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# From "Fordism" to "Toyotism"? The Social Organization of the Labor Process in the Japanese Automobile Industry

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AND THOMAS MALSCH

DEBATE about the world market has been dominated for a number of years by a new topic: the Japanese challenge. Servan-Schreiber's warning about the American challenge has been forgotten. Japan exports a smaller proportion of its gross national product than the Federal Republic of Germany, but the concentration of its exports in relatively few areas of production and the dynamic growth of Japanese export flows have caused alarm everywhere. The Japan debate received its greatest impulse from the expansion of the Japanese automobile industry—a central sector in the economic system of all Western countries. Japan doubled its automobile production in the 1970s and by 1980 had become the leading automobile producer, producing 11 million vehicles in that year, in contrast to 8 million in the United States. The U.S. share of world automobile production declined from 57 percent at the end of the 1950s to 20 percent in 1980. In 1980, Japanese domestic production accounted for about 28 percent of the world market,<sup>1</sup> and Japanese firms held 25 percent of the U.S. market. Japanese producers dominate the Southeast Asian market and their relatively inexpensive autos have made big inroads into the market of developing countries. Japanese producers also made considerable gains in Europe—especially in countries that, unlike Italy, France, and Great Britain, still have open auto markets. In 1980, Japanese producers held about 25 percent of the Benelux (Belgium–Netherlands–Luxembourg) market and 33 percent of the Scandinavian market. By contrast, their market share in the Federal Republic has remained stagnant for a number of years at

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This paper was written as part of our research project on the restructuring of the labor process in the world automobile industry. Lead author is Knuth Dohse. The translation from German is by Hugh Mosley.

around 10 percent, though the growth potential for exports was also reduced. This situation may be expected to intensify when the financially strong Japanese firms divert production to Europe that import restrictions now exclude from the United States.

On the whole, competitive conditions in the world automobile industry have changed fundamentally in recent years, and Japan has been visited by a broad stream of automobile experts seeking to discover the "secret" of their success—a phenomenon comparable to the role of the United States in the first decades of this century.

When American social scientists and automobile managers—motivated by the massive Japanese inroads in the U.S. domestic market—analyzed Japanese automobile production, they all came basically to the same conclusion: the cost advantages of the Japanese were not primarily a result of superior technology. The Japanese had frequently bought or copied Western technology that was also available to other automobile firms on the world market. Their superiority in terms of cost savings was rather a result of their special management system. A vice-president of an American automobile firm who had studied five Japanese automobile plants came to the following typical conclusions:

Their accomplishments are the result of a totally dedicated work force (top to bottom) rather than any unique skills, automation, manufacturing techniques or innovative processes. . . . Although they are highly automated in their machining, engine assembly, body shop and frame manufacturing operations, etc., their robots, shuttles, conveyors, transfer machines, etc. are still either American-made or are produced by Japanese firms under U.S. manufacturers license. The N/C tape controlled equipment, their side frame systems, body trucks, methods of gaging, etc., are practically 'photo copies' of our systems—but they are beating us at our own game. . . . Neither their actual productive effort, assembly line rates, or metal fabrication line output is any greater than ours; they have merely eliminated the excess manpower, start-up and changeover losses, and the debilitating effect of excessive repair, inspection, rework and absenteeism.<sup>2</sup>

William Abernathy, James Harbour, and Jay Henn summarized their similar conclusions in the thesis that "the problem is a people problem rather than an investment problem." For this reason, they warn against reacting with a merely technology-oriented strategy: "In fact, the Japanese are of the opinion that management is the key to productivity, and that until Detroit changes its management system, increased capital investment on the part of the American firms does not bother them."<sup>3</sup>

The Japanese producers would be easily capable of holding their own in a technology-oriented competition.<sup>4</sup> Their earnings have been high in recent years, while the rest of the world automobile industry

was experiencing losses. Many Western automobile firms must carry a large debt burden for many years, which limits their room for maneuver in making new investments.<sup>5</sup>

Many analysts of the Japanese model of automobile production and the resulting cost advantages conclude that the time is ripe for a new organizational paradigm in the Western automobile industry.<sup>6</sup> In this view, the organizational patterns that were adequate for mass production of large automobiles in a period in which U.S. companies were unchallenged in their domestic market no longer suffices in the current phase of intensified international competition in which there is a shift in the market toward middle-size automobiles and more consumer emphasis on product quality. The Japanese style of management is regarded as an alternative organizational paradigm. No exact imitation of the Japanese model is proposed but rather the adoption of its major components.

At the present time, Western automobile firms are indeed undertaking considerable changes in the organization of production.<sup>7</sup> These changes have been more or less related to the Japanese model. Quality circles or similar institutions—the symbol of the Japanese alternative—have been established in the automobile industry throughout the world. In the United Kingdom, Ford has undertaken an entire spectrum of measures—called the “After Japan” program—in clear reference to the competition from the Far East. In the United States, Ford and General Motors have each selected three plants in which to experiment with the Japanese system of life-long employment.

These developments suggest a whole series of questions for detailed examination. To what extent is the Japanese organization of production really an alternative organizational paradigm? What are its principal characteristics, and how are they interrelated? Is the Japanese alternative the result of more sophisticated management of the universal production functions (production control, personnel allocation, and so on) that can be adopted irrespective of the cultural and social context, or is the Japanese management system dependent on a special social context and therefore not transferable to other countries merely by learning management techniques?

In the following, we shall demonstrate that the Japanese organizational model is *not* primarily a more sophisticated and hence transferable management system. Rather, it is rooted in a system of labor relations that for a number of reasons is unacceptable for trade unions in Europe and the United States. Further, Fordism and “Toyotism” are not simply alternative paradigms for the organization of production, for the organization of production and the system of labor relations in

the two systems are related to one another in significantly different ways.

#### FOCAL POINTS OF INTEREST IN THE JAPANESE MODEL

The new interest in work organization in Japan is not the result of a search for a more humane alternative to Fordism but of the superiority of the Japanese automobile industry in world market competition. That the special Japanese organization of the labor process can also yield benefits for workers is only a secondary aspect, albeit one that can make the required changes more acceptable outside of Japan. This aspect is considered in detail below.

The Japanese automobile industry is discussed because it is able to produce high quality automobiles at a much lower cost than its Western competition—even taking into account lower wages and benefits<sup>8</sup>—although the cost comparisons made by the automobile companies and outside researchers must be interpreted cautiously due to methodological shortcomings.<sup>9</sup> Still, even controlling for the technological differences and such factors as the difference in vertical integration, the Japanese automobile industry is undoubtedly capable of mass producing qualitatively good automobiles with considerably less labor. Two causal constellations are usually cited to explain the greater productivity of the Japanese automobile industry: the relationship to suppliers and the organization of the labor process.

The relationship to suppliers yields productivity advantages in two respects: first, the economic relationship between large plants for sub-assembly and final assembly and their smaller suppliers; second, the organization of the supply process itself.

