

produces convergence on "the one best way" in the sense supposed by the framing debate is a question reserved to the conclusion.

An American familiar with the evolution of the organization of production (narrowly understood as the procedures by which goods and services are designed and produced) and governance (the way, and to whose benefit, corporations are monitored) in the US in the last decade has, for starters, reason to be wary of dichotomies like shareholder and stakeholder capitalism. On the one hand, organization of production in the US has become in that time substantially more collaborative or team-like: in a word, more "Japanese," and, for reasons touched on below, less "neoclassical" or "American." But on the other, during this same period there has been surprisingly little change in the basic pattern of US corporate governance. Indeed, if it has changed at all, the US governance system has become more "American" in the sense of treating the corporation as an instrument to be used exclusively for the benefit of its equity owners. Assuming, to avoid obvious circularity, that the US governance system will not automatically become "Japanese" just because the production system is, and, conversely, that the US version of Japanese production methods will not fail simply because the governance system remains American, an informed American could well doubt that we have *any* production system in the way the question about convergence intends.

This unsystematic "convergence" – of production systems but little else – has, in fact been widely noted in the US. Michael Porter, for example, commenting on Fukao's¹ comparison of governance regimes, observes that the Japanese system is portrayed as "supportive" of lean production, while the American system is said to be "not supportive." This, Porter continues, is "clearly too simple," because "many US companies have adopted lean production and closer partnerships with suppliers in recent years."² The comment is ungenerous because Porter forgets to add that he, too, has portrayed the US financial and governance systems as hostile to such cooperation. But the truncated remark, coming from a past partisan of the notion of systematic differences among forms of capitalism, also reflects the absence of a conceptual vocabulary suited to analysis of the patchwork of actual adjustment.

¹ Mitsuhiro Fukao, *Financial Integration, Corporate Governance, and the Performance of Multinational Companies* (Washington, DC: The Brookings Institution, 1995).

² Michael E. Porter, "Comments on Mitsuhiro Fukao," in *Financial Integration, Corporate Governance, and the Performance of Multinational Companies* (Washington, DC: The Brookings Institution, 1995), 92–95.

Ungoverned production: an American view of the novel universalism of Japanese production methods and their awkward fit with current forms of corporate governance

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I

The debate about convergence is at bottom, of course, a debate about the competitive viability of two species or flavors of capitalism. The first might be called the neoclassical synthesis, to underscore its reliance on coordination through market exchange, or shareholder capitalism, to underscore the related idea that the corporation exists for the benefit of its equity owners. It is best represented, in intellectual spirit if not in fact, by the United States. The second form is sometimes referred to as stakeholder capitalism, to emphasize its assumption that the corporation is a community (like the larger society of which it is a part), and should therefore be jointly controlled and in that sense "owned" by all those – suppliers of labor as well as of capital or components – who collaborate in production. Its exemplars are Germany and most especially Japan. In this brief chapter I argue that the world's economies are not converging on either shareholder or stakeholder capitalism, nor again on a hybrid of the two or their ecological coexistence. The claim is, rather, that competitive pressures are driving firms towards a novel form of production organization based on collaborative problem-solving techniques pioneered by the Japanese but elaborated elsewhere in ways with crucial elements of the Japanese system within which they were originally housed. Whether the discipline imposed on firms by the diffusion of these new methods

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Informed observers in societies as different as, say, Brazil and Germany could, moreover, reasonably respond on the same lines as their American counterparts. For in these countries too production is becoming more Japanese, but governance is not. To my knowledge there is no systematic change of governance in Brazil; and in Germany the well-documented central development is the withdrawal of banks from corporate monitoring^{3,4}: a move towards "Americanization." By the same token, some Japanese observers, looking at the confusion of main-bank governance (and its drift, perhaps, towards "Americanization"), but noting the stability of many other, crucial features of the Japanese production system, may wonder whether it is judicious to class their own country as *either* Japanese or neoclassical? Nor are these impressions simply artifacts of an arbitrarily narrow comparison of the production and governance elements of the respective national bundles. While production was becoming more Japanese in the US, for instance, industrial relations were becoming so much more "American" in their disregard for unions and company or internal labor markets (and, conversely, their increasingly strict dependence on the operation of open or external ones) that many US industrial-relations experts have trouble recognizing what country they are now in.

