Managerialism and the demise of the Big Three

Robert R Locke [Emeritus, University of Hawaii, USA]

Abstract: This essay is about the crisis of US automobile management and the difficulties that management educators and practitioners in America have had facing up to that crisis. It focuses on Detroit's Big Three but it also looks at the role Japanese firms played in transferring JMS (Japanese Management Systems) to America, particularly the transfer of TPS (the Toyota Production System) to Georgetown, Kentucky. It opens (I) with a discussion of the triumph of a science-based "New Paradigm" in business school management education and in industry, with reference to its critics, in order to establish the institutional framework within which US automobile management expanded and operated after World War II; then (II) a more general discussion ensues in which U.S. managerialism and JMS are compared, and the pathways and barriers to the transfer of JMS to America both to US firms and to Japanese transplants are explored, before in the last part (III) the focus narrows to a specific case of transfer: H. Thomas Johnson's analysis of Toyota's successful alternative Production System (TPS) at Georgetown and how it supersedes in theory and practice the managerial methods of the Big Three.

Managerialism -- What occurs when a special group, called management, ensconces itself systemically in organizations and deprives owners and employees of decision-making power (including the distribution of emoluments) – and justifies the takeover on the grounds of the group's education and exclusive possession of the codified bodies of knowledge and know-how necessary to the efficient running of organizations. – Locke 1996

A. The concept and reality of US management after World War II

In 2008 Rakesh Khurana published a history of American business schools in which he wrote an excellent chapter about "Disciplining the Business School Faculty: The Impact of the Foundations." He was not the first to do so. Robert R. Locke opened his 1989 book, *Management and Higher Education Since 1940*, with a chapter on a similar subject, in which he described the creation of a "New Paradigm" in business studies, the application of science to the solution of managerial problems, which took shape during and in the decades immediately after WWII ("The New Paradigm", 1-29). Whereas Locke concentrated primarily on the development of Operations Research in industry and higher education including business schools, Khurana concentrated his story on how a group of NGO bureaucrats (mainly from the Ford Foundation), in league with business school deans and corporation CEOs carried through a thorough transformation of business study programs and research agendas in the top twenty business schools of America. Even the Harvard Business School, which pedagogically clung to the case method of instruction in order to draw lessons from real-world experience in real companies, had in research and faculty recruitment to align itself with the "New Paradigm." Elsewhere, at the University of Chicago Graduate School of Business, the Stanford Graduate School of Business, Columbia Graduate Business School, the University of California business schools at Berkeley and Los Angeles, the Carnegie Institute of Technology GSIA, the Wharton School, etc. it completely triumphed.

Khurana's study centers on the economists' take-over of the business schools, after economics had itself been transformed into a "decision science" through its absorption of operations research techniques (mainly linear programming and mathematical modeling) from scientists working on government contracts at the Rand Corporation. J.-C. Spender (private communication 1.09.2009) calls the move of economists into prominent if not dominant positions in business schools "an attempt to 'colonize' the social sciences – to elbow 'real people' out of the analysis and replace them by rational self-maximizers" -- those equipped

"with the 'rigorous' thinking, of which economists believed they were the 'high priests'." H. Thomas Johnson relates how this colonization in his field (management accounting) occurred:

"Managerial uses of accounting information…probably emanated from one primarily underlying cause – namely, the growing use of quantitative economic abstractions in national government planning during the 1940s. …It is not surprising, perhaps, that accounting professors in graduate business schools quickly saw an opportunity to capitalize on this belief in the merit of using economic statistics to run the national economy. After World War II, professors of accounting and finance in graduate business schools such as Harvard, Chicago, and Columbia started to show corporate executives how to use their accounting information to plan and control business activities in the same way that economists were showing government administrators how to use national accounting statistics to plan and control affairs of a national economy. In part this idea emanated from accounting professors who had received doctoral training in economics….But the idea also received impetus from accounting instructors, whose experience with wartime agencies had introduced them to advance use of operations research and mathematical economics…. Small wonder that immediately after World War II graduate business schools became immersed in ways to apply neo-classical economic models to accounting information in order to formulate a basis for decision making in business." (Johnson & Bröms: 57).

While "The New Paradigm" transformed business school faculties, in business and industry multi-divisional forms of corporate organization burgeoned. Although before 1940 most big firms organized managerial hierarchies along functional lines, by the 1920s a few "M" or multidivisional firms had already come into existence. After WWII "M" form corporate organization structures multiplied at home and abroad. The scholar who drew these developments to the attention of business historians, and transformed the subject of management studies (Alfred D. Chandler, Jr.) wrote a seminal article on the subject for a 1961 issue of the Business History Review, that is, just as "M" form structures consolidated their presence in the business world. (Chandler & Redlich). Thereafter, in a number of publications, including the Pulitzer-Prize winning *The Visible Hand* (1977), Chandler established a towering reputation not only within his field but outside – among economists, and businessmen. He contended that huge corporations escaped the fate of bigness, i.e., inefficiency, by establishing managerial hierarchies that used various managerial instruments to monitor operations and attain efficiency through cutting transaction costs. The special feature of the multidivisional corporation was the introduction of a top level of management to supervise divisions by using balance sheets and income statements to drive the activities of divisional managers.

Finance and controller functions gained ascendency at every level of management. So did the use of the new quantitative instruments that were being devised and taught in think tanks and business schools. Johnson observed:

> "Given this circumstance, successful managers believed they could make decisions without knowing the company's products, technologies, or customers. They had only to understand the intricacies of financial reporting. … [B]y the 1970s managers came primarily from the ranks of accountants and controllers, rather than from the ranks of engineers, designers, and marketers. [This new managerial class] moved frequently among companies without regard to the industry or markets they served. … A synergistic relationship developed between the management accounting taught in MBA programs and the practices emanating from corporate controllers' offices,

> imparting to management accounting a life of its own and shaping the way managers ran businesses." (Johnson and Bröms: 57).

Not everybody accepted the "New Paradigm" in management study and practice. Locke pointed this out in the second chapter of his 1989 book ("The New Paradigm Revisited:" 30-55). He focused on Operations Research, noting that OR professors in business schools (e.g., Russell Ackoff at Wharton) had by the late 1970s pronounced the attempt to use mathematical modeling and linear programming in decision-making a failure. (Locke, 1989; Ackoff, 1978). More importantly, doubters other than OR people began to gather in business schools proper. In 1987 H. Thomas Johnson, who had worked with Chandler to describe the financial accounting systems developed for "M" Form companies (Johnson, 1978), and Robert Kaplan, a professor in the Harvard Business School, published a co-authored book that questioned that very management accounting, which was then as now being taught in business schools*: Relevance Lost: The Rise and Fall of Management Accounting. The Harvard Business Review* dubbed the book one of the more significant published on business in the past seventy-five years. Johnson carried the attack on management accounting forward in two subsequent books: *Relevance Regained* (1992) and, with Anders Bröms, *Profit Beyond Measure* (2000), the latter of which dealt specifically with production process.