The Japanese economic structure is characterized by a highly developed dualism. Large firms pay relatively high wages and provide employment security as well as social benefits, while the small firms pay only low wages with little or no social benefits and little employment security. Some degree of dualism can be found in all Western countries, but it is much more pronounced in Japan. Wolfgang Lecher and Johann Welsch show that, at the end of the 1960s, small firms (ten to one hundred employees) paid 33 percent to 44 percent lower wages than large firms (over a thousand employees), while the difference was about 25 percent in the United States and only about 13 percent in the Federal Republic.<sup>10</sup> This differential did not change greatly during the 1970s.<sup>11</sup> The Japanese automobile firms derive productivity advantages from this dualism insofar as they order parts and components from the economically dependent suppliers rather than producing them themselves. Parts production has been delegated to small and

middle-size firms to a much greater extent than in the European or U.S. automobile industry and is thus diverted from the large main plants. At the same time Japanese automobile firms still retain a highly integrated production structure because the smaller firms are economically and legally dependent and in many cases can be regarded as divisions of the larger firms.<sup>12</sup> The large corporations have thus internalized dualistic structures. This was possible only because of the fragmentation of the plant-level unions, which were unable to match the economic integration of the large firms with uniform collective bargaining, and the homogenization of wages and working conditions. In the U.S., by contrast, a highly integrated firm like General Motors is usually confronted with the unified demands of the union in its smaller plants as well.

Western automobile firms can only enjoy such cost advantages when they themselves are active in segmented economies or create similar structures by diverting production to low-wage countries. In the latter case, however, they sacrifice the cost advantages that Japanese firms derive from the organization of the supply process: frequent deliveries, directly at the place of use (the assembly plant) and "just-in-time." In this way the Japanese automobile producers avoid the investment of capital in large inventories and storage facilities and reduce the personnel costs of transportation within the plant. Other producers outside Japan can also achieve such savings insofar as they are able to spatially concentrate production and eliminate unexpected disturbances in deliveries. This is difficult to achieve not only because of production in large areas (for example, the United States) and conflict-ridden labor relations in the supplier system but also because of the disadvantages of diminished economies of scale in decentralized supplier structures—which in Japan is offset by lower wages in small firms.

The relationship to suppliers is not considered in this paper. Nevertheless, this aspect of the Japanese model illustrates, too, the extent to which it is dependent on the larger social system. This is even more true of the second explanatory factor, the organization of the labor process.

Comparative studies of the productivity advantages that derive from the organization of the labor process cite the following factors: greater utilization of working time, flexibility in labor deployment, alternatives in the division of labor, work effort, and innovative potential of the employees.

#### Greater Utilization of Working Time

This factor refers to the extent to which paid working time actually represents time worked. According to estimates by Abernathy, Harbour, and Henn for the year 1979, Japanese workers perform 1966 hours of

work per year, while American workers work between 1700 and 1800 hours and European workers in some countries up to 100 hours less than that.<sup>13</sup> These differences are primarily the result of less paid vacation time and lower absenteeism. Japanese workers are not only eligible for less paid leave than their American and European colleagues,<sup>14</sup> they also fail to use that which is available to them and, moreover, will even use vacation time in lieu of sick leave. For this reason the total individual rate of paid time not worked, including paid vacation, is astoundingly low—less than 5 percent. By contrast American and European workers use all the vacation to which they are entitled. Moreover, absenteeism in other countries, although it varies from country to country and according to the state of the economy, is always considerably greater than in Japan.

### Flexibility in Labor Deployment

Japanese management can flexibly allocate workers to do tasks on short notice according to changing requirements. Workers do not expect to do a single task but are ready to assume a multiplicity of tasks as needed. Outside of Japan there are a number of regulations and practices that hinder such flexible deployment.<sup>15</sup> In British and American plants rigidities arise from detailed job classifications that restrict the activities of workers. Furthermore, job demarcations strictly separate the work activities of different types of skilled workers and the skilled trades from semi-skilled and unskilled work. In the Federal Republic flexibility in labor deployment is not impeded by such regulations, but it is made difficult by complicated wage security agreements.

### Alternatives in the Division of Labor

A conspicuous difference in the Japanese organization is the low number of indirect production workers.<sup>16</sup> For example, while the automobile industry in other countries maintains an expensive organization for quality control separate from production management, Japanese workers largely carry out production, inspection and repair functions themselves. Thus Japanese companies need less quality inspector and repair personnel without an increase in the number of workers with integrated work functions.

### Work Effort

The determination of the workload is not subject to any restrictions in Japan. Rather the optimization of job performance through distribution of work tasks (balancing the line) as well as flexible transfer of

workers according to bottleneck requirements is itself the object of a process in which the employees themselves participate.<sup>17</sup> The determination of work performance outside of Japan is subject to a multiplicity of regulations such as the use of complaint procedures with accompanying strike threats in the Anglo-Saxon countries or participation by the works council in the setting of work norms or the regulation of minimum cycle times (with corresponding difficulties in balancing the line) in the Federal Republic.<sup>18</sup>

### Innovative Potential of the Employees

The quality circles are always mentioned as an example of the high innovative potential of employees. They are, however, only an example of participation by employees in the innovation process. They participate not only in measures to improve product quality but also in the optimization of production, line balancing, the efficient use of personnel and production facilities.<sup>19</sup> In other countries rationalization is traditionally the domain of management—particularly in the Anglo-Saxon countries—which is frequently unable to use the knowledge of the employees, or only such suggestions that pass through the numerous bottlenecks in the plant suggestion system.

These factors that contribute to the productivity advantages of the Japanese automobile industry have all been described in the literature. However, the systematic conditions with which these factors are linked have largely been neglected. There is no satisfactory theoretical analysis of the potential transferability of the Japanese model and of whether it represents an alternative organizational paradigm to Fordism.

### APPROACHES TO EXPLAINING THE JAPANESE MODEL OF ORGANIZING THE LABOR PROCESS

In general, two basic approaches to explaining the Japanese model can be distinguished: a cultural approach and a management approach (with two subvariants). They have quite different practical implications. The former assumes that the Japanese model is unique and can function only under the special circumstances prevailing in that country while the other assumes that it is largely transferable. Central to every explanatory approach is the issue of why the behavior of Japanese workers is so extraordinarily congruent with the interests of the firm.

#### *The Cultural Approach*

The cultural explanatory approach emphasizes the special historical-cultural features of Japanese society, most especially, the way in which the relatively late transition from feudal to industrial society occurred

and the isolated insular character of Japan. It is said that the transition to an industrial society took place quickly in comparison to the centuries-long process in Europe and without a self-conscious middle class. The result was a special mixture of large-scale industrial production and feudal values and organizational structures. According to Lecher and Welsch, to understand the social structure of Japanese plants, "consideration of the pre-capitalist relations of production is of decisive importance. . . . It is doubtful that the 100-200 years of modernity is sufficient for the widespread internalization of capitalist-liberal—much less socialist—orientations."<sup>20</sup> In this view there is still a strong and inimitable remnant of feudal values and behavioral patterns that survived the industrialization process.

The insular isolation of Japan is also cited to explain how Japanese culture could be preserved with so little external influence. It is further argued that ethnic homogeneity reinforced the cultural isolation and—in light of the scarcity of raw materials—led to the development of a pronounced feeling of common national interest but also to the development of an egalitarian consciousness.