The infirmities of the shareholder/stakeholder dichotomy bring me to the possibility of novel developments beyond the reach of the familiar categories. This alternative view is that Japan has pioneered a distinct form of decentralized production organization that is universal, in the strict sense that its core features facilitate adoption in the most diverse settings, regardless of cultural preconditions. But, the general argument continues, the new form of organization, derived from Japanese experience and now developing independently of it, is not neoclassical: for this new decentralization depends on the continuous, disciplined exchange of information among all those collaborating in production, not the contractual relations among autonomous agents, each presumed to know by itself what needs to be done to meet its obligations to the others, which is, of course, the neoclassical view. Finally, the very same features of the Japanese-derived system that allow it to diffuse independent of cultural preconditions and that distinguish it from the neoclassical synthesis render ineffective the

³ J. S. S. Edwards & Klaus Fischer, "Banks, Finance and Investment in West Germany since 1970" (Center for Economic Policy Research, 1991).

⁴ John Griffin, "The Politics of Ownership and the Transformation of Corporate Governance in Germany, 1973-1995," unpublished Ph.D. dissertation, MIT (1996).

current governance structures – all of them, including the Japanese main-bank system – which permitted the emergence of the novel type of decentralization in the first place.

Thus, where the convergence debate asks us to consider the meaning of governance patterns (taken to be "ideas of the corporation" or particular institutions) as parts of coherent bundles including production, political, educational, and, cultural systems as well, this alternative view suggests that the bundles are not presently coherent at all, and that the parts, particularly the production-organization piece, may even be in tension with each other. If that is so, we ought to be thinking hard about how to harmonize the pieces – perhaps in many, nationally or culturally specific ways – and not trying to determine whether the bundles are the same or different, and, if the latter, which differences are best.

A brief presentation is of course not the place to attempt a full examination of the theoretical underpinnings and practical implications of this alternative view.⁵ Instead, I focus on the puzzle of how Japanese production methods can be diffusing to the US and elsewhere even though the other institutions of the Japanese bundle – especially main-bank or *keiretsu* governance – are not. Then I suggest how an answer to that question throws light on new forms of governance that are emerging in the US, and why these latter may have relevance to unsolved problems elsewhere. The starting point is a crucial change in US production organization that is at the center of what makes the puzzle puzzling.

II

That crucial change is the diffusion in the United States of Japanese customer-supplier relations, often taken to be the core of the Japanese production system as a whole. In these new supply relations a small number of top-tier contractors assume responsibility for co-developing crucial modules or subsystems with the final producer, coordinating the production of low-tier suppliers producing parts for subassemblies for their module, delivering the components just-in-time, and meeting targets for incremental improvement of production according to targets agreed with the customer. Benchmarking, simultaneous and value engineering, as well as target pricing are the familiar disciplines by which this collaboration is coordinated.

⁵ Susan Helper *et al.*, "Pragmatic Collaborations: Advancing Knowledge while Controlling Opportunism," *9 Industrial and Corporate Change* 3 (2000).

Indeed, production itself is in some sense jointly managed by the collaborators: with inventory buffers removed (just-in-time-production) defective parts or components quickly disrupt the flow of operations. To resume production it is necessary to eliminate the source of the initial disturbance. This is accomplished through a set of disciplines that trace problems back to root causes, wherever they may lie in the organization of the customer or supplier. An example of one of these disciplines is an insistent series of questions sometimes called the five whys: why is machine A broken? Because no preventive maintenance was performed; why was the maintenance crew derelict? Because it is always repairing machine B; why is machine B always broken? Because the part it machines always jams; why does the jam recur? Because the part is warped from heat stress; why does the part overheat? A design flaw. Thus error-detection and correction, like benchmarking and simultaneous engineering, reveals possibilities for improvement in unexpected (mis-) connections among the parts of apparently distinct organizations.⁶

The exact extent of the diffusion of these methods is hard to measure; but the combination of anecdote and survey results is compelling. In the auto industry, to take the most familiar example, there are well-documented stories of spectacularly successful implementation of the collaborative system, of which the development of the Chrysler LH cars is one of the best known. It is an open secret of the automotive trade press that Chrysler (now Daimler-Chrysler), in general, is better at the new methods than General Motors, and Ford is in between. Chrysler was, at the time it developed the LH car, the weakest of the big three American auto manufacturers. Its success therefore casts substantial doubt on the thesis still sometimes heard in the US – and often advanced five years ago to explain *Japanese* achievements – that the true “innovation” of the new methods is nothing more than the use of market power by the strong to shift the costs of adjustment to the weak. Nor are the new methods restricted to “advanced” sectors of the economy such as semiconductor manufacturing and a rejuvenated automobile industry: the same practices are now widespread in the production of textiles and garments, as well as footwear.⁷

⁶ John Paul MacDuffie, “The Road to ‘Root Cause’: Shop-Floor Problem-Solving at Three Auto Assembly Plants,” *43 Management Science* 4 (April 1997), at 494–5.

