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THE TRANSFER OF JAPANESE MANAGEMENT TO ALIEN INSTITUTIONAL ENVIRONMENTS

Guest Editors

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THE TRANSFER OF JAPANESE MANAGEMENT STYLES IN TWO US TRANSPLANT INDUSTRIES: AUTOS AND ELECTRONICS

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ABSTRACT

Japanese industry is characterized by a unique set of industrial relations and management styles. The ability to transfer these relations overseas has been the object of much scholarly and popular debate. This paper examines this transfer to the United States in the automobile and electronics industries.

It was found that Japanese automobile manufacturers had been able to transfer most of the central features of the system with some adaptation. The most successful firms were using teams, quality control activities, rotation and quite egalitarian management styles. On the other hand, most of the electronics transplants examined had not transferred Japanese style industrial relations. The electronics firms seemed to be content to accept many of the prevailing US practices.

It is concluded that the transfer of Japanese style relations is possible, but that this occurs only where Japanese managers make a considered and sustained effort to implant their system. In many electronics operations it appears as though Japanese managers never seriously attempted to implement the Japanese system. Thus, the record of transfer is mixed at the moment.

INTRODUCTION

In the last two decades Japanese firms have changed from being almost entirely domestic manufacturers to becoming true multinational producers. This overseas expansion has been simultaneous with the increasing recognition that Japanese firms are the world's most efficient producers in a number of important industries. Initially, Japanese success was confined to textiles and ship-building. By the end of the 1970s success spread to mid-level technology industries such as automobiles and steel. In the 1980s Japanese firms achieved success in even the highest technology industries such as supercomputers, semiconductors and fibre optics.

This paper will review the evidence regarding the transfer of Japanese labour–

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Japanese-owned and American-owned financial institutions operating in the United States. However, more recent research on manufacturing firms has come to different conclusions. Kagono et al. (1985) found significant differences between Japanese firms in the USA and their American-owned counterparts. Case studies of the NUMMI plant in Fremont, California provide evidence of successful transfer of Japanese organization and management (Brown and Reich, 1989; Gronning, 1992; Krafcik, 1986). A broader study of a small sample of Japanese transplants concluded that automotive plants have been most successful in transferring Japanese practices, while consumer electronics facilities have tended to adapt or conform to the US environment, with semiconductor fabrication facilities occupying a middle position (University of Tokyo, 1990).

This paper examines the transfer of Japanese-style management in autos and electronics. The automobile industry is important because it was the quintessential Fordist industry and is the industry that has made the largest investments in US production. There has been a concerted effort by Japanese automobile firms to transfer their production system to the USA. The auto transplants are then compared with the electronics transplants. In the conclusion the implications of these findings for the study of Japanese transplants are discussed.

WORK AND PRODUCTION ORGANIZATION IN THE AUTO TRANSPLANTS

There are now nine Japanese or Japanese–US joint venture auto assembly plants in the USA. Total investment in these plants is currently in excess of $8 billion. With the exception of NUMMI, these plants are located in the Midwest and Upper South and each have approximately 30,000 employees. All of these plants have attempted to introduce Japanese-style production and management systems (Florida and Kenney, 1991).

The most fundamental building block of Japanese production is the team. Each automotive transplant has organized its production activities on the basis of teams. At Honda, Toyota and NUMMI teams meet daily to discuss production improvements and redesign of tasks. At NUMMI each team has its own team room adjacent to the production line where workers meet (personal interview, 1990). At the other transplants team meetings are less frequent but take place at least once a week (personal interviews, 1988, 1990).

Team leaders are a key job category at all the assembly transplants. Team leaders are members of shop-floor work groups but also have managerial responsibility for immediate production activities. There are no foremen or lower-level managers with the job of supervising shop-floor workers. At Honda, Toyota, NUMMI, Nissan and SIA team leaders are the first line of supervision and play crucial roles in organization, design and allocation of work on a daily basis. The actual selection mechanism for team leaders varies. At some transplants, team leaders are selected by management, while at others, especially the unionized transplants, team leaders are selected by joint labour–management committees. Still, all transplants claim that the input of workers is an important criterion for the selection of team leaders.

The transplants encourage worker self-initiative through the delegation of

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SIA had not yet implemented QC activities, though it planned to do so in the future (personal interview, 1990).

A crucial feature of Japanese manufacturing success has been *kaizen* (continuous improvement) activities. Honda executives felt they had completely replicated Japanese practice in their Marysville plant (personal interview, 1990). A Toyota manager, who worked in numerous Toyota plants in Japan as well as NUMMI, said the Georgetown plant was at 60 per cent of Japanese practice and NUMMI at 40 to 50 per cent (personal interview, 1990). Mazda and Nissan had more difficulty implementing *kaizen* activity, and were roughly 50 per cent of Japanese practice. SIA, the most recent transplant, estimated that the plant was at about 30 per cent of Japanese practice (personal interview, 1990). The progress of the transplants on this dimension is remarkable, given that they have had to stabilize the production process sufficiently to implement these activities and to train American workers.

