 1973. This is customised to what workers already have learned in on-the-job training and is an extension and formalisation of informal skills (Koike and Inoke, *ibid.* pp 237-238). They also note that efficiency is greatly improved when production workers are able to point out 'some part of the process that should be modified according to their own experience' and add that for this 'such workers must know both the structure of the machines and the logic of the production process' (Koike and Inoke, *ibid.* p.9).

It therefore is by drawing on implicit skills and with commitment of both management and labour to continuous improvement, that high wage cost Japan for decades has been able to keep ahead of low cost Asia even when the Asian firms concerned are using the same or more modern technology, and the same or similar methods of work organisation. This is why Toyota, with high labour costs and with a strong yen, continue to be more competitive from Japan than any other world auto producer. It also implies that European firms still located in the EU-15 can in principle achieve major efficiency gains if they and their employees can mutually commit to continuous improvement.

By contrast, lengthening working time for the same pay without continuous improvement already can be one foot in the grave for the plant concerned, its workers *and* its local management, as already has been the case in Germany. When most companies were national, their operating management tended to side with the interests of owners and

shareholders rather than employees. However, the classic oppositional tactics of national management and national unions now are being transformed by the need for plant management and unions to cooperate in achieving efficiency gains precisely under the threat that, unless they achieve them, the company for which they both work will relocate. For, if production is relocated either elsewhere in Europe, or outside Europe, the jobs of local management also are in question. Even if some of them are offered postings elsewhere, few of them will be willing to take them if this means leaving or relocating their partners or families. Both employees and managers at plant level therefore have formidable incentives to achieve efficiency gains through social dialogue.

This is evident from a case study of Autoeuropa in Portugal, where management and employees were able to pull it to near top in Volkswagen's European efficiency league table. Autoeuropa made the 'big leap' to post Fordist methods of flexible work operation but also did so in terms that have 'internalised' the operational psychology of continuous improvement in precisely Nonaka's (1994, 1998) and Baumard's (1999) sense. With each new model, unlike Taylor's (1911) 'one best way', there is a learning curve because continuing improvement is possible. Autoeuropa still is only on the mid slopes of this with its current model. It also is constrained because it is a one-car plant, where the model is chosen for it rather than by it. Which vehicle it can produce, on what design, and with which components, is decided entirely by head office management. If market demand for the model is not strong, this feeds back into strains on the principle that employees in times of slack demand, should be redeployed or offered leave rather than made redundant. Nonetheless, the discretion of local managers and employees in seeking new methods of work operation through continuous improvement has been total, and Autoeuropa have made the most of it through mutual voice and dialogue within individual work groups, and between different groups and managers. Within wider global constraints, it has shown that in terms of operational efficiency 'Portugal Can Compete', and do so well (FEUC, 2005).

4. Recovering the Social Agenda



Such involvement of employees in change, and enabling them to give 'internal voice' at all levels is vital for operational learning and innovation, whether the context is radical, such as transition from inflexible Fordist to flexible post Fordist production, or evolutionary in the sense of successive small steps achieving continuous improvement (Oliveira & Holland, 1998; Colenso, 2000). And such voice is vital if flexible production and continuous improvement is to be gained on the basis of consent.

What emerges from international evidence on worker participation (Heller, op cit.) is that the essence of a learning organisation is not only a style of leadership which encourages and recognises such learning, but proactive participation in proposals for either organisational or operational change. To be effective these should be 'middle-up' (middle management to plant level or plant management to organisation level) and 'base-up' (any employee or group of employees) rather than only 'top-down'. The organisation therefore becomes more self-directed (Riesman, 1954) in its learning from the tacit knowledge, latent abilities and implicit skills of its workforce than 'other-directed' by only top-down design for change.