⁷ Frederick H. Abernathy et al., *A Stitch in Time: Lean Retailing and the Transformation of Manufacturing: Lessons from the Apparel and Textile Industries* (New York: Oxford University Press, 1999).

Academic surveys of relations in the industry show accordingly that the length of contracts between customers and suppliers is increasing (again with company-specific differences)⁸ – so much so, in fact, that suppliers report that they would undertake no further investment in equipment for particular projects if the contracts were further lengthened. Similarly, the proportion of parts which the customer regards as “black boxes” because the supplier’s know-how was indispensable to its realization has increased rapidly in the US and is reaching Japanese levels.⁹

There are, to be sure, still differences between the two countries in this regard. Japanese customer firms are apparently better at conceptualizing the phases of the design process so that, for example, the periods in which innovations in component design with repercussions on adjacent components or on the specification of the product as a whole are clearly separated from periods in which suppliers must devote themselves to improving their products within established parameters; and the clarity of the distinction avoids the disruption that results from blurring this distinction in the US. But this plainly is a difference of degree, not of kind.¹⁰ As of the mid-1980s, moreover, the same difference existed in Japan between Toyota, which was, of course, the more “Japanese” in the precision of its indications, and Nissan, which was the more “American.” Once Nissan (now Renault-Nissan) noticed the difference – long hidden because its suppliers did not traditionally work for the Toyota group and vice versa – it switched to the “Japanese” system. US firms, if they come to the same conclusion, can presumably do the same.¹¹

There are many other examples of the spread of aspects of the Japanese production system. But innovations in customer–supplier relations, in addition to being a precondition of the rest, is important because it sheds light on our puzzle: the disjuncture or divergence between production and governance systems, and more generally the strange incoherence of

⁸ Susan Helper, John Paul MacDuffie, & Charles F. Sabel, “Pragmatic Collaborations: Advancing Knowledge while Controlling Opportunism” in *9 Industrial and Corporate Change* 3 (2002).

⁹ Takahiro Fujimoto, “The Origin and Evolution of the ‘Black Box Parts’ Practice in the Japanese Auto Industry” (Discussion paper 94-F-1 presented at Fuji Conference, Tokyo University, Faculty of Economics, January 1994).

¹⁰ Jeffrey K. Liker, R. Kamath, S. N. Wasti, and M. Nagamachi, “Supplier Involvement in Automotive Component Design: Are There Really Large U.S. – Japan Differences?,” *25 Research Policy* 1: 59–89 (1996).

¹¹ Takahiro Fujimoto, “Organizations for Effective Product Development: The Case of the Global Motor Industry” (unpublished Ph.D dissertation, Harvard University, Graduate School of Business Administration, 1989).

the bundles of features that are supposed to form types of capitalism. The new (to us in America) supplier relations, after all, seem to suppose not only long-term relations between customer and supplier – at least as long as it takes to design and build a whole model generation – but also and above all assurances, for both sides, that the relations will in fact be long-term. Unless customer and supplier have some sort of commitment to each other, it seems, the customer will not make itself vulnerable to the supplier by making it the sole source of a crucial subsystem. Nor will the supplier make itself vulnerable to the customer by dedicating resources to a project that will be worthless if the latter cancels the order. (This is just a variation of the well-known argument that it is necessary to offer the workforce lifetime employment, or some equivalent, to secure participation in continuous improvement activities that lead eventually, through cumulative reorganization, to the displacement of every worker from his or her current job.) Whatever the precise form of those assurances, moreover, they all have as *their* precondition the justifiable expectation on both sides that the relation between us can be stable if we want it to be. If someone – a shareholder, perhaps – can tell the customer to cancel its order with the supplier simply because of disappointment with the *customer's* performance, the supplier will look elsewhere for business, and the customer's response will be the same if the prospects are reversed. So, if the bundle view is correct, whatever else we may imagine has or has not happened in the organization of corporate governance in the US we should be safe in assuming that nothing has happened in governance (or any other institutions) during the period in which the new supplier relations were being introduced, to increase the likelihood of such paralyzing disruptions. If anything, on this view, the governance should have become more hospitable to long-term cooperation, for example, by favoring finance through "patient" capital which is indifferent to short-term turbulence because of its dedication to long-term results.