Meanwhile, students of economics started to revolt against their professors who had been educated in the New Paradigm. In June 2000, a group in Paris openly protested about the "knowledge censorship" that they experienced in their studies. They explained in a public manifesto:

> "Most of us have chosen to study economics so as to acquire a deep understanding of the economic phenomena with which the citizens of today are confronted. But the teaching that is offered, that is to say for the most part neoclassical theory or approaches derived from it, does not generally answer this expectation. Indeed, even when the theory legitimately detaches itself from contingencies in the first instance, it rarely carries out the necessary return to the facts. The empirical side (historical facts, functioning of institutions, and study of the behavior and strategies of the agents…) is almost nonexistent. Furthermore, this gap in the teaching, this disregard for concrete realities, poses an enormous problem for those who would like to render themselves useful to economic and social actors." (quoted in Fullbrook, 2003: 6)

The French rebels called neoclassic economics "autistic," meaning that it was cut off from the real world. They named their movement Autisme-Economie. Its manifesto of protest, published in Le Monde, gained the attention of the government, which promised investigations. The French rebellion led to a broad if thinly and unevenly spread international movement called Post-Autistic Economics that involves mainly professional economists, with their own review, this one, (originally called the *Post-Autistic Economics Review*, with over 11,000 subscribers.

Although these publications reveal serious dissent in academia about the New Paradigm, mainline US business schools mostly ignore them. They scarcely noticed the PAE movement. Perhaps that was inevitable, because the protesters failed to present a strong alternative study program in economics to which the disaffected could rally. They simply ask for "a pluralism of approaches adapted to the complexity of the objects and to the uncertainty surrounding most of the big questions in economics." (Fullbrook, 2003: 6). The feeble nature

of this statement indicates just how complete the "New Paradigm's" cognitive triumph has been. No strong competing paradigms appeared to which the protesters could adhere.

Nor did the criticism of quantitative control methods open the ears and minds of academics in the American citadel. Although Khurana thoroughly described the institutionalization of the New Paradigm in US business schools, he did not discuss the dissent. He ignored Locke's books, Johnson's books, and did not mention Post-Autistic Economics in his bibliography or text, even though the critiques had been around for years before he wrote. Unlike Locke in 1989, Khurana in 2008 did not write a chapter on the "New Paradigm Revisited." Rather in the book's last section he shifts emphasis to a criticism of New Investor Capitalism and the effects that Chicago School economics have had on moral education in business schools.

Johnson's books amounted to a detailed examination of the Financial Accounting system that Chandler considered an essential part of the successful functioning of management hierarchies, specifically in "M" form companies. The presence of Johnson's imposing critique, however, did not prevent the *Business History Review* from issuing a special retrospective on Chandler's work (Summer 2008), which amounted to hardly less than hagiography. None of the implicit or explicit criticism of Chandler work was discussed or cited in the volume -- this more than twenty years after Johnson and Kaplan declared the management accounting systems taught in US business schools and extant in US corporations irrelevant, and eight years after Johnson and Bröms had described viable and successful alternatives to U.S. management accounting quantitative methods. To issue a retrospective honoring the most significant business historian of the 20th century is not only acceptable but a proper thing for business historians to do. But a last chapter about Chandler and his critics should have been included to carry the appraisal of his life and work into the post-Chandlerian world.

Moreover, If Chandler's admirers could deal with his academic critics by simply ignoring them, Chandler's work could not escape the critique of reality in the shape of Japanese Management Systems (JMS). (Liker, Fruin, & Adler: 5-25)

B. Japanese management systems

One might think that the Japanese would have set to work immediately after World War II emulating US management and management educational models. Unlike the West Europeans, they did not increasingly accept the dominant American view that managers had become an indispensable functional caste in society possessed of particular knowledge and talent, who attend business schools to learn a corpus of managerially useful subjects.

To appreciate why, Westerns have to understand Japanese work ways, at first culturally, then in schools, then in the Japanese corporation.

1. Culture.

Scholars find the cooperative work practices employed in lean or "limited" manufacturing inherent in Japan's wetland rice cultivation. (see Johnson & Bröms: 101-3, for an important distinction between Japanese "limited" production systems that are called "lean" production systems in the United States but differ from them.) "Paddy cultivation," Sjhuji Hayashi argued, "encouraged group endeavors in village (*mura*) life. … The *mura* work is decided by the group as a whole. Farmers work so close together that cooperation becomes second nature. … When paddy fields are irrigated, water pumped in is allowed to flow by

gravity, the entire village field is worked at the same time. Even fertilizer had to be cooperatively applied because the water flow carries it everywhere (Hayashi: 68)." Dominique Turcq, using the same metaphor, notes that "Japanese culture is a culture of water. The study of the Japanese economy cannot be based on structures but on the flows existing between these structures." (Turcq: 55).

2. Schools

Other specialists observe how, despite changes in Japan brought on by Western emulation, group-process methods of work were taught in education. William K. Cummings noted that Japanese teachers spend an inordinate amount of time at the beginning of the school year just establishing order in the classroom, so that learning subsequently can take place. "Classroom order," Cummings affirmed, "is developed by having students cooperate in groups that prepare contributions for the rest of the class (Cummings: 150)." Classrooms break into groups, with teachers sitting by rather unobtrusively. Bright students work with slow learners whose performance they help raise to the group pace. Teachers and administrators do not discipline individuals, by, say, sending a pupil to the office, but let the group to which the problem-pupil belongs decide and administer "punishment." Assertive discipline is "antithetical" to the Japanese style of student management. Japanese teachers even at the preschool level defer discipline authority to pupils. Small work groups are held collectively responsible for homework assignments, so that if a group member does not do this work the others receive demerits. Groups are assigned tasks, sometimes too difficult to do, just to see how well they can handle them – they are stretched (Adams: 69).

Within the system moral education is taught by experience as well as by precept. The moral education furthers cooperative, family and community values. Its chief aim is process-not-results-oriented. Process involves a continuous change in time, a moving progressively from one point to another in a steady development towards a contemplated end. Process education stresses the procedure through which results are obtained, not the results themselves. W. Edwards Deming after working in Japan emphasized process as opposed to individual performance. He advocated making improvement in the process in which the individual works, not trying to eliminate individual "mistakes" (Deming, 1982, 1986). Kaoru Ishikara's famous fishbone diagrams used in Japanese manufacturing illustrate process orientation; they show the people involved how the entire process in which they work produces the results, so that they can learn to think of their work in terms of process improvement. "Japanese educators," Cummings remarked, "have never paid much attention to the innate abilities of learners. They have tended to assume that anybody can learn a task given a determined effort. Process modes of education emphasize the process, not individual abilities, and are perfectly suited to group cooperative forms of education." (Cummings: 150) Process moral education differs profoundly from moral instruction in America.