This does not mean that there should not be an initial conception or design for operational or organisational change. Someone has to start the process, whether senior corporate management, or plant management, or employees, through a trades union. Yet Argyris and Schön (1974, 1996.) have found from widespread international case studies that the failure to achieve deep 'double loop' learning of the kind implied by a paradigm shift is mainly by top and middle management. Resistance to paradigmatic change also can confront the tacit norms and implicit rules of what other employees think is to be, or ought to be done, or not done (Oliveira, 2002). Proposals for change in operational logic also are unlikely to succeed unless they make allowance for what Pascale (1990) calls 'creative dissent'. Feedback by middle management on an initial proposal for a change in operational or organisational



logic from top management may be common. Asking employees themselves what they could do with their skills and experience is less so. Asking them also to propose rather than react to changes in methods of work operation is uncommon. Yet proposals of the kind vital for continuous improvement are more likely to succeed if they can be made by employees at all levels and given voice through dialogue of the kind which can achieve both operational and thereby organisational learning and improvement. And this is central to the case for innovation-by-agreement.

– *Mutual Advantage*

Innovation-by-agreement therefore offers dialogue on organisational learning and innovation not only in terms of employees responding to change decided already by management, but how they and middle management can contribute to it in a manner which is of mutual advantage to themselves and the organisation.

On the other hand, as already stressed, European companies faced with global competition and increased market insecurity, may be able to offer employees profit sharing within various bonus schemes, but cannot readily assure them lifetime employment. It was for this reason that the background paper recommending innovation-by-agreement to the Portuguese Presidency of the European Council (Holland, 2000) proposed:

1. The right to negotiate the incidence of work time and personal or life time.
2. The right to formal skills extension in the context of skills path planning and 'customised' training extending the informal skills of groups of workers.
3. Recognition of implicit skills and experience and explicit skills extension in the form of job redesign and re-designation.
4. The right to propose new methods of work operation.

Innovation-by-agreement is a process. The commitment in Japan to lifetime employment and profit sharing is not explicit in terms of an employment contract but closer to what Guest

(2003, 2004) and others have called a 'psychological contract'. This works in Japan because it has been embodied in both custom and practice for decades. In Europe, not least in view of the seismic shifts since 2004, mutual advantage is more likely to be achieved if the organisation can gain consent to flexible production and continuous improvement, while employees have the right to enhance personal fulfilment at work and to negotiate a more flexible balance between their work life and family or social life. Further, such a mutual advantage paradigm has the potential to combine what Japanese models of continuous improvement have not: both economic efficiency for the enterprise and social efficiency in the sense of more effectively meeting the personal needs of employees.

Innovation-by-agreement does not exclude parallel or integrated bargaining over pay and working conditions. It is not a substitute for increased pay justified by efficiency increases or increased sales. Nor is it a substitute for promotion. But part of its force is precisely that the process should extend collective bargaining beyond pay and working conditions to enhance the economic and social efficiency of enterprise, and facilitate continuous improvement in learning organisations. The challenge of individualising rights and life time needs within a collective bargaining framework is demanding. But the principle of innovation-by-agreement can be included in a collective bargaining agreement, with the practice being an ongoing process of social dialogue at plant level and the rights of individual workers or groups of workers to negotiate the incidence of working time. The process can:

- include both managers and workers, rather than just managers or just workers;
- enable individual proposals for new methods of work or task operation to be individually recognised and credited;
- allow non-formal learning-from-work to be recognised and credited in terms of job redesign or re-designation;
- combine flexible methods of work organisation with job variation and job rotation to offset alienation from doing one job and one job only;

- facilitate customised training and 'enhanced competence profiling' to extend and diversify the application of skills;
- enable skills path planning for both managers and workers rather than only career planning for upper levels of management;
- enhance the relation of non-work life to life at work by allowing negotiation of the incidence of individual or group working time to non-work time to suit family or other personal needs;
- recognise overtime working as 'time credits' which workers or managers later can draw on as 'undertime' when they may, on an agreed basis, take time off for recreation, further education or training, or for enhanced family time.