But, as already suggested repeatedly, the change, if any, has been in the opposite direction: to render firms more answerable to shareholders with a keen eye for short-term results, and thus less reliable as long-term partners. I say "if any" because it is not clear, on inspection, that much has changed at the level of institutional design, despite familiar talk of the shareholder revolution and the like. But recall that a finding of no change would leave us just as puzzled as before, since the old – pre-revolutionary – institutions of corporate governance already were supposed to give impatient capital so much control of affairs that Japanese production relations were excluded. Let me say briefly, in any case, what the evidence suggests has happened as a result of all the churning of US

governance institutions, and use the conclusions from this quick review to reformulate the puzzle.

III

Take first what has changed. As a result of shareholder suits and other legal developments, boards of directors certainly take more seriously today their formal obligations as representatives of the corporation's equity owners than they did a decade ago. This is particularly true in the case of mergers and acquisitions, where recent decisions obligate the board to seek the best price for the company they monitor if it has been put up for sale. But it is also generally agreed that boards play a larger role than before in the selection, or at least the review of the selection, of the CEO, in scrutinizing corporate strategy, and in establishing goals and procedures for selecting members of and assessing the performance of the board itself. It is also true that the board of directors is widely perceived as having greatly increased its power, as demonstrated in the spectacular dethronement of the CEO with the help of the board and institutional shareholders at such corporations as General Motors, IBM, Kodak, AMEX, Westinghouse, and Apple.

But beneath this surface, most everything is as before, where before refers to situations where boards of directors could hardly be thought of as loyal representatives of vigilant and demanding shareholders. Recall that from the 1930s through the late 1970s US boards were widely regarded as abject creatures of the managers who appointed and remunerated them. From the circumstance that the boards are not the abject creatures of management does not necessarily follow that they are its equals, and still less that they exercise mastery over it in the name of the shareholders. The most current evidence suggests strongly, in fact, that they are not and do not. Thus a recent representative survey of some 100 directors of major US corporations commissioned by the Institutional Investor Project of Columbia University (which has close ties to the institutional shareholder activists) found that the "vast majority" of those interviewed dismissed the idea of formally separating the office of CEO from the office of chairman of the board of directors, and reserving the latter for an outsider, who would presumably be a better representative of shareholders than the inside CEO.¹² The study found further that the directors were reluctant even to (and infrequently did) *meet* with representatives

¹² Elizabeth Neiva, "The Current State of American Corporate Governance" (New York: Institutional Investor Project, Columbia Law School, 1996).

of institutional investors, and that this reluctance was "tame relative to their aversion to inviting investors to serve on corporate boards." The ideal director for the directors interviewed – the same kind of people who presumably say that the corporation should be managed in the interest of the shareholders – is, correspondingly, a person like themselves: the CEO (or, increasingly, the division president) of a large corporation. A recent econometric study of the relation between board composition and corporate performance reinforces the conclusion that the inside managers are still very much in charge. This study finds that many boards now have investment, strategic development, and finance committees whose purpose is to evaluate long-term investment and finance decisions. But, crucially, membership on these committees is disproportionately left to inside or management directors, presumably the same people who formulated the plans in the first place, and the higher the percentage of insiders in these bodies the (marginally) better the corporate performance.¹³ So a crucial result of all the academic and institutional agitation for increased participation of outsiders friendly to shareholders on corporate boards is reorganization that puts inside managers in charge of reviewing their own work, and, for good measure, a study that shows, theory aside, that this is not obviously a bad thing.¹⁴

Others can try to sort out the complex relations between public perception and reality, and the even greater gap, perhaps, between the latter and certain academic reform projects. For present purposes the relevant conclusions are the ones anticipated above: at a minimum, changes in governance have not been a cause of the introduction of the new production methods in the sense of providing assurances of stability that were lacking before. It is simply not clear whether anything of relevance to production organization in this sense has changed. If the governance churning has had any effect on reorganization, it should have been to obstruct "Japanization," for whatever change has taken place is so ambiguous that it has made an uncertain situation more uncertain still, and so less conducive to long-term relations. Because, however, confused and complex as the governance structures were or are, they plainly have not blocked the introduction of the Japanese supplier relations, the plausible upshot of all this is that formal governance institutions in the US

¹³ April Klein, "Firm Performance and Board Committee Structure," 41 *J. L. & Econ.* 1: 137–65 (1998).

¹⁴ Sanjai Bhagat & Bernard Black, "The Non-correlation between Board Independence and Long-Term Firm Performance" *J. Corporation L.* 27: 231–74 (2002).