Representatives of this cultural thesis relate a number of phenomena in the social organization of Japanese industrial plants to the peculiarities in the Japanese development pattern: most importantly, the relationship between the firm and its workers, the group orientation of the Japanese, and the strong work orientation of Japanese workers. According to this interpretation, the typical feudal structure of loyalty and fealty, on one side, and paternalistic responsibility, on the other, is especially well preserved in a new context of production in large Japanese firms. According to Lecher and Welsch—who on the whole actually present more differentiated arguments—plants and firms are in fact "successors of the predominant pre-capitalist structure of relations."<sup>21</sup> Some authors also explain the principle of life-long employment in terms of the strong feudal tradition in Japanese culture. The neo-feudal bond of the employee to the firm<sup>22</sup> is said to be related to a relationship of reciprocal loyalty that is also emotionally reinforced by Confucianism. The firms accept the principle of life-long employment in that it protects its employees against the labor market risks that are usual in other countries: they do not fire anyone or threaten with dismissal. Thereby, it is said, the prerequisites are established for a stable production of neo-feudal loyalty toward the firm. The competition for entry into the protected sector of the large firms is, to be sure, usually regarded as significant. Despite a likewise intensive competition between firms, there is internally, according to Lecher and Welsch, "relatively little emphasis on competition and individual performance."<sup>23</sup>

The group orientation of the Japanese is also frequently emphasized.<sup>24</sup> Lecher and Welsch explain it in terms of the agrarian tradition of the extended family, which serves as a model for industrial relations of production. Based on "national psychology," Kobayashi also mentions other factors such as: small territory, natural catastrophes, ancestor worship, rice agriculture, and the homogeneity of an island people.<sup>25</sup> Group orientation leads, in this view, to increased pressure on management to make decisions by consensus and at the same time to a reduction of the individual performance principle. According to Lecher and Welsch, in Japanese companies what is important is "not primarily individual performance but the group performance of the entire workforce."<sup>26</sup>

Finally, special work virtues are also said to be derived from the Japanese culture. The ethnic and cultural homogeneity of an island people with scarce raw materials has led, in this interpretation, to a strong work orientation, to particular conscientiousness, and to a pronounced awareness of the need to avoid every waste of resources.<sup>27</sup>

All these factors—via very different causal constellations (more differentiated by Lecher and Welsch with reference to the system of industrial relations)—are said to produce greater identification with the company and, therefore, higher work morale among Japanese employees.

Those who stress Japan's superior management methods largely reject this cultural thesis and its far-reaching implications. Although Japanese culture, in their view, may have eased the adoption of a specific management style, it is the special Japanese management philosophy as such that is the decisive factor. This philosophy, moreover, is not culture-bound but can be transferred to other cultural milieus.

Within this view, we can distinguish two approaches, which differ not only in the characteristics of the Japanese model that are singled out but also in the persons in industry to whom they direct their advice. One approach addresses its appeal to top management and emphasizes the human-relations and participatory aspect, while the other addresses plant management and focuses on the everyday control of production and labor-deployment. Both approaches agree on the superiority of the Japanese management style. However, they present different descriptions of the reality of Japanese management that coincide only in part. Because both approaches are more important for the current discussion than the cultural thesis, they are treated in greater detail in the remainder of this section.

*The Human-Relations Approach*

The human-relations approach emphasizes the importance of the creative involvement of the employees for the management of the labor and production process. According to this approach the classical tradition of Fordism, at least in the United States, underestimated the significance of the creativity potential of the employees for productivity.<sup>28</sup> Fordism is based on two principles, both of which inhibit creativity: one, the Taylorist philosophy of the separation of intellectual and manual work linked to the theory of the superior innovative and productive potential of an organization of the labor process by separate staff departments; and, two, the specialization of work activities in easily learned repetitious work steps. The mass production of largely standardized products on an assembly line constituted the practical basis for its realization. This organizational form was, according to the advocates of the human-relations approach, adequate for unchallenged mass production for the domestic market. However, in a new phase of enhanced competition, greater emphasis on product quality and on accelerated rate of innovation in product and process technology, it cannot be retained in the long run.

Fordism, it is argued, has accumulated considerable disadvantages over time. A number of "unproductive" practices, especially union protective rules, have developed due to the labor-management-conflict orientation inherent in this model. Furthermore, the model requires that management renounce any use of the innovative potential of the employees. But there is, particularly among the production workers, who are most familiar with the technology and work organization, a rich potential for innovation that can result in considerable productivity gains. Because the Fordist management method treated workers as merely an appendage of the production apparatus, it was accompanied by certain problems that, in this view, remained latent for decades due to specific market conditions but became manifest in the late 1970s in the form of a competitive disadvantage vis-à-vis the Japanese automobile industry.

The Japanese automobile producers, by contrast, are said to owe their respective cost advantages to an integrated management conception in which human-resources management plays an important role and in which the innovation potential of the employees is an important productivity resource. The Taylorist reduction of the intellectual demands made on workers is no longer the maxim but rather the use of their intellectual capacities for the goal of production. Japanese workers are therefore not merely manual workers but are also integrated

into the production system as intellectual workers. Workers are not deprived of responsibility and controlled but are motivated by management. This is possible in a cooperative management style, in contrast to the antagonistic organizational model pioneered by Ford.

According to this viewpoint, the cooperative Japanese management approach has proved that Ford's suspicions about the intellectual abilities of workers were not justified. It represented rather a self-fulfilling prophecy: when their intellectual abilities were underutilized and controlled by management, the workers lost motivation and identification with their work and with the firm. If, however, the intellectual capacities of workers are taken seriously, motivation, loyalty, the quality of work, and identification with the firm increase.

Several arguments use Japanese firms to support this thesis. One refers to work organization. Firms organized according to Fordist principles possess an industrial engineering department separate from the production department that sets time standards and balances the line. In Japan, responsibility for these functions is said to be more strongly decentralized. Work organization is not so strictly determined and is more accessible to participation by the employees. Like others in comparing the Japanese model to the United States, Joachim Bergmann observes that, in contrast to the Federal Republic, "work organization is on the whole less Taylorist than in German plants."<sup>29</sup>

Japanese success with this approach, it is argued, proves that, in contrast to the Taylor-Ford organizational paradigm, the decentralization of responsibility is not a hindrance to productivity but actually fosters it.

The Japanese "responsibility model," in contrast to the "control model," is also said to be conducive to product quality and for the same reasons. The responsibility of the individual workers for product quality increases the motivation for quality work. The success of the quality circle is ascribed to the decentralization of responsibility and the allocation of intellectual tasks to workers in the Japanese management approach.

Decentralized responsibility is coupled with the protection of the core work force against the basic employment risk of dismissal that has led to the pursuit of rigid job security strategies by workers in other countries. Work under conditions of life-long employment means that, it is argued, the intellectual capacities of the workers are no longer blocked by their insecurity, or directed against the productivity interests of the firm.<sup>30</sup> Japanese personnel management also stresses that no innovative suggestions should result in disadvantages for those individuals or groups that make them. If suggestions result in personnel

reductions in a group, no workers are demoted. Instead, the best workers are promoted to more attractive jobs. The wage system, which does not tie pay strongly to a particular job and has a strong seniority component, largely protects workers from down-grading and thus from any fears that might inhibit innovation. Providing job security is thus recognized as an independent goal of management in order to motivate employees and to promote innovativeness and is not, as is the case outside Japan, left to unions or employee representatives.

