

HEAT FROM AN ORIENTAL SUNRISE

Bar the Doors---The Ronin are Coming!

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The Shogun land whose culture spawned the Kamikaze pilots of World War II has a favorite Kubuki play, Chushingura. This play commemorates a true story, lived out in early eighteenth century Japan, and it celebrates the glory of loyalty and the honor of seeking revenge.

Known in English as the Tale of the 47 Ronin, the story, in essence, is this: Lord Assano plotted the murder of his hated rival, Lord Kira. At length the attack was made, but Lord Kira was only wounded and survived. News of the failed murder attempt reached the Shogun, who at once commanded Assano, guilty of a breach of feudal ethics, to commit seppuku (ritual suicide). Under the code Assano was compelled by honor to dispatch himself, and did.

Leaderless then, Lord Assano's loyal samurai retainers, the ronin, wandered the countryside for years, burning with hatred for Lord Kira. Driven with singleminded thirst for revenge, they waited for the chance to complete Assano's failed murder attempt.

At last, one bitter snowy night, the ronin burst into Lord Kira's house and murdered him. This they did, knowing that the deed of revenge would cost them their lives.

The Shogun, in a magnanimous gesture, moved by their loyalty to their leader in carrying out his failed action, permitted every one of them an honorable death by committing seppuku (ritual suicide).

This play of revenge at the price of certain death strikes such a deep and responsive chord in the Japanese spirit that its presentation was banned for a time by General McArthur's staff after World War II. The reason is obvious.

Today the make-believe ronin wander the stage of the Kubuki theater: one wonders whether the real ronin, smouldering with resentment at their leader's humiliating defeat in World War II, may not be wandering over the earth seeking and planning the ultimate revenge of a devastating industrial triumph over those who defeated them in war.

Now may be a good time to question whether America's destiny is still manifest. Such a short time ago, in the '50s, America was dominant. We monopolized high technology, produced in excess of 80 percent of the world's automobiles and televisions. Only 5 percent of our industries had foreign competition.

In the '50s there were imports from Japan, largely of a somewhat pathetic nature. A lumber company, seeking a bargain, bought a small lot of Japanese pallet nails. These nails, supposed to be stiff stock, were of such wretched quality that they could not be driven without bending. They were cheap, and they were useless.

A purchase of Japanese wood chisels, bargain priced, assumed to be stiff tempered stock, bent almost like rubber. Japanese goods were a joke then.

By contrast, today Japanese manufacture means outstanding quality, and in 1988 we will make less than 30% of the world's automobiles and television sets. We don't even attempt to manufacture VCRs.

Consumer electronic products almost without exception are imported from Japan. Foreign competition, almost nonexistent in the '50s, is increasing exponentially and is confronting us everywhere.

In the attempt to meet this competition, we have reacted by lowering our real wage rates and by drastically dropping the exchange rate of the American dollar.

We remain #1 in the world in military power, and in influence. The dollar continues as the dominant currency. We are the leader in technology and innovation. Our inventiveness is unmatched.

With so much going for us, what, in simple terms, has happened to make us net debtors to the world? We were net creditors until two or three years ago, and now we owe about half a trillion dollars, with the amount constantly increasing. How serious is this, and can something be done about it?

To simplify the problem, let us narrow its scope to the Pacific rim, and to Japan in particular, since we are experiencing with them a classic example of severely unbalanced trade.

For a considerable time America has been the unquestioned world leader. Perhaps the first glimmerings of evidence that the U.S. was a threat to Britain's trade dominance came at the 1851 industrial exhibition at the Crystal Palace in London. The U.S. was No. 2 in industry even then, and closing the gap rapidly. Exhibition-goers marveled at the made-in-America machine tools, pistols, clocks, and mechanical reapers. Cyrus McCormick's new reaper drew thousands of spectators to a nearby field. Goodyear's India rubber products won a big prize.

British businessmen were astonished: they saw for the first time America's innovation of mass production, for these devices were assembled from fully interchangeable parts. They felt compelled to give this new phenomenon a name: it was called "the American system of manufacture."

The British industrialists who investigated found that there was an excellent reason for this dangerous new competition: the free Yankee population had a high literacy rate, 90% overall, and an amazing 95% in New England, America's industrial heart, compared to about 65% for the British. Certainly this was not all, but this was a highly weighted factor in the U.S. ability to compete.

Today the U.S. is the dominant world power, but we gaze with amazement at the Japanese industrial juggernaut that threatens our very economic life and power status and ask ourselves why?

Consider this: Japan's functional literacy rate is 95%, while our own is down to about 80%. It may not be oversimplifying to state that our own workforce is on the whole ill-equipped to compete in the ever-more open, heated, fast-paced world wide markets.