(and by extension elsewhere) have neither helped nor hindered the reorganization of production very much, at least not in any way we can grasp with the help of current theories of the corporation.

(It might be objected, parenthetically, that the introduction of new methods would have been faster had the governance institutions been more hospitable. But recall that according to the standard view of the difference between stakeholder and shareholder capitalism Germany and France have more patient capital and more hospitable governance structures than the US. Yet they lag behind the Americans, substantially, in the adoption of the new methods. This observation might be parried by arguing that "Japanese"-type governance will produce Japanese production relations only in the presence of other features of the Japanese bundle. But then we are back where we started, for how do we explain the diffusion of those methods in the US, where not much seems Japanese?)

All this leads to a reformulation of our original puzzle: what is it about the Japanese production system that allows its diffusion given some minimum *de facto* level of stability, but in the *absence* of the kind of governance assurances of stability that seem to be its precondition? Or, put in a way that points towards the alternative thesis, could it be that the construction of Japanese production systems does not suppose the existence of long-term relations, because the system somehow in the course of its operation is able to *produce* them?

This is, in my view, just the innovative and potentially universalizing property of the Japanese system, and it is achieved through the disciplines and institutions the collaborators use to assess continuously one another's capacities while they are solving problems jointly. These disciplines link discussion of actual performance by the cooperating parties – monitoring – to discussion of how to improve operations given that performance – learning; hence I refer to the whole process as learning by monitoring. Just-in-time production, where parts are produced one at a time as needed, is an extreme example: a defect introduced at one workstation literally stops the flow of production, so discussion of improving the production set-up by identifying and eliminating the disruption becomes a precondition for continuing production at all. Strictly analogous disciplines such as value-added engineering and target pricing allow suppliers and customers to set goals and metrics for assessing progress in achieving them in relation first to design, then to production projects. Think of this as an information-symmetrizing machine, which works to ensure that the parties come to share the same understanding of their situation, and to redefine their purposes and interests accordingly, in the very process

of exploring the ambiguities they encounter in pursuit of their initial goals. With some additional argument that would be a distraction here this mutual exploration of unknown states of the world can be shown to be distinct from the neoclassical view of coordination of independent actors through formal contracts – whose very purpose is to fix *ex ante* the conditions of exchange, with at most a few exceptions, in the case of relational contracts, for foreseeable “unforeseeable” contingencies such as fluctuations in the price of raw materials or labor.

Notice that in this setting partners do not need equivalent levels of sophistication, nor do they need to depend on a history of prior – social? economic? – relations as an assurance of mutual liability. A subcontractor with rudimentary production skills, for instance, can start as a low-tier supplier, and move up the hierarchy of suppliers as it is able to demonstrate greater capacity and reliability. Or both parties can increase in sophistication together, the customer delegating more responsibility to the supplier, to conserve resources for more and more complex design and coordination tasks, and the supplier becoming an increasingly equal partner, providing not just black boxes but whole new technologies. If either partner is unable to achieve the stability and discipline needed to maintain the flow of information required to work with the other, this will be evident in disruptions in the information exchange early enough for the more capable collaborator to help correct the problem or seek an alternate partner.

Another, more general way to put the same point is to say that skills (of individuals) and capacities (of firms) in the Japanese system are general-purpose, not firm-specific or dedicated in the sense of suited to transactions only with particular, known partners. Indeed, diversification among many clients or employers should actually result in efficient gains: if problem-solving or co-development is the master skill or capacity, then the more different problems solved, the easier it becomes to solve the incremental problem at the margin of experience. Diversification should, in other words, yield economies of scope. The risk of this open, diversified strategy is clearly the possibility of encountering an unreliable partner, and investing so much in the partnership that failure is ruinous when it is finally detected. Learning by monitoring reduces this risk. Given the general-purpose character of the activities and the associated economies of scope, learning by monitoring explains how the world over, in giant, state-owned Chinese steel mills, in Brazilian automobile firms, and in the US, parties with no tradition of collaboration, or rather, long histories of mistrust or negligent indifference to one another are successfully adopting “Japanese” methods.

None of this has much to do with any straightforward understanding of stakeholder capitalism. Where is trust in the sense of the sentiment of mutual obligation said to be characteristic of such systems?