Time credits negotiated within the context of an innovation-by-agreement framework therefore would allow for overtime by a significant share of the workforce when market conditions demanded it, but allow workers the right to offset this by being able to customise the incidence of their working time. In this context trades unions might choose to negotiate individual work and life time agreements within three broad categories: (a) younger employees who have, or as yet have, no children; (b) employees choosing to extend maternity and paternity leave to care for children, and (c) older employees with no direct family responsibilities. Being able to draw on overtime credits therefore could be customised to individual needs and significantly enhance quality of life, while allowing management greater flexibility in terms of working time, within a negotiated framework.

Again, it is consistent with the principle of innovation-by-agreement that new methods of work operation should fully involve those at the most relevant level in the organisation in their design, and that the *aim* of the redesign should be mutual advantage. It is on such a basis, building on and extending the Toyota production paradigm that one can gain both economic flexibility-by-consent and social efficiency-by-consent in the sense of enabling employees to reconcile personal needs with work needs.

Conclusion: Re-Launching the Lisbon Agenda



Trades unions have to act at a national and international level. They must do so on a delegate basis. But plant level bargaining through a process such as innovation-by-agreement is well suited to more direct democracy. It also can work in general public administration and services rather than only in footloose manufacturing. Continuous improvement negotiated through innovation-by-agreement therefore need not be limited to the production sphere or private services. It can include:

1. the right of workers and managers in both the private and public sectors to expect negotiation to range beyond wages and working conditions and to include the relation between their work and non-work lives as well as retraining, job redesign, skills path planning and career planning.
2. the degree to which personalisation of service and 'continuous improvement' in education, health, public administration and other public services can directly benefit the public, enhance social efficiency and improve the quality of life.

This is a broad agenda, but one that offers a paradigmatic alternative to the presumption of most governments that the only way to increase efficiency in the social sphere or public administration is to cut costs by cutting employment and extending working hours, either within a week, or year, or within a working lifetime, as now being proposed in Portugal by the government for hospital administration. Alternative paradigms for such organisation, modelled on post Fordist and post Taylorist principles (Oliveira & Holland, 2006) indicate that unit costs can be reduced and the quality of patient service improved by redeploying the tacit knowledge and implicit skills of health workers, with job enhancement through re-design, rather than postponing retirement, or reducing employment.

We therefore suggest that innovation-by-agreement, as intended by the Lisbon Agenda, can offer new efficiency paradigms both for both an economy and for society. It can achieve positive sum internal economies



in terms of new methods of work operation based on consent because the process reinforces individual rights. But it also offers positive externalities for society as a whole. This obtains for health, but also for education. This in the main, especially at secondary and tertiary levels, still is Fordist mass production of learning. It now is less 'educare' of the kind which Rousseau advocated in *Émile* (Rousseau, 1960), in the sense of the leading out of a self-directed individual into society with widened experience and understanding, than 'inducare' or induction into narrower areas of Taylorist specialisation (Oliveira & Holland, 1998; Atkinson and Claxton, 2000; Mintzberg, 2004).

Such a contrast between 'education' and 'induction' also is a central issue for the lifelong learning of the Lisbon Agenda inasmuch as many of the skills which people need to extend by customised training are implicit in their learning-from-work or learning-from-life, rather than formally or professionally acquired. As confirmed in our four country case study for the European Commission (Oliveira, 2003), lifelong learning (or LLL), needs to distinguish and integrate non-formal learning-from-work (LfW), and informal learning-from-life (LfL). Especially, skills profiling as the basis for skill path planning can and should personalise or customise retraining for individual workers or groups of workers with already given skills. This can enhance and extend what they already can do well at work and in life, rather than being formally trained to do things they have never done, nor are sure they can do well. This methodology, based on recognising tacit knowledge, latent abilities and implicit skills directly informed the Lisbon Agenda case that the Commission and member states should 'encourage agreements between the social partners on innovation and lifelong learning by exploiting the complementarity between lifelong learning and adaptability through flexible management of working time and job rotation' (European Council, 2000).

