

# A Fresh Look at Japan

## As Concept Leader in the Design of Industrial Processes

By Dan COFFEY

***If Anglo-Saxon audiences are to use Japan as a concept leader in the design of industrial processes, then Japanese concepts must be properly understood.***

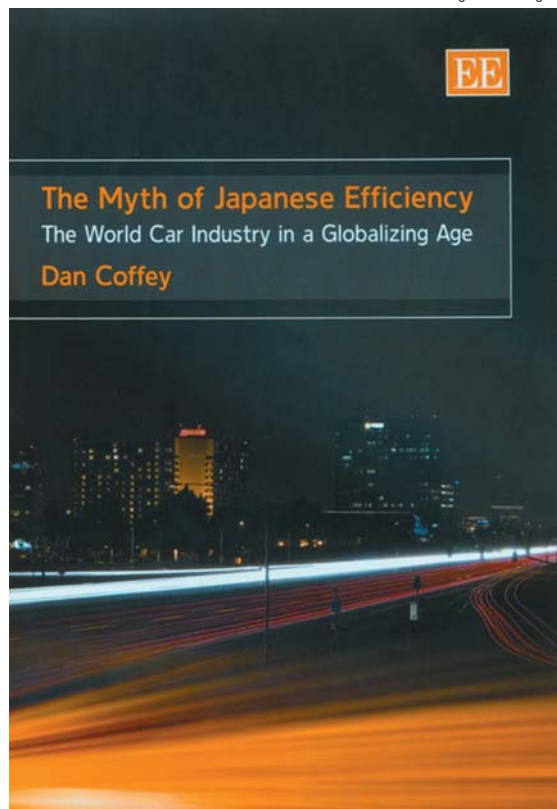
Photo: Edward Elgar Publishing Ltd.

The title of a book is an awkward thing. My own recent book, *“The Myth of Japanese Efficiency: the World Car Industry in a Globalising Age”* (photo), illustrates this. At one level, it directs the reader appropriately – there is a myth about Japan, in a context of globalization, and a major world industry is to be taken as a study; but at another, it risks giving a false impression of themes and contents. It could be read to imply a criticism of Japan: of Japanese firms, or Japanese institutions, or Japanese capabilities more generally. But it is none of these things. It is about Western perceptions.

A natural starting point is the shock engendered by the successes of Japan’s export drives in cars and consumer electronics to North America and Europe throughout the 1970s and into the 1980s – successes which steadily mounted. As Western firms struggled to adapt, interest in Japanese production philosophies grew, and ‘Japanization’ became a popular management byword. But in this environment, myths could easily develop.

### Avoid Applying Ideas in Wrong Ways

My first sense of this came in the early part of the 1990s, when working as a participant researcher in a British car company, Rover. This was a firm with a difficult past, existing at that point in very straitened circumstances. But a new product strategy, modeled on the ‘build-to-custom’ approach of the German car-maker BMW was proving highly successful, and the future looked a little brighter. But at this time Rover also began to experiment with what its British managers saw as the Japanese way in manufacturing, introducing what they considered a just-in-time supply system. The results quickly proved disastrous: scheduling flexibility was lost, costs increased. But what was remarkable was that no matter what happened, these



*Cars’ lights in a city at night*

managers assured me that they were doing the right thing – they simply assumed that the problem lay elsewhere. Had an attempt been made to investigate the issue beforehand, they would have discovered that none of the major Japanese car manufacturers follow a BMW-style strategy for products – in which individual customers are offered a rich menu of factory-fit options for their car: indeed, the Japanese leader Toyota has typically avoided this kind of policy. But the possibility that the just-in-time experiment was being applied out of context never seemed to be a worry – it simply never occurred to them as an issue.

Moreover, to my surprise, the newspapers of the day were filled with stories of massed ranks of Japanese advisors helping the company organize its new system. While at that time Rover did enjoy links with Honda, the

attempt at Japanization was entirely home-grown; in my time in the company, I never came across a Japanese advisor.

By a turn of fortune, Rover was purchased shortly afterwards by BMW. But even when the German firm later sold off the factory most committed to Japanization, and its then Chairman Bernd Pischetsrieder commented that part of the blame lay with the rigid manufacturing culture that had developed at the site, little notice was taken.