In other words, in a high-employee-dependent Japanese management system, management education takes place differently than in America. It occurs cooperatively in the primary, intermediate, and secondary school system not in business schools. The point: If people wish to organize a work process in which the employees participate in managing it and are not "managed" by a group external to it, what happens in the Japanese class room is management education.

At the tertiary level Japan's educational environment differed as well. Most rich and powerful NGOs and businessmen that wish to call on society to fulfill a need, usually find a way to achieve their ends. This happened in the US when rich businessmen endowed business schools in famous universities. After WWII Japanese employer associations repeatedly asked for more and better higher education in Japan. They asked for scientists,

engineers, computer specialists, for the creation of technical research facilities and for the establishment of closer cooperation between universities and industry. But the words "academic management education" seldom appeared in these requests. Since business and industrial spokesmen presented no real and persistent demand for this education no American style managerial education of the MBA business school type materialized (Locke, 1996).

This does not mean that Japanese firms did not want to hire educated people. They did, but they were much less interested in recruiting specialists in management subjects than people right out of college who had a liberal education in elite universities, because they did not intend to incorporate them into management systems like those being created in big US corporations.

3. In the firm

American M form corporations are pyramidal organizations; they hire people into a hierarchy of management and, when applicable, union approved job classification on the factory floor. In management the firms employ specialists at the entry and advanced levels in order to fill the manpower requirements listed in corporate organizational charts. The workforce and management consists of a web of skills that can be maintained from institutions of higher education, i.e., business schools, and from manpower markets inside (bulletin board open-job postings) or outside the firm, by fitting people into slots like interchangeable parts.

Johnson and Bröms despised these lifeless pyramidal structures imposed on work processes and managed by computer-oriented-production-control and expert-run cost accounting systems:

> "At first the abstract information compiled and transmitted by these computer systems merely supplemented the perspectives of managers who were already familiar with concrete details of the operations they managed, no matter how complicated and confused those operations became. Such individuals, prevalent in top management ranks before 1970 had a clear sense of the difference between 'the map' created by abstract computer calculations and "the territory'' that people inhabited in the workplace. Increasingly after 1970, however, managers lacking in shop floor experience or in engineering training, often trained in graduate business schools, came to dominate American and European manufacturing establishments. In their hands the "map was the territory." In other words, they considered reality to be the abstract quantitative models, the management accounting reports, and the computer scheduling algorithms…." (p. 23)

"Japanese companies…," James Abegglen and George Stalk, Jr. wrote, "differ significantly from the Western pattern. The essence of the Japanese company is the people who compose it. It does not, as the American firm, belong to the stockholders and the managers they employ to control it, but it is under the control of the people who work in it, who pay limited attention to stockholder's wishes. The company personnel, including directors who are themselves life-time employees and executives of the company, are very much part of the company." (Abegglen & Stalk, 1988: 184). In Japanese corporations core employees, as distinguished from temporary employees, are not recruited as skills but as people whose chief qualification must be a capacity to assimilate quickly the corporate work culture and production systems. Recruited employees are assumed to have no firm-and-job-specific skills. That is why firms spend so much money on in-house training and engage in job rotation and multi-skilling.

They allot great resources to core employee training because they expect them to stay with the firm. Upper level positions when they fall vacant are not replenished from an external job market but from within the firm. To separate out a special group called management, that is dedicated exclusively to serving its own interests (separate from the employees) and the interests of those who do not work in the firm (the stockholders in large public corporations), and who have developed financial-results-oriented management techniques to do so, does not conform to the traditional Japanese conception of the firm.

However, to say that American corporations and Japanese firms developed different management systems does not prove that one was more efficient than the other, or that even if they desired to do so American firms could import Japanese Management Systems and if they tried could succeed better with them in their endeavor than with their own, or that Japanese firms needed to transfer their management systems to their transplants in America in order to operate successfully in the US management context. Two factors, the technology involved in production and the managerial wherewithal of U.S. and Japanese firms, determined the desirability and the extent to which JMS could be imported into and successfully operated in the United States.

a. Limited transfer: The Japanese consumer electronics industry

Martin Kenney reports that the first Japanese industrial success story occurred in consumer electronics. In Japan, Hitashi, Toshiba, JVC, Matsushita, Sanyo, Sharp, and Sony operated factories with the same JMS features as other Japanese firms. (Kenney, 1999: 262). Surveys in the 1990s reported that consumer electronic product firms in Japan had created seniority based salary schedules, long-term employment, and enterprise unions. In production management they used JIT, had strong commitments to training in general and regularly used on-the-job training through job rotation in particular (Jenkins & Florida, 1999: 264-65). They enjoyed very low-labor turnovers and worked in groups and teams throughout the industry. Front line workers worked in job design and control, which in the US would have been "the purview of management and other professional employees." (Jenkins & Florida, 1999: 264-65). And regular male workers were involved in "setting standard process times, spearheading operations improvement, and conducting performance evaluations," jobs reserved for engineers and managers in U.S. firms. (Ibid., 263). The first significant transplants to America happened in this industry with the establishment of Japanese television assembly factories in America during the 1970s. By "1998 Japanese companies owned all the remaining television assembly factories operating in the United States." (Kenney, 1999: 257).

If Alfred D. Chandler, Jr.'s admiration of management at GM is out of place in the late 20th century, his general insight that different technologies produce different strategies and managerial structure is still correct. Although domestic Japanese consumer electronic plants and Japanese automobile factories used similar management systems, technical specs during production were different. Kenney's study, comparing Japanese television assembly transplants to Japanese automobile transplants, pointed out that for technical reasons "automobile manufacturing spent less on R&D than consumer electronics, had lower engineer to operator ratios, had lower automation, [and] used many more parts in assembly (30,000 to 40,000 to less than 2,000) in much longer assembly lines (1 kilometer to 100 meters). Assembly time in an automobile factory per unit ran from 10-20 hours compared to 27 minutes in a television assembly plant. The role of operators was much greater in automobile assembly than in television production; automobile manufacturing required more on-the-job training and more interactive work. Automobile production technology needed employees

with more interrelation skills. (Kenney: 273). To achieve results Japanese automobile transplants had to absorb more of the JMS from home than Japanese transplants in consumer electronics – and they did. Kenney stated:

> "the television transplants…all operated in a style far closer to that of U.S. factories than of Japanese factories. Even the companies, such as Sanyo, that consciously tried to introduce a Japanese-like system soon retreated and accepted the U.S. system. …. (p. 286) U.S. television assembly transplants diverged far more from their respective sister plants in Japan than auto assembly transplants did from theirs. Not only have they diverged in terms of management and production systems, but they have differed in the apparent eagerness or ability on the part of management to facilitate operator-and-factory-based knowledge creation." (p, 287).

b. Limited transfer: The Big Three firms

Twenty-five years after Japanese firms began transplant operations in North America, just before the bankruptcy of two of the Big Three and near collapse of the other in 2008-2009, their performance looked like this (Table 1).