The work and innovative potential of the employees is further expanded by qualification measures. This is also the reason for job rotation, which is a basic feature of Japanese personnel policy. Workers thus become capable of performing different jobs and of making broad suggestions for improvements in work organization.<sup>31</sup>

In this view, the overall success of the Japanese organization of the labor process is based on a superior management of the "human factor." Two different management philosophies are seen as competing, which McGregor as early as 1960 termed theory X and theory Y. Theory X assumes that workers must receive precise instructions and be strictly controlled in order to be productive. Theory Y, by contrast, assumes that the success of the organization is based on mutual trust, responsibility, and the stimulation of initiative. Despite their current practices, management outside of Japan can make a choice. The transfer of essential elements of the Japanese model is possible; this is the key thesis of Ouchi's theory Z.

### *The Production-Control Approach*

Authors who study the Japanese system of production present a quite different picture. While the human-relations approach stresses motivation, stimulation of a sense of responsibility, identification with the firm and its product, innovativeness and diligence—hence the productive potential of employee participation—the approach now being discussed holds the Japanese form of production control to be responsible for high job performance and flexible labor deployment. The motivation of individuals and their identification with the goals of the firm play, in this perspective, only a secondary role and are the result of the organization of production. Because this school of thought is less well known, this part of the paper documents it with more extensive source quotations.

According to these studies, the assumption that there is a low degree of Taylorism in Japanese plants is wrong. For example, Nakase shows that Japanese industry not only imported and copied American and European technology in the postwar period but also imported

Taylorism and American organizational concepts much earlier. After 1910 "scientific management" was introduced "rapidly and sensation-ally into Japan."<sup>32</sup> Ronald G. Greenwood and Roward Ross also criticize that the historical influence of Western management theory is hardly considered in the contemporary Japan debate. In fact, however, the works of Taylor and others were not only quickly translated but their basic ideas also had in practice a "major impact" on Japanese industrial production.<sup>33</sup> Richard J. Schonberger, who wrote his book on Japanese manufacturing techniques expressly for American plant managers, rejects the characterization of contemporary Japanese plant organization as being less Taylorist: "I have been astounded by statements I have heard from some American 'authorities' to the effect that the Japanese reject Taylorism, supposedly, in favor of a more humanistic approach. Frederick W. Taylor, an American, is the father of IE [Industrial Engineering] workstudy, ca. 1900, but the Japanese out-Taylor us all—including putting Taylor to good use in QC [Quality Control]-Circles or small-group improvement activities."<sup>34</sup>

According to this viewpoint, work in the Japanese automobile industry is not any less repetitious and standardized than in the United States and Western Europe, and these principles are the basis of the Japanese organization of the labor process. According to T. Shimizu, citing Toyota sources (the automobile producer that is always mentioned as an exponent of the Japanese model), for example, it is a requirement of human dignity to eliminate "unnecessary work" by means of specialization and standardization of work:

Respect for human dignity, as Toyota understands it, means "to eliminate from the work force worthless, parasitical persons who should not be there and to awaken in all the awareness that they can improve the work place through their own efforts and to foster a feeling of belongingness."

To discover and to eliminate unnecessary work sequences and excess motions by workers is also related to the striving for rationalization. In order to eliminate parasitism and superfluous work motions, a thorough standardization that can be immediately understood and observed by everyone is necessary. In order to promote standardization, complicated work tasks must be avoided as much as possible and work simplified. To stabilize the quality and quantity of work and output it is also necessary to eliminate any deviant cases.

Usually progress in standardization results in repetitious work and leads to alienation from the job. On the other hand, a strict standardization makes it easier to understand a job, leads to the discovery of questionable or deficient points and makes it easier to identify parasitical persons. When work itself is simple and repetitious, it is easy to identify parasitical and superfluous persons (oneself included).<sup>35</sup>

Taylor and Ford could not have described this goal more clearly—despite the vocabulary of a pest exterminator. The specifics of the

Toyota system first become clear when one reads the rest of the quotation: "The workforce participates in the movement for the improvement of jobs by discovering such persons. Toyota places great emphasis on the independent discovery by workers of manpower excesses or unnecessary movements and on the effort to present improvement suggestions for their elimination."<sup>36</sup>

"Toyotism" is not different from Fordism in its goal but in the way in which the goal is to be achieved. Even Taylor would have had no objection to rationalization suggestions from the employees. By contrast, he made every effort to get the aid of workers in rationalizing production. However, these efforts frequently failed because workers refused to cooperate. "Toyotism" is, therefore, not an alternative to Taylorism but rather a solution to its classic problem of the resistance of the workers to placing their knowledge of production in the service of rationalization.

Time-and-motion studies still exist in the Japanese automobile industry, and the time standards department has by no means been dissolved. Rather, "... industrial engineering is highly esteemed in Japanese industry. In the Toyota family of companies, IE degrees are pursued and attained by many production foremen. In other Japanese companies, IE is the only specialty that exists as a sizeable staff department. And in most Japanese companies, IE/work study concepts are influential from the top to the bottom of the organization."<sup>37</sup>

The setting of time and production standards is merely organized differently in order to make use of the employees' knowledge of the production process. The lower-level supervisors play an important role. They have been trained in time-and-motion studies and undertake measurements on jobs in their work area. Outside Japan this task is performed by a central management staff office that does not know the individual tricks and strategies of workers to do the work more easily (short cuts, and so on). In Japan the lower-level supervisors are thoroughly familiar with these work practices and can incorporate them in their measurements.<sup>38</sup> In this way shop floor knowledge is combined with professional competence—something that has not been sufficiently achieved outside Japan.

This goal is also attained through the inclusion of the many innovation circles (of which the quality circle is only one example). Abernathy, Harbour, and Henn observe that "one of the principal thrusts of quality circles in Japan is to achieve a full 60 minutes of work each hour by each worker."<sup>39</sup> For this purpose the innovation groups also receive basic training in time-and-motion studies. Professional time-and-motion study experts are connected decentrally with

the circles: "... in many of the projects improvements in quality and work methods go together; IEs are frequently called in to help with process design, tooling improvement, re-layout of facilities, time studies, and so forth." 40

In addition, two further principles of the organization of production guarantee that the decentralized connections between the time-and-motion studies and the production department enhance employee innovativeness, job performance, and the flexibility of labor deployment: the no-buffer principle and the principle of the visualization of underutilization.