Therefore the Lisbon Agenda indeed was ambitious, but in under-recognised and still feasible ways. Its case for 'agreements between the social partners on innovation' were designed to enhance not only competitiveness but also service to the public,

whether in health, education, public administration or local services. In Weber's (1947) sense of articulated hierarchy and division of labour, many public sector services have become bureaucratic not because they have no profit motive, but because employees who best know how they could be remedied or made more responsive to the public have no voice through social dialogue to propose innovation in methods of work operation on the basis of mutual advantage. In these regards, innovation-by-agreement arguably represents both a project for economic efficiency in the competitive sphere, and a wider project for society itself. It is precisely in such regards that the ambition of the Lisbon Agenda to re-launch the European Social Agenda both makes sense, and could be activated.

Bibliography

- Ambrosini, V.; Bowman, C. (2001) Tacit Knowledge: Some Suggestions for Operationalisation, *Journal of Management Studies*, 38, 8, 811-830.
- Argyris, C. (1993) *Knowledge for Action*, San Francisco: Jossey-Bass.
- Argyris, C.; Schön, D. A. (1974) *Theory in Practice*, San Francisco, Jossey-Bass.
- Argyris, C.; Schön, D. A. (1996) *Organisational Learning II*, Addison-Wesley.
- Atkinson, T.; Claxton, G. (ed.) (2000) *The Intuitive Practitioner*, Buckingham – Philadelphia, Open University Press.
- Baumard, P. (1999) *Tacit Knowledge in Organisations*, London, Sage.
- Becker, G.S. (1964) *Human Capital*, Chicago, University of Chicago Press, 2nd edition, 1975, 3rd edition, 1993.
- Berger, Suzanne (2006) *How We Compete: What Companies Around the World Are Doing To Make It in Today's Global Economy*, New York, Currency Doubleday.
- Berggren, C. (1989) New production concepts in final assembly, in Wood, S. (1989) *The Transformation of Work*, London, Unwin Hyman.
- Colenso, M. (2000) *Kaizen Strategies for Organisational Change: Evolution and*