By way of response consider three observations. The first is that the more American observers learn about the Japanese system, the modern archetype of stakeholder capitalism, the more struck they are, too, by how very un-Japanese it appears. The idea that even first-tier subcontractors compete with each other in the design stage of major projects, each sending its own engineers to work with the potential customer; the notion that rates of improvement are carefully negotiated and recorded in agreements – this and much more of the measurement and constant comparison of performance with goals does not comport with the picture of the Japanese as relying on mutual dedication to common tasks to carry the burden of intimate relations.¹⁵ Second, the more Japanese scholars focus on the Japanese system, the more they, too, come to doubt cultural explanations. Wada, for instance, in an excellent study of the history of supplier relations at Toyota, criticizes two Americans, Monteverde and Teece, for arguing that there was less vertical integration in Japan than in the US because “close cooperative relationships between assemblers and suppliers” reduced the danger of opportunism in Japan.¹⁶ From his study of Toyota, “reputed to be the assembler with the closest cooperative relationships with its suppliers,” Wada draws the contrary conclusion that “these close cooperative relationships were realized under a system of evaluations of suppliers by Toyota, which stimulated a competitive spirit among suppliers. It is not that Toyota was not liable to opportunistic exploitation, but that close cooperative relationships in themselves contain the means for preventing the occurrence of opportunism. The evaluation system brought into the close cooperative relationships is the important factor that raised the percentage of Toyota’s reliance on external production and that brought about the tiered inter-firm relationships.”¹⁷

Koike, moreover, makes a second and related argument against the culturalist view in stressing the role in promotion decisions of

¹⁵ Charles F. Sabel, “Learning by Monitoring: The Institutions of Economic Development,” in Neil Smelser & Richard Swedberg, eds., *Handbook of Economic Sociology* (Princeton, NJ: Princeton-Sage, 1994), pp. 137–65.

¹⁶ Kirk Monteverde & David J. Teece, “Supplier Switching Costs and Vertical Integration in the Automobile Industry,” *13 Bell Journal of Economics* (1): 206–13 (1982).

¹⁷ Kazuo Wada, “The Development of Tiered Inter-firm Relationships in the Automobile Industry: A Case Study of Toyota Motor Corporation,” in *Japanese Yearbook on Business History*, pp. 23–47 (1991).

evaluations of the ability to respond to unusual circumstances and encourage problem-solving by groups. His position is, however, significantly different from the one urged here, for instance, in stressing the role of tacit knowledge in production where I am emphasizing the importance of explicating tacit knowledge when necessary through learning by monitoring.¹⁸ I refer to his views, and the others from the Japanese debate as well¹⁹, not to suggest, improbably, that my position turns out to be the “Japanese,” one, but rather to indicate only that there are authoritative voices in the Japanese debate – at least the part accessible to a nonspecialist – which can be construed in favor of the notion that Japanese innovations are of potentially general significance.

IV

Where does all this leave the problem of governance? More precisely, what is the relation between the kind of monitoring that goes on in Japanese production systems in connection with project selection, design, and the like, and the kind of higher-level monitoring – of the viability of whole lines of business or divisions, or how to choose among very different but plausible long-term development goals, of how to respond to threats or opportunities facing the corporation as a whole – that is rightly the province of corporate governance. From the point of view of the report under discussion, the answer is that the relation already is, or will soon be, harmonious: either “Japanese”-style main-bank monitoring will, after a period of turbulence, return to its “natural” role of monitoring “Japanese” corporations, or, after (substantially?) more turbulence, a neoclassical synthesis, more American in its outlook, will solve the problem. But the empirical remarks and theoretical thrust of the argument so far suggest a different, much less harmonious conclusion.

Empirically, neither the main bank nor the US shareholder system has given evidence of doing a good job at monitoring the new kinds of decentralized production when they need to be monitored: in times of trouble. As contingent corporate monitors, the Japanese main banks are

¹⁸ For problem-solving see Kazuo Koike & Takenori Inoki, eds., *Skill Formation in Japan and Southeast Asia*, pp. 8–10 (Tokyo: University of Tokyo Press, 1990); for tacit knowledge of skills, see pp. 10–15.

¹⁹ Especially, Ikujiro Nonaka & Hirotaka Takeuchi, *The Knowledge-Creating Company: How Japanese Companies Created the Dynamics of Innovation* (New York, Oxford: Oxford University Press, 1995), which emphasizes the process by which Japanese firms partially explicate tacit knowledge.

supposed to take control of corporations when sitting managers demonstrate incapacity; in practice, during the current recession, the banks have not themselves demonstrated much capacity to act on such contingencies. Firms under their supervision have wasted free cash flow in American style. Moreover, current developments have probably accelerated the trend away from bank lending to corporations that began when large Japanese firms were allowed to issue securities directly. For its part, the US shareholder system of monitoring has never failed at the supervision of Japanese-style corporations for the simple reason that it has not yet had a chance to: allowing decentralization to proceed produces improved performance insofar as there are gains from decentralization, but such improvement is no guarantee that the permissive governance conditions are also suited to early detection of errors in the emergent system. On the contrary: if the foregoing is not too far off the mark, the US system as currently constituted might fail too, and for reasons related to the deep-seated difficulties of main-bank monitoring.