Merry I. White, author of The Japanese Educational Challenge says, "Much of the success of Japan stems from the fact that its blue-collar workers can interpret advanced mathematics, read complex engineering blueprints, and perform sophisticated tasks on the factory floor far better than blue-collar workers in the U.S."

So frequently it seems that we choose to solve a problem by throwing money at it. We have indeed tried to solve the competitiveness problem by investing hundreds of billions of dollars in capital equipment. This was certainly needed, but needed also is an investment in people, an investment in human capital, because people are the real driving force behind economic growth.

As random samplings of our educational deficiencies, consider these two examples. Chemical Bank in New York reports that it must interview 40 applicants to find just one who can be successfully trained as a teller. IBM Corp discovered, after spending millions of dollars to install computers in its Burlington (Vt.) factories that it had to teach high school algebra to many thousands of workers before they could run them.

American universities are admittedly the best in the world.

Our elementary and high schools are certainly not the best in the world. Consider this; U.S. students attend class 180 days a year. French and German students go 220 days, and Japanese children spend 240 days in school every year. Not only that, their school days are longer. American high school students, on international math and science tests, score below the French, German, and Japanese students. They test two to three years behind these same students, reflecting the amount of time spent in school. A Japanese high school graduate has had as much classroom time as an American college graduate.

This year 22% of MIT's freshman class is Asian-American. Almost 40% of U.S. graduate students of engineering are foreign born. In the physical sciences we are graduating half as many PhDs as we did in the '70s - and half of that smaller number are foreign students. Half or more of the engineering assistant professors under the age of 35 aren't U.S. citizens and, even then, there remain more than 1800 engineering faculty positions that we can't fill.

Where are our priorities? How does our brainpower get diverted? Consider this: Japan trains 1000 engineers for every 100 lawyers. We train 1000 lawyers for every 100 engineers. Put the figures together: we get 100 lawyers for every one engineer. Two-thirds of the world's lawyers now practice in America (one for every 375 of us, compared to about one for every 1900 of the

Japanese) These are some of our brightest citizens, drawn away from engineering by our litigious society.

In summary, we in various ways have committed what the National Commission on Excellence describes as "acts of unilateral educational disarmament."

Getting away from education, and what our educational system is turning out, a topic of importance is the supply and cost of capital.

In the U.S. we have a low household savings rate, the rate being, in 1986, about 4% compared to Japan's 16.5% or more. As one result, Japan has been investing 100% more per employee than the United States. Our investment in Research and Development and basic science as a percentage of national output has dropped sharply in recent years. Capital here is twice as expensive as that in Japan. Our high interest rate derives from government's necessity to borrow in excess of a half-billion dollars a day just to pay interest on its debt, as well as the individuals saving less and consuming more. Consumer debt, marching in lock step with government debt, has more than tripled since 1977.

Today Japan has parity with America in per capita output, and with the yen's strength compared to the dollar, the constant adaption and modernization of their economy and industry, it is no longer inconceivable that, with half our population and their tiny acreage, they may soon equal us in actual gross national



product.

As one example of the payoff of intensive capital utilization, Japan's automobile industry is far ahead in their development and use of robotic systems. As a result, the average man-hours required to build a car dropped to 100 in 1987, compared to 150 man-hours per car in the United States.

Naturally, we are striving to make ourselves competitive; it is essential. Unfortunately as we improve our industry to compete on their 100 man-hour basis the Japanese will not stand still; they intend to maintain a competitive advantage by reducing to 75 or 80 man-hours per car.

The manufacture of computer chips of increasing complexity has sky-rocketed the cost of an internationally competitive chip making facility to about a quarter of a billion dollars. This is no problem for Japan; they have the cheap capital. For many of our own manufacturers already there is no choice: they must send their chip designs to Japan for manufacture.

We face, in the 1990's with new production methods for chips emerging, including x-ray lithography, plant costs of half a billion to a billion dollars. Despite our tremendous advantage in inventiveness, we may see, for want of capital, production and profits moving overseas.

Control of semiconductors and computers increasingly is in Japanese hands. At this time we already have a trade deficit

with Japan in high-tech electronics. The worldwide electronics market has grown from \$25 billion in 1960 to about \$500 billion today. In the twenty-first century it promises to be the world's largest industry. A good share of this market will be absolutely essential to our economic health.

Perhaps the most promising of new technological breakthroughs, superconductors, now functioning through intensive research at higher and higher temperatures, drew Japanese attention when in February of 1987 Ching-Wu (Paul) Chu, of the University of Houston, broke the temperature barrier permitting the use of liquid nitrogen (minus 300 degrees Fahrenheit) rather than liquid helium (minus 418 degrees Fahrenheit) as a cooling agent. Just four days later Japan established a superconductivity research consortium involving their leading electronic companies together with their top university and government laboratories. Again, massive capital was available. The stated objective was "to organize industry to get the jump on the West in applications and commercialization for a huge new market." By early December of 1988, the Japanese already had over 1000 superconductivity patents, 10 times more than the U.S. Their research was off limits to us.