- Revolution in the Organisation*, London, Financial Times-Prentice Hall.
- Esping-Andersen, Gosta; Marino, Regini (2000) *Why Deregulate Labour Markets?* Oxford, OUP.
- European Council (2000) Presidency Conclusions (Lisbon Agenda) Lisbon, June.
- Edvinsson, L. (1997) *Intellectual Capital: the Proven Way to Establish Your Company's Real Values by Measuring its Hidden Brainpower*, New York, Harper Business.
- Edvinsson, L. (2000) Some perspectives on intangible and intellectual capital 2000, *Journal of Intellectual Capital*, 11, 1, 12-16.
- FEUC Autoeuropa, (2004) Can Portugal Compete? Seminar Series with Autoeuropa Managers, Faculty of Economics, University of Coimbra.
- Fincham, R.; Rhodes, P. (2005) *Principles of Organizational Behaviour*, Oxford, Oxford University Press.
- Garrahan, P.; Stewart, P. (1992) *The Nissan Enigma. Flexibility at Work in a Local Economy*, London, Mansell Publishing Ltd.
- Gomory, Ralph E.; Baumol, William J. (2004) *Global Trade and Conflicting National Interests*, Cambridge Mass, MIT Press
- Guest, D.E. (2003) Human Resource Management and Organizational Performance: Are Employees The Missing Link? *Management and People Seminar*, Faculty of Economics, University of Coimbra.
- Guest, D.E. (2004) The Psychology of the Employment Relationship, *Applied Psychology*, 53, 4, 541-555.
- Heller, F. (2003) Participation and Power: A Critical Assessment, *Applied Psychology*, January, 144-163.
- Hirschman, Albert (1970) *Exit, Voice and Loyalty*, Cambridge Mass, Harvard University Press.
- Holland, Stuart (1993) *The European Imperative: Economic and Social Cohesion in the 1990's*, Preface Jacques Delors, Nottingham, Spokesman Books.
- Holland, Stuart (2000) Innovation-by-Agreement, Preparatory Paper for the Portuguese Presidency of the European Council, Lisbon, February.
- House of Commons (1973) *Regional Development Incentives*, Report and Minutes of Evidence to the Expenditure Committee, London, HMSO, June.
- Koike, K.; Inoki, T. (1990) *Skill Formation in Japan and South-East Asia*, Toyko, University of Tokyo Press.
- Lacey, R. (1987) *Ford: The Men and the Machine*, London, Heinemann and Pan Books.
- Lindbeck, A.; Snower, D. J. (1988) *The Insider-Outsider Theory of Employment and Unemployment*, Cambridge Mass, MIT Press.
- Milne, R. (2005) Job cuts provoke clash on DaimlerChrysler board, *The Financial Times*, December 19th.
- Mackintosh, J. (2006a) Toyota gets serious about Europe, *The Financial Times*, February 17th.
- Mackintosh, J. (2006b) Jobs driven away: why the rubber is hitting the road for western carmakers, *The Financial Times*, February 17th.
- Milne, R.; Mackintosh, J. (2006) VW targets 20,000 job cuts, *The Financial Times*, February 12th.
- Mintzberg, H. (2004) *Managers Not MBAs*, London, Financial Times, Prentice Hall.
- Monin, N., Barry, D.; Monin, D.J. (2003) Toggling with Taylor: A Different Approach to Reading a Management Text, *Journal of Management Studies*, 40, 2, 377-402.
- Münchau, Wolfgang; Atkins, Ralph (2004) Working longer to save jobs: but will it help Europe close the productivity gap? *The Financial Times*, July 23rd.
- Nonaka, I. (1994) The Knowledge-Creating Company, *Harvard Business Review*, 69, 6, 96-104.
- Nonaka, I. (1998) *The Knowledge Creating Company*, *Harvard Business Review on Knowledge Management*, Boston MA, Harvard Business School Press, 21-46.
- Ohlin, B. (1933) *Interregional and International Trade*, Cambridge MA, Harvard University Press.