UNIONS AND INDUSTRIAL RELATIONS

There are four non-unionized transplants – Honda, Toyota, Nissan and SIA – and they have chosen rural greenfield sites at least in part to avoid unionization. Nissan went to great lengths to defeat a unionization drive by conducting a vigorous anti-union campaign. Non-unionized transplants, notably Nissan and Toyota, use employee handbooks which provide plant-level rules and regulations and have formed employee associations. They have also created institutional channels through which work-related grievances can be addressed.

The unionized transplants have forged comprehensive restructuring agreements with their respective union locals which have helped ease the use of Japanese production organization. The United Autoworkers union (UAW) was unopposed at Mazda, NUMMI, and Diamond-Star and each company reached an independent agreement with its union local. In these agreements, the UAW agreed to implement smaller numbers of job classifications, implement more flexible work rules, and utilize pay systems that differ from the typical US assembly plant in return for the transplant agreeing to be unionized and a commitment to employment security.

The unionized transplants have contracts which stipulate tenure security, guaranteeing jobs, except under conditions which jeopardize the financial viability of the company. Thus far, both NUMMI and Mazda have fulfilled their commitment to no lay-offs. The non-unionized transplants provide informal assurance of tenure security. According to one transplant executive: 'We really don't provide any guarantee of employment security, we just make the statement that it's not our intention to lay off.' During production slumps, Nissan and Toyota have also redeployed workers to other jobs. Thus far, even in the severe 1991–92 recession, none of the auto assembly transplants has resorted to lay-offs of full-time, regular employees.

Absence is a serious issue in Japanese-operated plants because there are no replacement workers – the team must cover for the absent worker. For example, at NUMMI workers are allowed three absences over a 90-day period before being counselled or disciplined; four absences in a year can result in termination

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NUMMI workers have complained that GM managers are a major obstacle to implementation of the Japanese system. According to a NUMMI worker:

> 'A lot of things have changed. But see, you hear people talk. You hear them saying once in a while: "Oh, we're going back to the GM ways." I hope not. That was rough. I think to completely bring back the Japanese way, Japan would have to take over the plant completely and have nothing to do with General Motors at all.' (Personal interview, 1990)

Another NUMMI worker added: 'I think middle management is fighting it [the Japanese system] because it takes too much power away from them' (personal interview, 1990).

In recognition of this problem, Japanese managers have begun promoting shop-floor workers to lower-level supervisory positions and grooming some of them for top-level positions (personal interview, 1990). In nearly every plant studied Japanese managers have voiced concern about the manner by which US managers operate. A Japanese executive at one of the transplants told us that his greatest problem was teaching US managers the company's way (personal interview, 1988). The investments by the Japanese auto assemblers has been accompanied by a considered and persistent effort to transfer many of the central features of the Japanese system. This success is remarkable considering the very different culture, labour history and social environment of Japan.

THE ELECTRONICS TRANSPLANTS: ADAPTING TO THE USA

In Japan the same production organization and labour–management relations operate in electronics corporations as in the automobile corporations. In Japan, electronics firms organize work on the basis of teams, do not use US-style job classification systems, and rotate workers between and among jobs. There have been few studies of Japanese electronics corporations in the USA. A University of Tokyo (1990) study reported that Japanese electronics transplants have extensive job classifications, do not use teams very extensively, and do not practise rotation. Our interviews suggest that the use of teams and rotation is mixed and that it varies both within and between plants. In some measure this can be explained by the nature of the electronics manufacturing, its international division of labour and the nature of markets for specific products. Electronics production varies from highly standardized assembly activities and fully automated semiconductor fabrication to more craftlike large computer assembly. In the transplants most jobs are labour-intensive assembly. For example, in Japanese transplants it is common to find groups of up to 30 workers doing identical tasks such as soldering or component insertion. In the consumer electronics segment especially, it appears that many of the production processes transferred to the USA are similar to those undertaken in South-East Asia.

However, at other transplants teams are discharging more complicated tasks and capital-intensive processes which are organized on the basis of a more complex division of labour. For example, at Sony's San Diego plant, production is organized into teams and rotation is used to limit workers' duty at difficult

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permanent status. There are two reasons for this: first, workers can be thoroughly evaluated before the company makes any commitment to them; second, the temporary workers can be used to buffer market fluctuations.

Absenteeism policies in the electronics transplants are similar to those in the auto transplants. All the transplants have strict policies with regard to absenteeism. According to one manager in a recent report:

> We consider failure to report to work on time and absenteeism a serious matter. Whenever somebody comes to work late, we give a warning. When this happens four times a year we ask the person to take a day off and consider if he can improve himself. If he doesn't improve himself after that, we fire him. (JETRO, 1990)

Generally, the electronics transplants do not provide formal or informal guarantees of tenure security. Four of the six firms examined by the University of Tokyo (1990) had laid off employees. While Japanese managers said they thought long-term employment is desirable, they would lay off employees in response to crises and reorganizations. Still, they seem more reticent to do so than managers of US firms. None the less, there are some firms such as Sony's San Diego operations which were established in 1972 and have never had a lay-off. To retain workers during downturns Sony reassigns them to maintenance or training.