Table 1: 2006. Source: Schifferes: 5

	Sales (units)	Sales ($bn)	Profit ($bn)	Market Value ($bn)	Workforce
GM	8.3m	191	-10.9	20	335.000
Toyota	8.2m	176	+12.5	208	285.000
Ford	6.6m	153	-12.7	16	300.000
Volkswagen	5.2m	118	+5.2	43	344.000
Daimler/Chrysler	4.8m	185	-1.7*	65	382.000

*The losses occurred at Chrysler .

The fact that Table I shows dismal results indicates that US firms never successfully met the competitive challenge. Why?

It could not be from ignorance about Japanese Management Systems (JMS). Ronald Dore first drew the West's attention to Japanese manufacturing in 1973. Robert Lutz, head of Ford's operations in Europe and now a Vice-President at GM, sent scores of his people to Japan in 1979 to study production methods. GM entered into a joint-agreement with Toyota (New United Motor Manufacturing, NUMMI) in 1984 in order to introduce already acknowledged superior Toyota production methods into its operations at a plant in Fremont, California. GM managers trained at NUMMI brought lean production to Opel, especially in its new greenfield site in Eisenach, Germany. Studies about Japanese lean production

multiplied throughout the 1980s (700 articles were published in the US on JIT between 1985 and 1990), culminating in the universally touted book by J.F. Womack, D.T. Jones, and D. Roos, *The Machine That Changed the World* (1990). The studies about efforts to transfer JMS to the US continued to blossom in the 1990s, after the Japanese economy quit growing and Americans could stop admiring them. (See a collection of articles in Jeffrey K. Liker, W. Mark Fruin and Paul S. Adler, eds. *Remade in America: Transplanting & Transforming Japanese Management Systems*,1999, published by Oxford University Press in its Japan Business and Economics Series.

c. Barriers to transfer

Shorage of time

If alarmed U.S. automobile manufacturers learned a lot about JMS, they, paradoxically, delayed implementation. Incredulous at first, the world's greatest automobile manufacturers found it hard to believe c. 1980 that they had anything to learn from the Japanese about how to design and manufacture automobiles for Americans. They found every reason to explain their problems except inferior shop floor production and corporate governance systems [cheap labor in Japan, expensive labor in America, government CAFÉ standards (that US firms actually avoided), the unions, high overhead costs caused by generous medical insurance benefits and retirement plans (that US firms were rapidly cutting)].

Almost five hundred years ago, Niccolo Machiavelli wrote this about change:

> "There is nothing more difficult to carry out, nor more doubtful of success, nor more dangerous to handle than to initiate a new order of things. For the reformer has enemies in all who profit from the old order, and only lukewarm defenders in all those who would profit by the new order. This lukewarmness arises partly from fear of their adversaries, who have the law in their favor, and partly from the incredulity of mankind who do not truly believe in anything new until they have had actual experience of it. (The Prince, 1513)

Like most men and women being driven relentlessly into a corner, Big Three automakers temporized. They "knew about Japanese Production Systems for at least fifteen years before they made serious efforts at…implementation" of JMS (Liker, Fruin,& Adler: 10).

Barriers posed by Big Three management structures and practices.

The very structure and practice of US automobile governance systems that JMS were to replace frustrated the replacement.

Workforce resistance. J.-C. Spender states that the automobile industry "has been consistently successful at achieving dominance over its work force." (Spender: 136). Nonetheless, blue collar workers in the American system of industrial relations fought hard to protect their interests. The adversarial relationship was part of firm governance.

In the hard struggles between management and labor in the US automobile industry, unions hammered out collective bargaining agreements, protecting job classifications, with different skills and pay gradients on the factory floor (on the average 45 job classifications per plant in 1989). (Pil & MacDuffie: 43).

This affected implementation of job rotation, multiple skilling, and group work practices that were necessary to a well-functioning work process modeled on JMS. By contrast, Japanese home plants had on average five job classification for production workers and five for maintenance workers. Japanese transplants in the US had only one job classification for production workers and one or two for maintenance workers. Because workers and their unions were scared opponents of change, US manufacturers only managed to reduce the average number of job classifications on factory floors from 45 for production workers in 1989 to 37 in 1994 (Adler: 89).

Nor did the American firms eliminate status distinctions between blue and white collar workers in their plants, which disappeared in Japan after World War II. The elimination of blue-white-collar differentiation along with so many job skill classifications is considered to be essential to well-functioning JMS whose essence is solidarity and common purpose.

Resistance in management. Beyond blue collars, opposition to JMS arose on-and-off the factory floor primarily within the ranks of American automobile management itself. For managers, JMS transfer raised bread and butter issues.

In the US system managers held power and were (are) reluctant to relinquish it. Many of the agency, property rights, and transaction costs models used in Big Three governance did (do) not fit with the JMS wherein management and unions are not determined adversaries, and asymmetries between managers and employees in terms of voice, rights, and benefits are significantly muted. (Liker, Fruin, & Adler: 10).

JIT production methods were "dramatically opposed to the economic order and guiding principles of American manufacturing and to reliance on technologies such as MRP II for shop floor scheduling." (Liker, Fruin, & Adler: 10). In America "only engineering experts could develop scientifically accurate work methods" (Ibid). In America job design and quality control were traditionally the tasks of management.

In the JMS, on the other hand, engineers have always worked closely with line workers in running the production process. Japanese supervisors know all the jobs in their jurisdictions in detail and are generally selected as supervisors because they were the best operators. The adoption of JMS required a plant environment significantly "less autocratic and more participative than has been the norm on Big Three factory floors (Brannen, Liker, Fruin: 144).

In Big Three Middle Management there was not only a "lukewarmness" in will to effect this change but a lack of capacity. American managers did not have a lot of experience on the floor and, accordingly, had not traditionally contributed much to shop floor efficiency through hands-on work with line employees. But these were just the talents needed to transfer JMS to US factories.

Finally, management, separated from the work force in U.S. automobile firms, was accustomed to using and hearing a language of command. Philippe d'Iribarne observed that Classical American Management…"operates on the following behavioral principles: to define precisely and explicitly the responsibilities of each person, formulate his/her objectives clearly, give the person freedom in the choice of methods for meeting objectives, evaluate the results carefully, and reward or sanction the person according to his/her successes or failures." (Iribarne: 131). These principles call for a management where a "high degree of formalization, standardization, and centralization" reigns, where managers possess good conflict-resolution skills, "good top-down decision making abilities," "good problem solving analytical skills, and a capacity to devise good externally imposed evaluation systems" This is Taylorism *par excellence*.

JMS required group-oriented consensus-making, the cultivation of relational skills, and tacit learning, the kind that Ikujiro Nonaka and Hirotake Takeuchi describe in their 1995 book on "The Knowledge-Creating Company." Tacit knowledge is difficult to transfer and imbibe; especially when the recipients are Americans who are use to speaking explicitly in directives, and do not spend time socially with co-workers. To the extent that the JMS required American managers to impart tacit knowledge, the glue of the Japanese system, into American owned companies, transfer could only partially succeed.