The problem is that the information generated by the Japanese or learning by monitoring system for its day-to-day and medium-term needs is presumably also necessary to understand how to correct large errors when they occur, yet is not available to the “contingent” monitors – main banks or shareholders – who intervene when such emergencies occur. The paradox is that only agents monitoring the (new) corporation day-to-day – which is to say participating in its routine project selection and evaluation procedures – could know enough of its highly decentralized operations to correct large errors in an effective way; but just such agents are discredited when the errors come to light; and outsiders, whatever bundle of interests they are trying to maximize, simply can not learn enough fast enough to be useful. From this perspective, therefore, the differences between main banks with their view of the corporation as a community and shareholders with their vengeful selfishness are less important than the similarities in their limitations. Doing badly in the name of the good cause is presumably better than doing badly in the name of the bad, but this not much of a consolation for the victims of incompetence.

But of course there is a way out. There *are* in both systems providers of capital who also supply efficiency-increasing information – ideas about co-investment possibilities, about alternate managerial strategies, and the like. In this their relation to the “Japanese” corporation is like the relation of its suppliers of components or skill. In the US these are the venture capitalists, who operate not only in high-tech industries but, increasingly,

in the restructuring of mature sectors through "leveraged build-ups" and other novel devices that allow for profound restructuring of the firm's relation to its customers, use of information, and organization of production. Their Japanese counterparts are the managers in the large corporations who decide on the internal diversification strategy. Both know how to combine managerial advice and guidance, rooted in deep knowledge of the decentralized corporation, with expertise in finance. Neither is a shareholder or a stakeholder in the standard sense, for they are too much like managers (or employees or suppliers) to count as the former, and too much like owners – but of what kind? – to count as the latter. Perhaps the next round of research, dedicated more to the joint exploration of the unknown than to evaluation of what exists, will explore the lessons these groups have to teach for constructing a general governance system that makes the best of the "Japanese" production system as it spreads through the world.

V

What, finally, are the implications of the foregoing for the debate about convergence? First and most directly, the story I have been telling about the diffusion of a new, problem-solving production system and the emergence, perhaps, of a coordinate form of governance cast doubt on the validity, in the current context, of two arguments frequently marshaled against the proposition that convergence on any one model is a likely outcome. The first, ecological, thesis asserts simply that organizations are adapted to their environments, and, as environments differ, so too will organizations. Globalization in the sense of the spread of new customer-supplier relations across many previous disjoint sections of the world economy is not equivalent to the homogenization of production relations the world over. But it does take the self-evidence off the ecological claim that environments are manifestly different and, perhaps, shifts the burden of proof from those arguing for some broad convergence of setting to those disputing it. In any case, the world's economies seem more "global" than before in the aspects canvassed above, and the ecological argument correspondingly less forceful.

The success of the new organizational forms poses a more direct challenge to the second, path-dependency thesis against the possibilities of convergence. According to this thesis systems or societies become path-dependent, or locked into their initial choices when the unrecoverable or sunk costs of those choices are high, and the returns to proceeding

down the chosen path are positive or increasing. (Think of economies of scale, where production costs per unit decrease with volume, or network externalities, where the value of attachment to a network increases with the number of other users attached.) The burden of the characterization of the learning-by-monitoring systems discussed above is that economies of scope are becoming more important than they were in relation to economies of scale, if not absolutely more important than the latter. If true, this cuts against the path-dependency view in two ways. First, it shows that the pursuit of efficiency does not require progress down one, ever narrower path. Exploration of alternatives is an efficiency-increasing alternative. Second, it casts doubt on the assumption, buried deep in the path-dependency claim, that systems and societies come in tightly integrated bundles. There would not be much scope for economies of scope if many pieces of apparently discrete bundles could not be recombined into new hybrids.²⁰

At the limit, indeed, learning-by-monitoring organizations can be thought of as designed to detect and correct inefficient path dependencies by obligating the actors continuously to examine their initial assumptions in the light of current experience. The fact that they can in some measure do this by using benchmarking and new kinds of problem-solving to disentrench routines and survey choices otherwise obscured by habit suggests that the path-dependency view seriously underestimates both our capacities for organized self-reflection and the plasticity of the human world, and least in current settings.