Another Japanese executive with a major electronics firm said that 'there is no [employment] guarantee, though we would like to keep [workers] because we have invested in them' (personal interview, 1991). The president of the same firm stated that lay-offs were dangerous because the plant would lose employees that had learned the production process. And yet, this firm was in the process of reorganization and redundant employees were being laid off. Every Japanese manager we interviewed claimed to be committed to doing everything possible to limit lay-offs of full-time employees in periods of economic downturns. This was true even in the highly cyclical semiconductor industry. But in practice many of the electronics transplants have used lay-offs.

TURNOVER: A CRUCIAL DILEMMA

A central problem faced by the electronics transplants is turnover. In Japan, turnover is low; both management and shop-floor employees stay with one company for their corporate career. In the US the electronics transplants have experienced turnover rates that are greater than in Japan. This turnover complicates efforts to develop conformance to Japanese-style norms, behaviours and management techniques. The University of Tokyo study found that turnover rates per annum for Japanese electronics firms in the USA in 1984 ranged from 10 to 50 per cent depending upon the company, sector, and region. This was comparable with our findings in 1990–91.

Japanese firms located in and around Silicon Valley experience the same high turnover as do the US firms in the area (Florida and Kenney, 1990). In the quest for a more stable labour environment Japanese firms are locating new plants in

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process have created a management-style far closer to the American-style environment in which power is concentrated in the hands of management. In the electronics transplants, factory-level operators (they are not called associates as in the automobile transplants) are expected to report only to their supervisors, who in turn transmit information up the hierarchy. Again, this differs from both Japan and the automotive transplants where shop-floor workers are encouraged to report to other managers in addition to their immediate supervisor.

One electronics transplant has tried to bridge the labour/management divide. At this plant factory-level operators are encouraged to communicate with engineers and work with them to solve problems. According to the president of this plant, operators are told that the 'engineer is not your supervisor he is your helper. If we tell [the operator] the engineer is your supervisor then he will bring any problem to him' (personal interview, 1991). The objective was to place more responsibility on the worker to handle routine problems and take the initiative.

The open-style office characteristic of firms in Japan and many of the automobile transplants was far less prevalent in the electronics transplants. High-level executives have individual offices, while middle-level managers have high partitions on a common floor. One exception was a semiconductor facility where the newly appointed Japanese plant manager, over the vehement objections of the US staff, had lowered all the partitions to waist-level (personal interview, 1991). The other exception was a firm that had a seemingly schizophrenic attitude regarding office layout: high partitions and private offices were prevalent in the administrative section and an open layout in accounting and production. The interviewees explained that the administrative area was controlled by US managers, whereas Japanese managers controlled production and accounting (personal interview, 1991).

In most of the electronics transplants, the outward trappings of equality so prevalent in the automobile transplants were not being used. With regard to employee parking, the evidence was more mixed. Two headquarters facilities studied were in Silicon Valley and they both had reserved parking. A computer/communication firm initially provided reserved parking for all of its employees, but when faced with a shortage of parking spaces due to expansion instituted a system based upon seniority. The other facilities had a few reserved spaces for top-level managers.

The University of Tokyo (1990) group identified only one firm which required employees to wear a uniform. None of the plants we visited used company-wide uniforms for workers and managers. With the exception of one plant, all employees wore street clothes instead of uniforms. At one plant a Japanese executive said the absence of uniforms was a historical decision in which he neither participated nor agreed with. The implication was that US managers had made the decision and the Japanese were reluctant to change it (personal interview, 1991). Another computer plant intended to mandate that employees wear anti-static uniform jackets to help protect the product from static electricity. The Japanese executive vice president of manufacturing seemed pleased about this, though he was careful to point out that this was done for 'rational' rather than 'spiritual' purposes (personal interview, 1990). Curiously, in several plants Japanese shop-floor managers wore uniforms, while American managers did not.

There seems to be a fundamental division of opinion between Japanese and

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been at the beginning. Fifth, in many cases the Japanese firms took over existing plants with their engrained relationships. In these cases it has been much more difficult to restructure the existing relations.

Finally, and foremost, there is ample evidence that where Japanese firms have undertaken a concentrated and sustained effort they have been successful in transferring their labour–management system to the USA. In the electronics industry many Japanese firms did not even attempt to transfer the Japanese system. The reasons for not attempting to use Japanese-style management include: (1) the production activities that were to be undertaken required little training; (2) some of the electronics companies do not have very strong production engineering and management even in Japan, so they simply adopted US styles; and (3) US labour and managers resisted Japanese-style management and the Japanese did not consider it worthwhile to overcome the resistance.

In conclusion, in many cases the Japanese management systems have been transferred to and are operating in the USA successfully. However, this occurred only in cases in which there was a significant investment of managerial talent by the parent firm. Japanese management will work in the USA, but it is by no means natural. It requires active effort to resist the prevailing environment and successfully complete the transfer process.

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