Restraints of finance.

Another factor limiting the transfer of JMS to the Big Three is the greater financial environment in which management in the US firms operated. Although American automobile makers could not control this environment, the firms mostly thrived in it for seventy-five years. They raised huge amounts of capital from banks and from the sale of stocks and bonds brokered in Wall Street's financial firms. Events in late 20th century finance, however, proved detrimental.

One was the revolt of the stockholders against the executive boards and top management that accompanied declining profits. Suffering from negative or limited incomes over multiple years, US firms were often cash-strapped compared to their cash-flush Japanese rivals. Boards resorted to cutting costs (investments in R&D, cuts in workers' wages and benefits, reductions of dividends) that led to serious long-term declines in firms' market value (See Table 1) and a precipitous fall in the prices of company stocks.

This provoked stockholders discontent in favor of greater returns on their investments. As proprietary firms, that is, firms where owners elect board members and major owners sit on them, the stockholders could give voice to their concerns. At General Motors, for example, the billionaire outsider Kirk Kerkorian, who sat on the board but never worked in the firm, favored harsh restructuring to increase payouts to investors, including the sale of high-value company assets, like GMAC, which could have brought a windfall profit to a stockholder like Kerkorian, but could have also left the company without the wherewithal in the future to finance the sale of its vehicles or the cash to implement the transfer of JMS. The financial system is currently driving the dismantlement of the companies through the sell-off of their high value assets piece by piece.

Considering the existential nature of the threat, U.S. automobile firms inadequately assimilated JMS. As Liker, Fruin, and Adler put it in 1999 (p. 28):

> "The American companies that adopt Japanese practice, do not go quite so far and do not get quite the performance [as Japanese transplants]. The Big Three do not put the same effort into training and socializing,…and do not reach performance levels of their Japanese competitors in Japan or North America."

d. Maximum transfer: Japanese transplants in America

Japanese Transplants have not suffered recently like the Big Three in their greater institutional environment at home or in North America. They returned steady profits; they received subsidies from local communities to entice them to build plants located on greenfield sites; and they operated in a more favorable home financial environment. In Japanese firms, Joann Müller reminds us, "workers and the company itself are the de facto beneficiary owners" (Müller:1). Automobile stock is primarily in the hands of customer or supplier firms with which the automobile firms do business. These corporate stockholders do not much care about high dividends or share prices (they rarely sell the stock). They profit as companies

primarily through expanded business opportunities with the automobile company in which they hold stock. Since major stockholders are not interested particularly in high stock prices or dividends, Japanese automobile management policymakers can stress the long-term expansion of market share, which is essential to globalizing lean production, and re-invest profits into improved competence rather than pay out higher dividends. And they can tap funds to carry out their plans from banks in their industrial group (kereitsu) if the cash accumulated through years of very profitable operations is insufficient for planned expansions.

In America, moreover, Japanese transplants better cultivate fruitful relations with their suppliers in order to facilitate the transfer of JMS.

One example: MacDuffie and Helper's study of Honda's efforts, compared to Ford's, to work up an efficient supply chain. A quality expert at an American supplier firm that works with both Honda and Ford commented:

> "Honda cares about making the part fit the car, while Ford cares about making the part fit the blueprint. During product launch, Honda takes parts as soon as they are made and runs back to try them on the car. Then they tell us to change this, change that. Ford usually isn't here during our trials. They just want to be sure that we are meeting the spec. If there is a problem, they eventually issue an engineering change. But at Honda, the change happens in a matter of days. At first we thought they were nuts. But theirs is a great way to do business. You get what you want – a part that works on the vehicle – right away. Everything else ---like whether the blueprint is up-to-date – is secondary. Initially, it was incredibly frustrating because Honda was so detail-oriented and wanted responses from us immediately. But I find they are almost always right." (Quoted in MacDuffie & Helper: 168).

Japanese firms customarily include workers on teams involved in the transfer of technology. Even before WWII when Japanese sought to learn about scientific management in America, they included workers in the learning process because they knew that they would have to work closely with them in implementation. Okiie Yamashita, who chaired the Production Management Committee in 1938, observed that:

> "workers {in Japan} were accepted as co-researchers in a work study [about the transfer of Taylorism to Japan]." In the selection of survey participants, it was considered necessary not to choose just "first class men," i.e., management people, but to choose those who would be readily accepted by co-workers. "This was, it was understood, because there was a need to see to it that the results of work study would be acceptable to a broad segment of workers [who would work with the managers to implement it]." Such sensitivity to the views of coworkers about the transfer of scientific management to Japan was "in line with the reality of Japanese industry." (Yamashita, Quoted in Okuda, 1989, 195-96).

Japanese automobile transplants worked with liaison teams in "sister" plants at home to which the Americans hired in the transplants were sent to learn about the company's production management system, and from which expatriates were sent to the transplant to participate in the transfer of technology and work processes. Japanese transplants have been careful to eschew American management culture, since to the Japanese the ethos of US industrial relations is unsuitable for JMS. Japanese transplant managers interviewed in the 1990s criticized American managers for their lack of "commitment" and their abuse of power. They complain about the US managers' weak loyalty to their companies, about their high salary claims, and about their inability to forget "Fordist" modes of command-management. Martin Kenney and Richard Florida in their book about Japanese transplants

emphasized this point. “In nearly every plant we visited, Japanese managers voiced concern about the manner by which American managers operate. An executive at Honda of America told us that his greatest problem was teaching American managers the Honda way” (Kenney and Florida: 287).

Fritz K. Pil and John Paul MacDuffie concluded from their study of Japanese automobile transplants “that [through JMS their performances] are approaching those of their sister plants in Japan and thus show that national, cultural, and institutional boundaries, are not insurmountable obstacles.” (Pil & MacDuffie, 1999: 68; Also, MacDuffie & Helper, 1997).

C. H. Thomas Johnson’s analysis of the Toyota Production System (TPS) at Georgetown

In order to more clearly explain that the Japanese opened a new era in the management of complex process manufacturing, the focus now narrows to one plant: Toyota’s first greenfield US facility located in Georgetown, Kentucky. To avoid disputes about how much the contents of TPS differ from JMS (Liker, Fruin, & Adler: 4-6) let it simply be stated that they are quite similar and both “refer to the family of production, factory, and corporate management practices found in world-class Japanese firms.” (p. 4) In Johnson’s view, moreover, TPS at Georgetown does not warrant such comparisons, because he considers it to be an archetypal process-management system beyond nationalist nomenclature that has replaced, on efficiency and moral grounds, a once triumphant American system of managerialism in the automobile industry, and elsewhere.

Like Chandler, Johnson thinks systemically, but whereas Chandler contemplated how strategy affects management structures and practice, Johnson and Toyota think about how relationships in the work process determine efficiency.