### Confirmation Biases Can Mislead

Psychologists use the term ‘confirmation bias’ to describe a situation in which the world is consistently – if unconsciously – interpreted in ways which support the underlying beliefs of the observer, regardless of the evidence. Recognizing these examples as extreme cases, I began to think about how Western observers interpret the successes of Japanese corporations, and about how this colors depictions of Japan.

For example, perhaps the most popular Western-created term used to describe the secret of Japanese manufacturing success is 'lean production'. The term was coined by a researcher at the Massachusetts Institute of Technology (MIT) to describe the supposed findings of a worldwide survey of car assembly plants, popularized through the medium of a best-selling book, *"The Machine That Changed the World,"* co-authored by James Womack, Daniel Jones and Daniel Roos and published in 1990. What was claimed, and what has remained in the popular imagination since, is that Japan's car assemblers enjoyed huge advantages in labor productivity for reasons other than the very high levels of factory automation that were consistently found at Japanese sites.

This message has been taken to heart by managers around the world, and many would-be lean producers have accepted the idea that a simple reorganization of operations rather than a committed long-term investment strategy is a recipe for business success. But again the evidence that this actually works for these firms is not compelling. A database compiled at the Ann Arbor (Michigan) Industrial Technology Institute, for instance, and comprising data updated on more than 1,000 smaller manufacturing firms from 1992, suggests that the smaller American businesses most likely to devote management resources to the Japanization of supply chain and shop-floor practices are also typically poor investors in hardware and software for business scheduling and quality functions, product development and shop-floor automation. But as institute director Daniel Luria has noted, these same firms also scored poorly on outcomes including responsiveness to customers and value added per employee.

### Looking Again at Lean Production: Look Again at Evidence

With this kind of contrary evidence available on processes and outcomes, I decided to look more closely at the original MIT data on Japanese car assembly plants. And in my book I show that a quite different interpretation was (and is) possible. There was certainly evidence that car plants in Europe compared badly at all levels of automation compared with factories elsewhere, using the original productivity measure. But I found that if factories based in Europe were then put to one side as a special case, and a comparison made simply between Japanese and non-Japanese plants everywhere else, then there was no evidence of net productivity differences after allowing for

automation. There was therefore no good reason after all for US firms to imagine that they could match Japanese performance levels, without matching Japanese investment rates.

But what again struck me was not that the statistical analysis required to see this possibility is complicated, but that highly intelligent people did not think of it. Again, I wondered about the role played by confirmation biases and prior beliefs.

### Looking Again at Toyota: Look Again at Japan

A corollary of this is that Western commentators may be blinded not only to the reasons for Japanese manufacturing success, but also from thinking seriously about Japan.

An instructive example here involves the experiences of Toyota. At the height of Japan's growth boom – before the first downturns of the 1990s – Toyota began to experience problems with recruiting and retaining workers for its domestic car plants; and available data published on its assembly processes at this time suggests the company was also beginning to experience problems with unplanned assembly line stoppages. One response was that Toyota began to experiment with new forms of work organization, including the deployment of mini-lines separated by buffers of partially built cars to localize and absorb stoppages on sections of the factory process, without affecting others. This was despite the popular Western understanding of Toyota at the time as a car manufacturer which takes great pains to eliminate all buffers from its factory processes. At the same time, women workers were deployed for the first time to assemble cars.

From the narrow perspective of manufacturing operations, it is interesting to note that if some of the popular "lean metrics" supposedly derived from Toyota's own practices had been applied at this time to these experiments, Toyota would have failed badly. It may be that one reason for its success is that it is more willing to experiment, and to change practices radically in light of new problems, than some of its Western admirers. But at the same time, the radicalism of Toyota's experiments would not be understood fully unless the observer was aware of the significance of altering gender roles at work.