The literature on the Japanese discussion has described how the Japanese automobile firms organize their supplier relations on a just-in-time basis without large inventories of parts and supplies. The productivity gains through the rationalization of the supply process are emphasized. Only in a broader analysis of Japanese production control does it become clear, however, that the just-in-time system is only part of a comprehensive no-buffer principle that also applies to manning levels and aims at the comprehensive rationalization of the organization of the labor process. Schonberger characterizes this principle as follows:

The Japanese no longer accept the buffer principle. Instead of adding buffer stocks at the point of irregularity, Japanese production managers deliberately expose the work force to the consequences. The response is that workers and foremen rally to root out the causes of irregularity. To ignore it is to face the consequences of work stoppages. The Japanese principle of exposing the workers to the consequences of production irregularities is not applied passively. In the Toyota Kanban system, for example, each time that workers succeed in correcting the causes of recent irregularity (machine jamming, cantankerous holding devices, etc.), the managers *remove still more buffer stock*. The workers are never allowed to settle into a comfortable pattern; or rather, the pattern becomes one of continually perfecting the production process. Toyota's small group improvement activities (SGIA) never run out of new challenges. Whether the cycle of improvement can be sustained indefinitely, remains to be seen. 41

This principle of continuous increases in the rationalization pressure is not only achieved by reducing buffer stocks but also by reducing manning and working time buffers. For example, according to Shimizu, "In its time and motion studies, Toyota... does not include in its estimates any extra time, as is usual in such studies." 42 Also, the "production control... does not provide for any time reserves. If the goal of the humanization of work is defined as making possible self-realization through providing a time reserve, then Toyota's production control does not correspond to this goal." 43

After a visit in five Japanese automobile plants, the vice-president of an American automobile multinational firm observed that the

Japanese avoid "excess manpower" and even systematically produce with undermanning. "They provide no relief manpower or standby labor pool for absentee coverage, sick leaves, paid personal holidays etc. Everyone has a full job and everyone is working full-time. Typically they provide manpower at only 97 percent of the line rate. The other 3 percent is made up by 'extra effort.'"<sup>44</sup> Analysts of the Japanese production control largely attribute even the transfer of quality inspection and simple maintenance tasks to production workers, or the development by skilled workers on technical equipment of broadly applicable qualifications, to the goal of avoiding personnel underutilization and characterize them as a rationalization of indirect production activities. The transfer of indirect production activities to workers without increasing the time allocated intensifies work and leads to savings in indirect production personnel. The capability of the skilled workers to perform a number of jobs increases their utilization and reduces waiting time for the arrival of a specialist—a constant source of complaint in British and American plants with clear demarcations between different types of skilled workers. For this reason, Y. Sugimori et al. observe, "... if the equipment and workers are tied together, workers are subject to idleness. To prevent such waste of waiting time being created, various improvements have been made such as... separating the workers from the equipment by assigning a worker to multiple equipments."<sup>45</sup> Monden, too, concludes that workers operating multiple equipments under the "multi-process-worker concept" can decrease the number of workers needed and thereby increase productivity.<sup>46</sup>

The principle of visualization is frequently used to make underutilization of personnel visible. Toyota has a "procedure that makes it immediately apparent to others when a worker has superfluous time. (When, for example, the work cycle of the assembly line corresponds to a cycle time of one minute and the worker can do the assigned task in 40 seconds, he is under instructions to stand for the remaining 20 seconds without doing anything. This shows him and others that the worker has too much time—that there is nothing that prevents him from doing more work.)"<sup>47</sup>

The warning lights above many assembly lines signaling problems in carrying out work tasks have the same visualization function. In the literature the possibility of workers using the lamp to summon help is usually emphasized. It certainly is an important function of this device that workers who are not able to carry out their assignment with the required quality are able to stop the line. But Schonberger also points to the work-intensification function of this form of visualization. According to his studies at the Kawasaki firm (in the United States

under Japanese management), a situation in which no warning lamp is on signalizes to management that there is a personnel or working time buffer on the line and hence the possibility of withdrawing personnel from the line:

An assembler whose production has been slowed up by some problem or who is not able to keep up with the speed of the line turns on the yellow light, which is the signal for a roving master assembler to come and help. Also the light alerts the supervisor to the problem. The red light is turned on only when a problem is severe enough to bring the line to a hold. Then master assemblers, supervisors, foremen, and all idled line workers help get the line going again. A red light brings frowns, but plant management is pleased when many yellow lights are on. Yes, *on*. As one Kawasaki manager put it: "When the yellow lights are on, it means that we are really busting ass." To follow this reasoning, we must understand that the main reason for the yellow is too few workers on the line to handle the rate of output. If no yellow lights are on, management knows that the line is moving too slowly or there are too many workers. Usually, the response is to pull workers off the line and assign them elsewhere, so that it becomes hard for the remaining workers to keep up; so yellow lights begin to come on. (If all are on, it is time for management to back off: Add back a few workers—or slow the speed of the line.) Pulling assemblers off the line exposes remaining assemblers and their supervisors to trouble, e.g., inability to keep up without sacrificing quality, which leads to an attack on the cause of the trouble—whether human or mechanical—so that it won't happen again.<sup>48</sup>

This management practice "of deliberately pulling workers off the line when the line is running smoothly" avoids, like the other manifestations of the no-buffer principle, costly production irregularities only if workers can be to a large extent flexibly deployed in a variety of work tasks. In case of bottlenecks, workers must be ready to intervene in a broad spectrum of work areas and to assume the job activities of their colleagues who have been withdrawn. This "readiness" is achieved, according to Schonberger, by daily output quotas and the related system of sanctions: "All workers—and their foremen—have production quotas to meet; withheld praise, enforced overtime or reprimands are in store for those who fail to meet quotas. So it is natural for each affected worker to want to come to the aid of the worker whose drive belt breaks, whose machine is jammed, or who is having any of a large variety of other common problems."<sup>49</sup>

Satoshi Kamata confirmed this observation on the basis of his experience as a temporary production worker in the transmission assembly at Toyota. In case of production shortfalls, workers were compelled to work longer, even for many hours, beyond the normal working day until they reached the quantitative quotas. Due to the already excessive overtime and short relief time (twenty minutes per

shift), every extension of working time was experienced as highly stressful. This results in a great deal of group pressure to avoid or eliminate stoppages. Moreover, if workers were absent, either the supervisor had to substitute for them or other line workers had to do additional job tasks.<sup>50</sup>

This flexibility means that individual workloads are in principle upwardly open. The supervisors must be in a position to redistribute work tasks relatively quickly and to rebalance the line, even if personnel are withdrawn from their area. This practice is, however, in no way incompatible with Taylorism or Fordism: it is a fully compatible means of intensifying work. Furthermore, this context makes it evident that the function of the work group is different from the way it is depicted in the culture-oriented approach. In no-buffer production, in which the costs of production irregularities are shifted onto the workers, the social pressure of the work group is a functional part of production control. Dick Kazuyuki Nanto also defines peer pressure—the reciprocal performance pressure among the workers—as an essential moment of the Japanese management style.<sup>51</sup> The thesis of Lecher and Welsch that the Japanese firms place relatively little emphasis on individual performance and emphasize instead the group performance of the entire work force has thus to be re-evaluated. It is the group that stimulates individual performance. And this performance pressure is not relatively slight but relatively high. At least, this is the result of a time-and-motion study done by an American automobile firm that investigated job performance in Japanese plants. According to this unpublished study, the workloads in Japan were on the average 15 percent above those in a comparable American plant.

This work intensification is to an extent limited by the goal of no-defect production. This Japanese production goal is certainly different from the goal, prevailing in the United States in the 1960s and 1970s, of output maximization, which led to shortcomings in product quality. In the U.S., for the sake of output, line stoppages to correct product defects are to be avoided in every case, and any defects are to be picked out by separate quality inspectors and corrected by repairmen. By contrast, in Japan, the line workers are themselves responsible for defects. They have to inspect and correct their own work, and any defects subsequently discovered are attributed to them as a performance deficiency. In order to carry out corrections well, management has given its workers the possibility of either requesting help by means of the warning lamps described above or, in more serious cases, even stopping the line.