The issue here is the mass production of automobiles. In America the pace setter, Henry Ford, erected in the early 1920s a showcase plant at the River Rouge to minimize waste and maximize output and profits through a closely coordinated production system. “Ford’s River Rouge plant,” in Johnson’s words,:

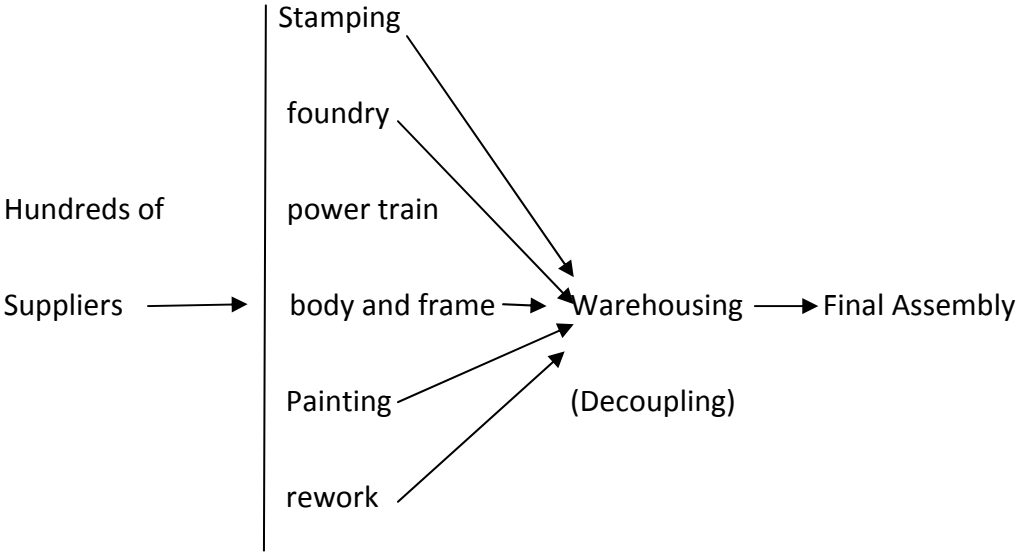
> “worked like clockwork to make a standardized product: [He] spoke proudly of turning iron ore, silica, and latex into finished vehicles in less than three and a half days, at the lowest cost in the world (Johnson, 1992: 37). The continuous, linked production in the River Rouge factory required that every process operate virtually at the same balanced rate, which could best be achieved by making one uniform product. (Johnson, 1992: 38).

But after WWII customers wanted a variety of products. So American engineers and production managers, in order to cope with the complexity of assembling a variety of vehicles in one plant…”decoupled the line,” which “allowed different processes to operate at independent rates.” They created inventory buffers to handle the imbalances appearing between the decoupled processes. “Henry Ford did not require inventory buffers at the River Rouge in the early 1920s. Most American manufacturing plants could not operate without such buffers by the end of the 1950s” (Johnson, 1992: 38).

Figure 1 portrays how the Big Three produced variety in a decoupled, long-run batch manufacturing process. After the initial production runs the semi-finished products were warehoused until they were needed for the batch produced vehicles that were finished and sent on to the dealers. The decoupling of production flows to obtain variety required the

creation of a management Information system that could coordinate overall the now decoupled production process.

Figure 1



A Management Information System outside the direct work was charged with planning, production programming, factory forecasting, financial reporting, standard cost budgeting, production target setting, etc.)

Through the costs of warehousing, costs of personnel in Information management (whose numbers could exceed the workers and managers directly involved in work process), and the cost of equipment that sustained information management flows (mainframe computers and supplies) "overhead" costs in a Decoupled Batch Manufacturing Plant mushroomed. Management sought to pay for these "overheads" by utilizing the system of quantitative control and reporting measures it had devised, imposed and operated in an Information System outside the work process to speed up throughput in each detached production segment, thereby supposedly obtaining huge savings from volume production. However, total costs, driven up by rising "overhead," invariably increased. The ostensible "savings" was reduced cost per unit of output as output volume rose faster than total cost.

History is replete with irony; at the time Alfred D.Chandler Jr.'s big, attractive idea was formulated, it had in process manufacturing become managerially anachronistic; few,however, perceived it in America. Chandler and the US system of management education (and American management experience itself) had indoctrinated people in the West with the belief that managers are a special caste within society, verging on a profession (which they had never been) that acquired knowledge and skills about the management task in MBA courses. A vast literature about the growth of management and management

education, on both sides of the Atlantic, bases its treatment of the expansion of modern management and management education on these assumptions.

Johnson refers to Big Three management in these "decoupled" production plants as "Management by Results.' Headquarters sets financial targets for each part of the corporation, then compels lower managers to meet them. He refers to Toyota management of the work process as Management by Means (Johnson & Bröms: Chapters 2 & 3).

Just as Chandler thought Management by Results is achieved with the tools of science – through the quantification of business studies and management methods, so does Johnson believe that Management by Means at Toyota is grounded in science. But the science is not Chandler's. Johnson's reflections on work process efficiency have in fact been heavily influenced by W. Edwards Deming (Deming, 1982, 1986) and by work in modern physics and biology (see, Fritjof Capra, 1982, Locke, 1996) that has epistemologically undermined the Cartesian-Newtonian world view, upon which the "New Paradigm" in Management studies (with its emphasis on measurement and qualification) rests. Out went measurement, in came references to the three principles that characterize the efficient "operation of all natural living systems in the universe (Johnson & Bröms: 73):

> 1. Self-Organization: Creative energy continually and spontaneously materializing in self-organizing forms that strive to maintain their unique self-identity. ….
>
> 2. Interdependence: Interdependent natural systems interacting with each other through a web of relationships that connects everything in the universe, relationships, which express the essential nature of reality (everything exists 'in the context of something else')
>
> 3. Diversity: resulting from the continual interaction of unique identities always related to one another."

Johnson does not claim that Toyota is a "living natural system," but he does claim that the TPS is isomorphic to one. In the TPS management does not control the process from outside the work taking place on the line. Control is systemic. He remarked, after thoroughly studying the Georgetown Kentucky Plant, that Toyota "does not rely on internal shop floor control systems, such as MRP (Material Requirements Planning) to manage the flow of work in production. Toyota does not drive operations with statistical controls, standard cost variance, or any similar information from accounting or production control sources, which is standard procedure in Big Three Plants." (p. 105). The financial executive at Toyota Kentucky says, Johnson reported, that 'the company never had nor does it intend to have a standard cost accounting system that provides cost and variance information for controlling operations." (p. 110). Then, how was production controlled? The answer: As in a self-organizing, interdependent, diverse living natural system, by the TPS's work process itself – "real time as part of direct work that is done to make every vehicle." (p. 111).