### Can Japan Compete?

An even more interesting example is the response of Western observers to the economic downturns of the 1990s, which shook confidence in the Japanese economic miracle. Michael

Porter, a world-renowned thinker on strategic management, and co-authors Hirotaka Takeuchi and Mariko Sakakibara produced a widely read study called *Can Japan Compete?*, which blamed these downturns not only on the collapse of the infamous ‘bubble economy’ of the previous decade – a period of massive trade surpluses from exports overseas and increasingly overvalued equities and real estate at home – but also on Japan’s model of economic management. Their study described Japan’s national economy as overly regulated, overly taxed, too bureaucratic, too protected, too export-dependent – and suffering quite generally from ‘meddlesome’ government. There was little, it seemed, that Japan had got right.

But to sustain such a controversial charge, an explanation is needed as to how such a badly managed Japanese economy could grow so enormously over previous decades. To explain this, Porter and his co-authors argue that the reason why Japan had been successful for a time was that while firms like Toyota had discovered lean production, with the spread of the lean production philosophy to the West this advantage had disappeared – exposing more general weaknesses in Japan’s economy.

This kind of argument finally inspired my own book. Were it true that the successes of firms like Toyota were due to a sudden discovery of a magic formula at the level of the management of manufacturing operations, then there might be something to be said about Porter’s argument: but equally it could illustrate how myth making at one level – about what ‘Japanization’ in the factory entails – can feed myths at another – about the successes and failures not just of firms, but of entire economies.

### Anglo-Saxon Understanding of Japanese Contributions

In fact, while surely not the intention, it is possible to see in this kind of argument the reawakening of a claim that was common in Western circles 40 years ago, which is that Japanese firms can make things cheaply and efficiently, but lack innovative flair. In other words, while strong on processes, they are weak on products – and can be criticized for failing to be innovative in *all* aspects of industrial design, and to identify distinctive marketing strategies to complement easily copied production methods.

Events, of course, move on. The banking and finance crisis now afflicting the US economy, and also the economies of Western Europe, and the bailouts required by giant Western corporations – including Ford, General Motors and Chrysler – make it unlikely that this speculation will continue. Japan may again be hailed as a role model.

But it is interesting to note that 40 years ago, when Britain was still a major industrial power, a British government minister who went on a fact-finding mission recorded, in his diaries,

his predictions for the future. Observing the ‘efficiency’ of a Japanese factory, and noting the very rapid advances made in telecommunications, he concluded that British manufacturers would be well advised to prepare themselves for “the fact that competition from Japan in the future” was “going to be formidable.” But at the same time, he found it necessary to impress that Japan had moved *beyond* simple manufacturing, and was making great strides too in linking production to product innovation. It is strange to think that 40 years on people need to be reminded of this dual strength.

### Myth of Japanese Efficiency Revisited: Lessons & Debates

This then is the subject matter of my book. Through the medium of a set of individual studies of manufacturing – on questions of flexibility, productivity, the reorganization of industrial processes in the global car industry, and drawing here on my own experiences in the field as well as a careful reinterpretation of available documentary and statistical evidence – I make the case for a fundamental revaluation among Western businesses of the reasons for Japan’s past manufacturing success. But I go further; I also consider what misconceptions at the level of corporate or factory processes might imply about false assumptions about, or perceptions of, Japan’s wider economy.

For example, another view – different to Porter’s – argues that as Japanese factories began to relocate overseas to the United States and elsewhere from the mid-1980s, under pressure to do so by Western governments and an appreciating exchange rate, this set in train a process of *kūdōka* – a ‘hollowing out’ of Japan’s industrial economy. This debate plays a prominent part in a recent collective book which I was privileged to co-edit.

So when we ask whether the early lead of the Anglo-Saxon model of capitalism in inspiring business initiatives will give way to a Japanese lead as the concept leader, we must remember the huge impact ‘Japanization’ has already had.

But if progress is to be made, false assumptions must be challenged, and the strength of Japanese corporations in the design of both industrial processes *and* products acknowledged. This is the kind of debate that also needs contributions from the Japanese side: on corporate strategies of Japanese firms in the West, and how these play out in Japan; and on wider issues too of the Japanese economy and culture – like workplace gender relations. And here, of course, *JAPAN SPOTLIGHT* is playing a major role. **JS**

*Dan Coffey is Senior Lecturer in Economics at Leeds University Business School in Britain. He holds a Ph.D. from Warwick University and an M.Phil. from Cambridge, and researches Western understanding of Japanese contributions to manufacturing.*