- Okimoto, D. I. (1989) *Between MITI and the Market: Japanese Industrial Policy for High Technology*, California, Stanford University Press
- Oliveira, T.C.T. (1998): Education and Employability: Fordist and Post-Fordist Paradigms, in Congresso IV Congresso da Sociedade Portuguesa Ciências da Educação, February 1998, Aveiro.
- Oliveira, T.C.T. (2000) Implicit Logic in Unstructured Interviewing, *Selection & Development Review*, BPS, London, 16, 2, 10-14.
- Oliveira, T.C.T. (2001) Power in Panel Interviewing, *Selection & Development Review*, BPS, London 17, 3, 7-10.
- Oliveira, T.C.T. (2002a) Regras tácitas e normas implícitas em entrevistas de seleção, *Psicologica*, 30, 285-299.
- Oliveira, T.C.T. (2002b) Procedural Justice in Selection, *Selection & Development Review*, BPS, London 18, 2, 3-7.
- Oliveira, T.C.T. (2003) *An Architecture and Methodology for a European Certificate of Informal Learning*, Report to the Directorate General of the Commission of the European Union.
- Oliveira, T.C.T. (2005) Is Intuition in Interviewing Unscientific? *Selection & Development Review*, BPS, London 21, 3, 3-7.
- Oliveira, T.C.T.; Holland S, (1998) Globalisation, Education and Culture, in *Actas do II Congresso Internacional da AIPELF, Educação e Política*, Setembro 1998, Lisboa.
- Oliveira, T.C.T.; Holland, S. (2007) Alternative Paradigms of Hospital Work Organisation and Health Provision, *Revista Portuguesa de Saúde Pública* (forthcoming).
- Parker, M.; Slaughter, J. (1988) *Choosing Sides: Unions and the Team Concept*, Boston Labour Notes.
- Pascale, R. (1990) *Managing on the Edge*, New York, Viking.
- Pilling, David (2004) Canon sticks to jobs-for-life, *The Financial Times*, November 10th.
- Pilling, David (2006) Cash in the kaisha: how an overhaul is producing a resurgent corporate Japan, *The Financial Times*, March 23rd.
- Polanyi, M. (1958) *Personal Knowledge*, Chicago, University of Chicago Press.
- Polanyi, M. (1962) Tacit Knowing: Its Bearing in Some Problems of Philosophy, *Review of Modern Physics*, 34, 4, 601-616.
- Porter, M. E. (1980) *On Competition*, Cambridge MA, Harvard Business School Press.
- Reber, A.S. (1976) Implicit learning of synthetic languages: the role of instructional sets, *Journal of Experimental Psychology: Human Learning and Memory*, 2, 88-94.
- Reber, A.S. (1989) Implicit learning and tacit knowledge, *Journal of Experimental Psychology*, 118, 219-35.
- Riesman, D. (1954) *Individualism Reconsidered*, New York, The Free Press.
- Rousseau, J-J. (1960) *Émile ou de l'Éducation*, Paris, Garnier.
- Rühmann, Peter (2004) The German labour markets – the case for more flexibility, *Notas Económicas*, 20, December, 135-144.
- Samuelson, Paul (2004) Economists May be Wrong about Good Balancing Bad in Outsourcing, *The New York Times*, 9th September.
- Schein, E. (1994) On Dialogue, Culture and Organizational Learning, *Organizational Dynamics*, 22, 40-51.
- Schneider, B. (1987) The People Make the Place, *Personnel Psychology*, 40, 437-453.
- Schumpeter, Joseph (1949) *The Theory of Economic Development*, Cambridge MA, Harvard University Press.
- Sinn, Hans-Werner (2003) The Laggard of Europe, *CESifo Forum*, 4, Special Issue 1.
- Soukiazis, Elias; Castro, Vitor (2005) How the Maastricht criteria and the Stability and Growth Pact affected real convergence in the European Union: a panel data analysis, *Journal of Policy Modelling*, 27, 385-399.
- Styhre, A. (2001) Kaizen, Ethics and the Care of Operations: Management and Empowerment, *Journal of Management Studies*, 38, 8, 795-810.

Sutton, John (2004) *The Auto-component Supply Chain in China and India: A Benchmarking Study*, Brussels, The World Bank Annual Bank Conference on Development Economics, May 10th-11th.

Taylor, F. W. (1911) *The Principles of Scientific Management*, New York, Harper and Row.

The Economist (2004a) America's Car Industry: Extinction of the Giants, London, June 14th-20th.

The Economist, (2004b) Driving Change: A Survey of the Car Industry, September 4th.

The Economist (2005) The Car Company Up Front: Special Report Toyota, 29th January.

Thompson, P., Warhurst, C.; Callaghan, G. (2001) Ignorant theory and knowledgeable workers: interrogating the connection between knowledge, skills and services, *Journal of Management Studies*, 38, 9, 923-942.

Weber, M. (1947) *The Theory of Social and Economic Organisation* (Part 1 of *Wirtschaft und Gemeinschaft*) Ed. Talcott Parsons, London, William Hodge.

Wilkinson, B.; Gamble, J.; Humphrey, J.; Morris, J.; Anthony, D. (2001) The iron fist in the velvet glove: management and organisation in Japanese manufacturing transplants in Wales, *Journal of Management Studies*, 38, 5, 675-695.

Womack, J.P.; Jones, D.T.; Roos, D. (1990) *The Machine That Changed The World*, New York, Harper Collins.

Womack, J.P.; Jones, D.T. (2005) *Lean Solutions: How Companies and Customers Can Create Wealth Together*, New York, Harper Collins.

Wood, S. (ed.) (1989) *The Transformation of Work*, London, Unwin Hyman.