Ford's River Rouge plant influenced Toyota's efforts to achieve the benefits of nonstop, continuous flow volume production. To satisfy demand after WWII the company had to inject product variety into Ford's single product line. And to introduce variety into a continuous flow production plant, Toyota had to avoid the long down times needed to change, say stamping dies for different models and the stockpiling on the line of the huge number of parts that variety production required but a continuous flow process could not tolerate.

There is no need to describe the now famous techniques that Toyota incorporated into its production line to achieve steady cuts in the waste of material and time that permitted continuous flow production to include variety. Suffice it simply to name some of them found at

the Georgetown facility: Takt time production (so many seconds per vehicle), standardized work, Jidoka (the Andon stop cord), Just in Time delivery from suppliers in and outside the factory (only the necessary product, at the necessary time, in the necessary quantities), Heijunka (level sequencing of production), continuous improvement, Total Quality Control, and Kanban.

In a complex continuous flow process, to use these techniques efficiently did not require honing individual skills but cultivating relationships, through group work, job rotation, and learning of work standards, so that the employees on line could readily recognize bad work, poor quality and defective products and quickly call for help during the production process itself in order to correct abnormalities and assure quality.

So it is the collective motivation and organizational learning capacity of people running the techniques not the techniques proper that matters. For instance, at Toyota's plant in Georgetown workers on the assembly lines pull the andon cord thousands of time a week in order to signal for a supervisor's assistance when they spot a problem. In contrast, workers at Ford's truck factory in Dearborn, Michigan, which installed Toyota's Andon Stop Cord, (ostensibly to let the workers on the line as in Georgetown improve quality and eliminate defects), "pull the cord only twice a week – the legacy of generations of mistrust between shop-floor workers and managers" (Schifferes: 1). Trust is based on a moral order in the firm, which resides in the inner self of employees. Such a moral order is absent in the Big Three because management-devised control and surveillance systems typical of managerialism left a legacy of fear and conflict between management and employees in factories. On-line workers at Ford also do not pull the cord because they are used to outside maintenance people and managers correcting defects after the fact. They are not schooled in including recognition of defects as part of their work repertoire, do not know process work standards sufficiently to be able quickly to identify system faults, and fear being blamed personally for the defect to which pulling the cord draws attention.

Johnson and Bröms refer to operations in the TPS as Management by Means, wherein management does not concentrate on the financial results (as in the Big Three) but wherein all plant employees work together to perfect the means (the production process) that creates the results. If the means are in order, the results are automatically excellent.

They juxtaposed a list of phrases that contrast behavioral traits suited to Big Three manufacturing and the Toyota Production System (pp. 186-87):

Big Three	TPS
The "I" stands alone	Relationships are reality
Control the result	Nuture relationships
Follow finance-driven rules	Master life-oriented practices
Manipulate output to control costs	Provide output as needed on time
Increase speed of work	Change how work is done
Specialize and decouple processes	Enhance continuous flow
An individual is the cause: blame	Mutual interaction is the cause: reflect

Was this management? Not in the Chandlerian sense or in the sense understood by purveyors of the "New Paradigm" in management education. But Management by Means produced much better results.

C. Conclusion

Robert Cole wrote in 1999 that about 1980 "enormous uncertainty gripped" top US managers (Cole: 203). They feared that the Japanese "had developed a large competitive advantage" in manufacturing. What could explain the cause of the problem facing American industry Cole had them ask.

"Was it quality?"

"Was it productivity?"

"Was it low-paid workers, and/or cheap capital?"

"Was it unfair Japanese government support for their competitors (the Japanese)?"

"Was it a combination of factors?" (p.203)

It is instructive that none of the questions that Cole said top managers asked in 1980, nor the topics that Cole suggested himself in 1999, included "Was it systemic U.S. management failure?" Most Americans on Main Street, in leadership positions, or in mainline business schools would not have answered "Yes," then or today. But this essay about "managerialism" in the Big Three has answered in the affirmative.

Not that the distress the Big Three faced in 2008-09 was entirely the managers' fault. In "normal" times, automakers with serious money problems could have turned to Wall Street to find the cash needed to fund continuing operations and probably have gotten it. But the world-wide collapse and subsequent paralysis of the financial system created exceptional times, which prevented top Big Three management from appealing successfully to shaken financial institutions for the money to get them through a severe liquidity crisis. In the long run, however, the financial crisis of 2008-09 was just a final episode. The Big Three's fall really resulted from managers' failure to meet the JMS challenge at factory floor and corporate levels, and completely end the "Fordist" production regime. The source of that failure was the systemic inadequacies of U. S. managerialism that have been described here. Imprisoned in a management system in which they were the chief beneficiaries, trained to it in their skills, predilections, and modes of thinking, and lacking the skills and aptitudes necessary to running JMS, Big Three management was too lukewarm about the need to pursue the implementation of JMS in their own firms to carry transfer through energetically and effectively.

Of course, U.S. companies survive and thrive because managerialism is not co-extensive with American management. At the time U.S. firms failed to match Japanese managed transplants in transferring JMS in traditional staple U. S. industries (automobiles, steel, rubber, consumer electronics, machine tools, etc.), American entrepreneurs, participating in intricate webs of entrepreneurship located in complex regional habitats, carried through a new industrial revolution in Information Technology that spawned another generation of icon US firms (Microsoft, Intel, Oracle, Hewlett-Packard, etc.) (Saxanian, 1994, Best, 2001, Locke & Schöne, 2004). Once again, it amounted to a case of new technologies generating different managerial strategies and structures.

But even in these new technology businesses, failure to give precedence to "managing the means," as opposed to chasing Wall Street financial targets, has proved costly. Within US firms nothing entirely escapes the heritage of managerialism. As start-ups in IT mature, the entrepreneurial pioneers are sloughed off in boardrooms, to be replaced by MBA managers trained in the values and techniques of the New Paradigm. Even where quite successful U.S. IT companies have borrowed JMS techniques the habits of managerialism

have frustrated the borrowing. For example, Hewlett-Packard management, operating by MBO, a results oriented system, refused to transfer quality assessment techniques (*boshin* planning), that had crystallized in Japan in the 1970s and within HP's own Japanese subsidiary, until the 1990s, despite the subsidiary's urgings, because HP U.S. managers evaluated the implementation of the system in terms of Management by Results accounting, i. e., "financial performance." (Cole, 1999: 226).

Finally, the behavior and thinking of managerialism is responsible for the recent financial debacle that brought a cascade of firms including Two of the Big Three down. Unless the mathematicians in business schools had devised the financial instruments, "the abstract quantitative models," the fruit of "The New Paradigm," that bankers and brokers leveraged and sold to investors world-wide, they could not have exposed their institutions to such systemic risk and failure. Unless greedy brokers and top managers separated their interests from those of their clients and the general public (which is managerialism), they would not have pressed the sale of the mathematically contrived securities so relentlessly.

References

Abegglen, J. and Stalk, Jr., G (1988). Kaisha: The Japanese Corporation. New York: Basic Books, Harper Collines.