However, according to Nanto, the strong group pressure impedes making compromises in efficiency in order to improve product quality.

Japanese automakers often point out that any worker who finds anything defective in the product has the right and the obligation to shut down the whole assembly line. Shutting down the assembly line, however, does not necessarily reduce the number of cars the work team is required to finish that day. The peer pressure is tremendous, therefore, for each individual in the group to achieve 100 percent quality control and efficiency. Each person depends on each other person to do the job well. If one person slacks off or does not show up for work, it places a burden on others.<sup>52</sup>

Although the authority to halt the line sets limits to the intensification of work, Japanese management has clearly succeeded, through pressure on the workers, in maintaining the line of compromise between product quality and efficiency at a relatively high level.

*An Integrated Explanatory Approach: The System of Work Organization and Labor Relations*

The explanations of the superiority of Japanese management discussed thus far have all failed to answer a central question: why do Japanese workers accept this management system? The human-relations approach—which maintains that this acceptance and participation is secured by a correspondence of the interests of the work force and the firm (for example, in creativity) and by the guarantee of job security—is untenable in light of the evidence from studies of the actual operation of production control in Japanese plants. Japanese workers are not secure against one classic risk that is a main source of conflict between management and the work force outside Japan: the intensification of work. Terms like “speed up,” “*Akkordschere*,” and “*Arbeitshetze*” express, both in Europe and America, the conflict potential of management’s interest in the intensification of work and, as well, the behavior by individual workers that makes it easier for management to intensify work. Speed-ups have not only been a source of conflict between management and employees, for which the struggles at Lordstown are a prominent example,<sup>53</sup> but they have also led to a whole spectrum of informal rules of behavior on the part of employees that exert social pressure on those workers who, because of their interest in higher wages or management recognition, their simple eagerness to work, or their ignorance, so exceed production standards that it signals to management the possibility of raising those standards.<sup>54</sup> This conflict has been discussed for years in the literature on labor relations,<sup>55</sup>

in which the debate has centered on the question of the rationality of limiting work effort.

According to material available on production control in Japan, there has been no corresponding discussion on this issue there. The circle of greater effort leading to an increase in workloads—against which workers in the United States and Western Europe have built up, in different forms, a system of peer pressure—is praised as a model in Japan. However, the central question remains unexplained as to why peer pressure in Japan contributes to an increase in work norms rather than protecting workers against the intensification of work. The argument that the intensification of work in Japan serves not only—like in the United States—to intensify work but always also to discover bottlenecks and stimulate innovation<sup>56</sup> is not satisfactory.

Do we need therefore to invoke the cultural approach to explain this phenomenon? This approach, too, has a number of shortcomings and fails to offer a satisfactory explanation. In our opinion, only a comprehensive perspective that includes both the organization of the labor process and the organization of labor relations can adequately explain the functioning of the Japanese model. This thesis contrasts with both the cultural theory and the management theory. While the cultural approach, with its emphasis on the continuity of norms and behavior, neglects the relatively recent and conflict-ridden origins of the Japanese model, the management approach forgets the social, particularly the labor policies, which are functionally related to the Japanese form of production management.

Studies of the Japanese system of industrial relations have shown that present relations in the plants can in no way be understood as a consequence of feudal values and patterns of behavior but can be explained in part in terms of postwar developments. The intense labor struggles of the 1950s were a decisive phase in the constitution of the current Japanese system of labor relations.<sup>57</sup> In the course of this conflict Japanese firms succeeded, especially in the automobile industry (Toyota in 1950, Nissan in 1953), in destroying the militant postwar unions that had an industry-wide orientation and in firing union representatives. The Japanese automobile industries were thus able to prevent from the outset the development of a strong labor-union movement, to particularize the interest representation of the employees into plant or company unions, and to limit considerably the scope of labor-union demands. With respect to the struggle at Nissan in the year 1953, Kiyoshi Yamamoto concludes:

In their [management's] eyes, however, one serious obstacle clouded Nissan's future: The labour union was staging strikes too frequently and was unwilling to

cooperate in production. Management decided to crush the union. The workers tried to protect their right by staging a 100-day strike. In the end, however, they were miserably defeated, and the union was split. The second union is the present Nissan "Workers" Union, which completely cooperates with the company. Thus, it was by crushing the workers' struggle that Nissan managed to lay the foundation for its prosperity in the subsequent years.<sup>58</sup>

After having defeated the unions, the Japanese automobile industry entered into the rapid growth phase on the 1960s and 1970s.

The organizational principle of the company union constitutes a much more advantageous arena of negotiations for management than more comprehensive unions. It is easier for the latter to pursue goals that limit management prerogatives in utilizing labor and entail productivity disadvantages for the firm. So long as these disadvantages apply to all firms their competitive impact is neutral within a national context. Company unions are in a significantly different situation. Their ties to the individual company make them much more strongly dependent on market success and hence on the productivity and cost structure of their firm. As a consequence, the scope of labor-union demands is restricted; conflictual goals with respect to the utilization of labor are avoided in favor of positions that can be of benefit to both sides. This pacification function that is inherent in the structure of the company union was stabilized by Japanese automobile firms in the 1950s through the destruction of the militant unions. The imposition of this union structure by the firms, as well as the related purge of the work force, led to a strongly selective articulation of employee interests in which working conditions were largely excluded. Unions concentrated instead on compensation (wage, benefits) and employment-security issues.

The "harmonious labor relations" found in Japan by the human-relations approach and cultural theorists are, therefore, the consequence of the defeat of a militant labor-union movement and can only be adequately understood in this context. The present-day "harmonious" structure of relations was achieved in a struggle by management.

The concept of life-long employment also has to be interpreted differently. Lecher and Welsch also emphasize that the principle of life-long employment "is not solely a result of the traditional paternalistic structures" but "has purely economic roots."<sup>59</sup> In order to stabilize their work forces against high rates of fluctuation in the 1920s, large Japanese firms began to develop core work forces. The principle that the core workers were not to be dismissed does not originate in collective agreements but was purely a personnel policy of management. Hideo Totsuka stresses that this structure has not prevented employers

from dismissing workers in times of economic decline. He observes "that at least during periods of economic crisis and during the war economy the so-called Japanese employment policy did not exist."<sup>60</sup> It was the intense conflicts of the 1950s that made clear to management how sensitive such policies are. At least for the automobile industry, the rapid and almost continuous growth period of the 1960s and 1970s made any reductions in personnel unnecessary. Even if one interprets the concept of life-long employment as a compromise between worker and management interests, it is to be stressed that management also derives quite significant advantages from this system. The human-relations approach, in particular, emphasizes the function of employment security in promoting motivation and identification with the company. It neglects, however, the increased dependence of the employees on the firm. When the employee enters the internal labor market of the large Japanese firm, there is no further possibility of advancement outside that firm; all large firms recruit externally only for positions at the bottom of the job hierarchy and train their specialists for better jobs through on-the-job training and job rotation. In contrast, for example, to American automobile firms, where advancement rights are regulated strictly by seniority and hence independent of management preferences,<sup>61</sup> advancement of employees in the Japanese internal labor market is largely determined by management.