But the arguments against the plausibility of the divergence thesis do not immediately buttress the case for convergence on a single model, at least not in anything like its familiar form. First, as the example of the five whys shows, learning-by-monitoring directs attention at least as much to the particulars of local problems, and local means for solving them, as to general principles of problem-solving. In this sense it is more a *lingua franca* of problem-solving than a fully specified model for organizing design and production. Many subtleties aside, the diffusion of a *lingua franca* for characterizing a process for adapting to local particularities is plainly not the same thing as, and surely need not lead to convergent adoption of, a single outcome – a model of the one best way of doing things. Indeed, as Herbert Simon noted long ago, if any method of organization were a perfect "adapter," allowing actors to adjust effortlessly and

²⁰ Charles Sabel, "Intelligible Differences: On Deliberate Strategy and the Exploration of Possibility in Economic Life," 1 *Rivista Italiana degli Economisti* (1): 55–80 (1996).

perfectly to their respective environments, we could afford to ignore the organizational machinery altogether (as economists normally ignore the working of the firm) the better to focus on the relation between changes in the setting and changes in behavior.²¹ So if learning-by-monitoring were such a perfect adapter, all we would “see” would be the differences its invisibly uniform processes produced.

But of course learning-by-monitoring is no such perfect adapter, and its intrinsic limitations suggest a second reason that convergence in the sense of diffusion of the one best way is highly unlikely. Flexible, learning-by-monitoring organizations are designed to solve high-dimensional problems — those that must satisfy many unrelated criteria at once. High-dimensional problems typically yield optimal designs — solutions that are best on all the relevant dimensions — only by rare accident. These systems, we saw, aim to produce an increasing variety of product at higher and higher levels of quality and ever lower prices and shorter intervals between models. Their marvel is that they reveal pursuit of at least some of these goals to be compatible in the sense that gains in, say, variety, do not come at the price of steep penalties in quality or speed of development. But this kind of compatibility does not imply that there are no trade-offs in the rate of improvement along various dimensions: on the contrary, it is reasonable to expect that improving quality comes, at least after a time, at the cost of a slow-down in improvements in variety or vice versa. To assume otherwise is to expect both a miraculous harmony among apparently disjoint ends, and a miraculous ability to discover this harmony beneath the veil of experience. Given this limit, we are likely to have many variants of flexible, economy-of-scope production systems because each will be better than the others in reconciling some of the many dimensions of improvement that such systems will have to satisfy. And in fact, while there does appear to be convergence on learning-by-monitoring methods in design and production, there is no sign in the literature of convergence on the best ways of implementing even a discipline as apparently narrow as the five whys. Some companies create *ad hoc* problem-solving teams; others maintain standing groups dedicated to particular types of problems (trim, electrical, leaks, in assembly plants, for example).²² All have advantages and disadvantages, and each may in time give rise to wholly

²¹ Simon, Herbert, *The Sciences of the Artificial* (Cambridge, MA: MIT Press, 1969).

²² See the contrasting problem-solving strategies of Ford, Honda and General Motors described in MacDuffie, note 6 above, at 483–495.

new ways of viewing problem-solving in general. *Mutatis mutandis*, the same is true of customer–supplier relations.²³

Finally, there is the possibility that the loose connections between governance and production systems that I portrayed as transitional may turn out to be persistent. Put another way, maybe the lesson of the long transition of the last twenty years is that economies are (nearly) always in transition, and simply lack the coherence that convergence theory in any version, including the attenuated one advanced here, supposes. Thus we might get learning-by-monitoring in production, along with the persistence of different but workable governance systems. But regardless of whether and eventually how these tensions are resolved, on the facts of the 1990s, corporate governance is most definitely in transition from categories and debates we know all too well to categories that will have to be invented through new disputes. At the very least, as I read the situation, those who think the old controversies are about to be decided (and they know how) are in for a surprise.

²³ Gary Herrigel, “Emerging Strategies and Forms of Governance in the Components Industry in High Wage Regions,” and Josh Whitford & Jonathan Zeitlin “Governing Decentralized Production: Institutions, Public Policy, and the Prospects for Inter-firm Cooperation in the United States,” both forthcoming in *11 Industry and Innovation* (1–2) (2004).



In Memoriam: DAVID CHARNY, 1954–2000

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