Ackoff, R. (1979). "The Future of Operational Research is Past," Journal of Operational Research Quarterly: 30, 93-104.

Adams, J. (1995). The British Disease' and the 'Japanization' of British Industry: Conjuncture or Continuity in World History (Master's Thesis in History, University of Hawaii at Manoa, 1995).

Adler, P. S. (1999). "Hybridization: Human Resource Management at Two Toyota Transplants" in Remade in America. 75-116.

Aoki, M. (1990). Towards an Economic Model of the Japanese Firm, *Journal of Economic Literature,* 28, 1-27.

Best, M. H. (2001). The New Competitive Advantage: The Renewal of American Industry. Oxford: Oxford University Press.

Brannen, M. Y., Liker, J. K., and Fruin, M. (1999). "Recontextualization and Factory-to-Factory Knowledge Transfer from Japan to the United States: The Case of NSK." Remade in America, 117-153.

Capra, F. (1982). The Turning Point: Science, Society and the Rising Culture. New York: Simon & Schuster.

Chandler, Alfred D. Jr. (1977) The Visible Hand: The Managerial Revolution in American Business. Cambridge, Mass.: Harvard University Press.

Chandler, Alfred D. Jr., and Redlich, Fritz (1961). "Recent Developments in American Business Administration and their Conceptualization." Business History Review: (Summer 1961); 1-27.

Cole, R. E. (1999). "Japanese Quality Technology: Transferred and Transformed at Hewlett-Packard." In Remade in America, 202-31.

Cummings, W.K. (1990). *Education and Equality in Japan.* Princeton: Princeton University Press.

Deming, W. E. (1982). Quality, Productivity, and Competitive Position. Boston: MIT CAES.

Deming, W. E. (1986). *Out of the Crisis.* Boston: MIT CAES.

Fruin, M. W. and Nishiguichi, T (1993). Supplying the Toyota Production System: Intercorporate Organization Evolution and Supplier Subsystems, in B. Kogut (Ed) Country Competitiveness: Technology and the Organizing of Work. New York: Oxford University Press, 225-46.

Fullbrook, E. (2006), "Economics and Neoliberalism," in H. Hassan, *After Blair: Politics After The New Labour Decade.* London: Lawrence & Wishart.

Fullbrook, E. (ed.) (2003). *The Crisis in Economics: The Post-Autistic Economics Movement – The first 600 days*. London and New York: Routledge.

Hayashi, S. (1988). Culture and Management in Ja*pan.* Tokyo: University of Tokyo Press.

Iribarne, P. d' (1989). La logique de l'honneur: Gestion des entreprises et traditions nationales. Paris: Seuil.

Ishikawa, K (1985). *What is Total Quality Control? The Japanese Way,* trans. David J. Lu. Englewood Cliffs: Prentice-Hall.

Jenkins, D. and Florida, R. (1999). "Work System Innovation Among Japanese Transplants in the United States." In Remade in America. 331-60.

Johnson, H. T. (1978). "Management Accounting in an Early Multidivisional Organization: General Motors in the 1920s." Business History Review: 52:4 (Winter 1978), 490-513.

Johnson, H.T. (1992). *Relevance Regained: From Top-Down Control to Bottom-Up Empowerment.* New York: Free Press.

Johnson, H. T. and Bröms, A. (2000). Profit Beyond Measure: Extraordinary Results through Attention to Process and People. Boston: Nicolas Breakley Publishing.

Johnson, H. T. and Kaplan, R. S. (1987). Revelance Lost: The Rise and Fall of Management Accounting. Boston: Harvard University Press.

Kenney, K. (1999). "Transplantation: A Comparison of Japanese Television Assembly Plants in Japan and the United States." Remade in America, 256-93.

Kenney, M. & Florida, R. (1993). Beyond Mass Production: The Japanese System and its Transfer to the U.S. New York: Oxford University Press.

Khurana, R (2007). *From Higher Aims to Hired Hands: The Social Transformation of American Business Schools and the Unfulfilled Promise of Management as a Profession.* Princeton University Press.

Liker, J. K., Fruin, W. M. and Adler, P.S., eds. (1999). Remade in America: Transplanting & Transforming Japanese Management Systems. Oxford: Oxford University Press.

Liker, J. K., Fruin, W. M. and Adler, P. S. (1999). "Bringing Japanese Management Systems to the United States: Transplantation or Transformation? In Remade in America, 3-38.

Locke, R. R. (1989). Management and Higher Education Since 1940: The Influence of America and Japan on West Germany, Great Britain, and France. Cambridge: Cambridge University Press.

Locke, R.R. (1996). The Collapse of the American Management Mystique. Oxford: Oxford University Press.

Locke, R. R. and Schöne, K (2004). The Entrepreneurial Shift: Americanization in European High-Technology Management Education. Cambridge University Press.

MacDuffie, J. P. and Helper, S. (1999). "Creating Lean Suppliers: Diffusing Lean Production through the Supply Chain." Remade in America. 154-202.

Müller, J. (2002). Autos: A New Industry. BusinessWeek. July 15, 2002.

Nonaka, I. and Takeuchi, H. (1995). The Knowledge-Creating Company: How Japanese Companies Create the Dynamics of Innovation. New York: Oxford University Press.

Pil, F. K. and MacDuffie, J. P. (1999). "Transferring Competitive Advantage Across Borders: A Study of Japanese Auto Transplants in North America." In Remade in America. 39-74.

Rother, M. (2010). Toyota Kata. New York: McGraw-Hill.

Saxenian, A. (1994). Regional Advantage: Culture and Competition in Silicon Valley and Route 128. Cambridge, Mass.: Harvard University Press.

Schifferes, S. (2007). The Decline of Detroit. *Globalisation Reporter, BBC News*, Jul. 11.

Spender, J.-C. (2007). "Structural Adustments and Conflicting Recipes in the US Automobile Industry." In T. Hamalainen and Heiskala, R. Social Innovations, Institutional Change and Economic Performance. Cheltenham: Edward Elgar. 123-158.

Turcq, D. (1992). *L'Inévitable partenaire japonais.* Paris: Fayard.

Womack, J.P., Jones, D.T., and Roos, D. (1990). *The* Machine that Changed the World*.* New York: Rawson Associates.

Yamashita, Okiie (1938). Comment quoting him by Kenja Okuda, in paper by Andrew Gordon, "Araki Toichiro and the Shaping of Labor Management," in Tsunehiko Yui and Keiichiro Nakagawa, eds., Japanese Management in Historical Perspective. Tokyo: University of Tokyo Press, 1989.

COMMENTS:
Readers may **post comments** on this paper at http://rwer.wordpress.com/comments-on-issue-no-51-2/managerialism-and-the-demise-of-the-big-three/

SUGGESTED CITATION:
Robert R Locke ,"Managerialism and the Demise of the Big Three", *real-world economics review*, issue no. 51, 1 December 2009, pp. 28-47, http://www.paecon.net/PAEReview/issue51/Locke51.pdf