At Toyota, management alone decides on promotions. According to Shigeyoshi Tokunaga,<sup>62</sup> age and seniority are considered, but factors like work effort, cooperativeness, conscientiousness, and innovativeness are the decisive ones. Only this can explain the variation in promotions, for example, between four and twenty-one years for group leaders and between eleven and twenty-seven for foremen. At Nissan the company union has greater participatory rights. In the light of the large degree of congruence between management and labor-union organization (this is considered below) the employees there too have to prove their loyalty and work effort to advance in the internal labor market.<sup>63</sup>

This dependence on management for career advancement is reinforced at Toyota by an extremely individualized wage system.<sup>64</sup> In Japanese automobile firms, percentage raises in pay are negotiated annually in the "spring offensive" of the labor unions, which, however, only relate to total compensation of the whole work force. Pay increases for individual workers cannot be deduced from this overall percentage. The total wage increase is first allocated between the two main components of pay: the basic wage and work-area-related incentive pay. Incentive pay, which averages about 50 percent of normal monthly pay (excluding such additional wage components as night shift

and overtime pay) is calculated according to the efficiency of individual work areas and hence increases the pressure of the supervisors—who are evaluated according to this measure—and of the work group on the work effort of the individual. This incentive component of wages is usually cited as evidence for group orientation and group effort. However, this fails to take into consideration the highly individualized basic wage, which constitutes about 40 percent of the regular monthly wage and varies considerably.

The total annual increase in basic wages is distributed among twelve different status groups (from unskilled workers to department heads) in its work force so that each group receives an average lump sum increase in wages. The group increases can differ greatly. For example, in 1981 foremen as a group received an average increase in wages that was about twice as large as that received by the lowest status group.<sup>65</sup> In this way a clear hierarchical group differentiation in wage increases is created within the firm. Even within these status categories, individual workers do not receive the same wage increase. Rather, each year supervisors evaluate all employees according to their behavior and work effort and divide them into five categories. Workers in the highest category receive 115 percent of the average wage increase for their status group, while workers in the lowest category receive only 85 percent. These large differences have an impact not only in the year of the evaluation but during the employee's entire career because subsequent individual wage increases are based on the individual's previous wage. Even promotion to a higher status group does not result in a new wage classification corresponding to the more qualified work performed but only in a zone with greater wage increases that are always calculated on the basis of the wage level previously attained. It would be wrong to describe this wage system as one based on seniority—as frequently occurs as a result of an erroneous translation of the Japanese term *Nengko*.<sup>66</sup> Although individual wages do increase with plant service as a result of annual raises, the increase is, however, quite varied and depends on the subjective evaluation of the supervisors. Thus, Ikuro Takagi observes, "Nowadays, the feature of the wage system as well as the wage level can not be understood with the classic theory of 'Japanese type wages.' In Japan the wage rate for a worker in the respective enterprises differs completely from other workers, even if they belong to the same age, or the same length of service, having the same degree of skill and efficiency, etc. Individual wages are absolutely 'individual' to workers."<sup>67</sup>

This wage system is completely different from that in the automobile industry in Western countries, where wages are strictly related to jobs. It has an enormous impact on the individual that is overlooked

by those theoreticians who emphasize the motivation of the employees through employment security or group orientation. By disconnecting the wage system from work assignments Japanese management has solved the problem—as it exists in the Western automobile industry—of relatively limited chances for advancement due to the truncated qualification structures. It has developed an independent system of wage careers that promotes ambition and competition among the work force without requiring any changes in the skill pyramid. Extremely strong competition between workers is an important consequence that would be erroneously described as group orientation: “Japanese workers, although they are said to have a group-oriented nature, are in fact yielding to the strong competition and meritocracy.”<sup>68</sup>

The unions have been unable to regulate the internal labor market—in its double sense of promotions to higher status groups and a separate wage-career system. Such a regulation gap has significant consequences in a system of life-long employment. The entire career of the individual worker depends on the good will of management in deciding on his or her advancement. In contrast to the usual emphasis on the formation of Japanese culture by collective norms, this system of individuated treatment leads to a pronounced competition among workers. They must continuously demonstrate as individuals their usefulness to the firm through diligence, docility, and flexibility. The resulting destruction of solidarity among workers is frequently mentioned, especially by those who have studied the Japanese system of industrial relations. For example, Tokunaga, a prominent expert on industrial relations in Japan, is of the opinion that the first step for the Japanese labor unions to recover their negotiating strength is to “put a stop to the more or less arbitrary decisionmaking by plant management with regard to promotion, wages, and overtime and to establish a new basis for solidarity among the workers.”<sup>69</sup>

The far-reaching dependence of the individual on management's evaluation of their performance is a decisive factor in the “committed worker” syndrome that is pervasive in the literature on work in Japanese plants. It explains the acceptance of greater flexibility in work effort and deployment, the participation in the innovation process by even those Japanese workers who associate it with “increased work” and “physical stress,”<sup>70</sup> and that strange phenomenon that Japanese workers fail to take their vacation time to which they are entitled and are hardly ever absent due to sickness.

Japanese management did not have to pay a large price for the high degree of dependency of their employees. The principle of employment security was not difficult to realize under the expanding market

conditions and increasing production since the 1950s. Moreover, there are also a number of flexibility buffers that ease the practice of life-long employment. First, employment security exists only for core workers. Marginal workers who do not enjoy employment security can be dismissed.<sup>71</sup> However, the Japanese automobile industry has largely lost this buffer through the transfer of temporary workers to the status of core workers during the massive expansion phase in the 1970s. Japanese management can still resort to a second flexibility reserve, a high proportion of overtime—20 percent overtime work is not rare. Third, the network of dependent suppliers also provides a significant buffer into which excess workers can be shifted. In recent years the Japanese automobile industry has primarily used this possibility to place its older workers after leaving the core plants. It could, however, also be used in case of a fall in production—as has been done in other industries in the past.<sup>72</sup>

The lack of solidarity among Japanese workers as a result of their being so strongly dependent on management personnel decisions is additionally linked to the lack of union regulation of shop-level labor deployment and work norms. The lack of autonomous collective institutions for the articulation of employee interests is characteristic of this system of labor relations. The Japanese automobile firms were even able in the past to have the same persons who, as supervisors, had to organize the pressure for work effort and job flexibility be, as well, the labor-union-interest representatives of the employees. What Masumi Tsuda observed at Kawasaki is also applicable to the Japanese automobile industry: “. . . the labour union is operated by the company’s key employees. As a result, the union is not free to function separately and independently of company policy but rather might be described as ‘cohesive’ with the company.”<sup>73</sup>

One reason this structure has not yet been disrupted is that voting for labor representatives is not secret.<sup>74</sup> Thus, citing examples that are shocking from the point of view of Western labor unions, Yamamoto concludes that “the election of Nissan Workers’ Union officers is far from secret. . . . Ordinary union members cast their votes under close surveillance.”<sup>75</sup> The elections take place openly in the offices of the supervisors. Any opposition, therefore, runs the risk of open discrimination in promotions and personnel evaluations.

These gaps in independent labor-union interest articulation have been filled by management-controlled communication structures. They extend in many cases beyond the normal working day, reaching into employees’ lives outside the plant, although still connected with the firm’s system of sanctions and rewards. Just as Ford initially paid his

famous \$5 wage to workers who also demonstrated the desired virtues in their private lives, so today Japanese firms exercise a strong influence on their employees' lives even beyond the work place. Many supervisors and workers feel compelled to participate in company activities even during their time off. The decentralized discussion forums based on individual work areas include, in fact, many management representatives and are thus connected with the system of personnel evaluation with its consequences for the career of the individual employee. Lacking collective forums for articulation of their interests, Japanese workers must resort to other means to accommodate the pressure that results from the work requirements and labor-deployment policies in the plant. This is the key to understanding the "peer-group pressure" for presence at work and job performance. The pressure for extra effort—in a system without personnel buffers—can only be resisted if the work pressure is passed on to other workers. If one has to help do the work of others whose work effort is less or who are absent and if collective pressure is unsuccessful in achieving a buffer for absenteeism, sickness, and other personal needs, as exists in Western countries, then it is only rational to pass this pressure on to one's fellow workers. It is reported that Japanese automobile workers even independently contact absent employees in order to speed up their return to work.

The characteristic system of industrial relations, with its consequences for the behavior of individual workers, should not be regarded as being merely a secondary contextual condition of the Japanese organization of the labor process. Rather, the labor process and industrial relations are so strongly interrelated in all important dimensions that an isolated consideration of the labor process, as is done by management theorists, is impermissible and leads to erroneous conclusions. The Japanese management system may be superior to the American and European systems in productivity, but it is only possible in an industrial-relations environment in which there are hardly any limits to management prerogatives.

In our integrated work-process and labor-relations perspective, Japanese management has not developed a superior approach that produces a correspondence of interests and harmony between capital and labor. Rather, the contemporary Japanese management works within a system of industrial relations that limits the articulation of collective interests by employees. The Japanese organization of the labor process is, therefore, not easily transferable; it is at best possible to adopt some of its elements. The simple transfer of certain elements would even have counterproductive effects. In a system of industrial relations that is sensitive to the intensification of work, the organization of the labor

process according to the no-buffer principle would lead to disruptions in production rather than to an increase in work effort and flexibility in labor deployment. In a system of conflictual industrial relations it would, moreover, even increase the power of workers vis-à-vis management due to the increased vulnerability of the production process to disruptions.

After all this has been said, one can bring culture back into the picture and put it into its proper place. Would not American workers reject Japanese-style pressure on work intensity and working time, even if the industrial relations system was structured as in Japan? Is there not some factor specific to Japanese society in general that has to be taken into account as a cultural variable? This is certainly open to debate. But this debate must also consider the question of how cultures are reproduced under changing conditions. In our view a particular system of industrial relations and management control also plays a central role in reproducing cultural traits. This perspective is certainly different from those theories that start with cultural explanations and forget almost everything else. Culture then tends to become an independent variable and, at the same time, a catch-all phrase used for want of a more specific explanation. But culture itself is a variable interrelated with others, particularly those we have tried to highlight in this paper.

#### SUMMARY

The current Japan debate is filled with myths, misinformation, and misunderstandings. While the Japanese organization of the labor process differs from that of the U.S. and European automobile industries, it is not a basic alternative to Fordism, as is commonly believed. "Toyotism" is simply the practice of the organizational principles of Fordism under conditions in which management prerogatives are largely unlimited. Like in the West, work is organized according to the assembly-line principle, is repetitious, consists of short cycles, and is subordinated to centrally planned time standards. The—frequently exaggerated—allocation of indirect production tasks to production workers do not fundamentally change the character of work and can be regarded as an advanced rationalization of indirect production activities. It functions with so little difficulty because Japanese management has been able to use the peer group as a control instrument. This control is based on the organization of strong competition between individual workers who lack effective collective means of resistance.

The pressure on the individual—mediated by the work group (which, however, lacks effective collective interest representation)—is the central element that makes the Japanese system capable of

functioning as it does. It is this element that makes the Japanese system regressive from the point of view of more developed labor unions; it is based on conditions that labor-union organizations strive to overcome. This is evident, for example, from the history of the United Automobile Workers union in the United States and can also be demonstrated from the history of labor unions in other countries. The American unions were shaped by the historical experience of a management that attempted to implement basic conceptions of scientific work organization and, at the same time, to suppress labor-union organization efforts with authoritarian force. When labor-union efforts were successful, they focused on depriving Fordism of those arbitrary elements that threatened collective-interest representation through an individualizing management strategy.<sup>76</sup> Thus, the union goal was to resolve precisely those problems that Japanese employees now face as a result of the strong individual pressure. The wage scale was negotiated nationally and related to precisely defined job classifications. The fixed hourly wage left no room for wage drift, individual bonuses, or individual wage incentives. The wage system in U.S. auto plants is, moreover, more egalitarian than that in the Federal Republic or Great Britain, having the smallest ratio between the highest and lowest wage categories, thus further limiting incentives for individual competition.<sup>77</sup> The same impulse is behind the mechanical seniority system that prevents management from including criteria of work effort and behavior.

The Japanese model of industrial relations can also not simply be regarded as a participatory model. If one understands participation in Rensis Likert's sense as a "significant amount of decentralization, delegation of additional authority, power equalization, or change in organizational structure,"<sup>78</sup> then it does not apply to quality circles. As George W. Jacobs concludes, "No participation in the sense of the basic definition model, therefore, is in evidence."<sup>79</sup> Participation occurs in a controlled context in which the topics, goals, and forms of articulation are, for practical purposes, limited to company interests. Only under these conditions is the participation of the employees used as a productivity reservoir in Japan. And it is just this context that prohibits us from interpreting the participation of the employees as a creative alternative to Fordism. It simply makes possible the solution of the classic problem of scientific management, namely, how to use the knowledge of the employees for purposes of rationalization. Nevertheless, this does not preclude the possibility that the quality circle could be a meaningful organizational form in another context.

Again, while the system of life-long employment and the severing of the relationship between wages and work requirements does indeed provide security against dismissal and down-grading, this security is so strongly integrated with intense competition among Japanese workers, strong ties to the company, and dependence on the subjective evaluations of supervisors that to single out the security aspect is misleading. It may be that employment security is the key to improved labor relations. But one cannot refer to the Japanese model without taking the other aspects into account. Rather one has to develop employment security systems that avoid the disciplining features so characteristic of the Japanese system.

It is not the intention of this paper to disseminate any new myths about Japan. The Japanese system is not ultra-stable. The employees are beginning to "over-age," with a tendency toward increasing fixed wage costs for the firms. The transfer of older core workers to the secondary sector is increasingly seen as a problem, and, in recent years, the time at which they leave the core work force has shifted from age fifty-five to about sixty years of age. The pressure of Western labor unions on Japanese employee organizations has created some room for maneuver there that is manifest, for example, in a slow tendency toward actually taking earned vacation time. Moreover, if there is a stagnation in automobile production or a market decline, the Japanese employment system would be subjected to strong tensions. Nevertheless, there is, at present, no reason to expect an upcoming crisis in the Japanese system of industrial relations.

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