Back to the subject of capital: Japan will continue to use its capital advantage in the grasp for greater dominance over applied science. Their capital is flowing also to basic research

in such areas as artificial intelligence, recombinant DNA, totally new materials, robotics, space exploration, and many others. One-third of all patents granted by the U.S. Patent office go to Japanese nationals. U.S. response to this onslaught is as yet fragmented and insufficient. Judging by any standard, national concern, capital deployment, government response, industrial response; we are in the process of losing the race.

The available capital of the Japanese, accumulated in the massive balance of payments flowing to them, haunts us now in the form of automobile plants being established in our own area. Here is competition on the grand scale, huge plants fabricating on state-of-the-art production lines, but there is more.

A small Tennessee steel parts producer, hoping to secure a contract from the Japanese now building an automobile plant near Knoxville, was told flatly that they would buy from noone unless they owned 51% of the supplier's business. Failing this, they would build a plant in the U. S. and manufacture their own parts.

The industrial community is so related to, and dependent on, automobile manufacture, that this practice may be visualized as Japanese tentacles reaching out across the land. The concept and the stated practice are frightening in the extreme, again keeping in mind that they have the money to do as they wish.

For anyone who doubts the massive amounts of capital available, consider these facts:

All ten of the world's largest banks are now Japanese. Nomura, Japan's leading securities firm, is twenty times larger than Merrill Lynch. One Japanese company - Nippon Telegraph and Telephone - is worth more than IBM, AT&T, General Motors, and General Electric combined. Our government now relies on Japanese investors to finance almost one-third of the U.S. budget deficit.

One hears much these days about mergers and acquisitions. The Japanese have placed themselves strategically in houses specializing in M and A's paying \$100 million for 20% of Blackstone Group, \$100 million for 20% of Wasserstein Perella and Co Holding Inc, and an undisclosed sum for 25% of Lodestar Group. Already the Japanese firm, Bridgestone Corp. of Japan, has acquired Firestone Tire and Rubber, a \$2.6 billion deal, this through Blackstone. Sony some time ago bought CBS records for \$2 billion.

An executive of Japan's second largest securities house, Daiwa, puts it succinctly: "It is one thing to compete for a share of the automobile market, but it is quite another to compete on the financial battleground. Money is the blood that runs through every economy, carrying food to the nation's brain and heart. There are those who will see competition in the field of finance as competition for the body's blood stream."

America is on the block; the Japanese are bidding and buying, and they have deep pockets.

Certainly superb industrial management has been and continues to be a prime factor in Japan's industrial ascendancy. Their CEOs are well trained, and even the Japanese point to an American, W. Edwards Deming, now 87 years old, as their mentor, as the philosophical master of quality, and the spiritual father of Japan Inc.

Deming, who earned a Ph.D. in mathematical physics from Yale, witnessed and was shocked by the extent of devastation and starvation in Japan after World War II. Upon his return to the U.S. he found that American industrialists were not interested in his theory of production. In response to a warm invitation from the Japanese, Deming went to Japan to teach the leaders of industry his mathematically measurable, humanistically oriented theory, by application of which industry could set in motion "an ever-perfecting movement towards high-quality, lower-cost operations and the eventual domination of world markets."

Deming promised the Japanese that if they rebuilt their war-ravaged industries according to his statistical and management methods, Japan could in time gain global dominance, economically. The promise was not an idle one.

Deming now states that the U.S., which he terms "the most undeveloped nation in the world," is in deep trouble. In his opinion, our balance-of-trade deficit foreshadows a severe approaching crisis that could sink our industrial base. "There

are critical times ahead for this country, the likes of which we have never seen, and most people have no idea what the trouble is."

Ford Motor Company in 1980 lost half a billion dollars in a single quarter. In desperation, they turned to Deming, who had returned to the U.S., hiring him as a consultant. A student of Deming's, William Scherkenbach, also was hired as corporate director of statistical methods. Together they were given the job of reorganizing Ford's entire process of manufacturing cars.

Deming gave seminars to senior managers, statistical control techniques were instituted, machinists and assemblers met under supervision to determine critical measurements. Seminars were conducted to alert suppliers to the new quality demands. Suggestions from production line workers were solicited, and hundreds were used.

The result was the building of the \$3.25 billion production lines for the new Taurus and Sable. Sales of these cars, which appeared in 1985 were phenomenal. Profits soared. In 1987 Ford made a profit of \$4.6 billion.

Deming's teaching, which concerns itself with the "value of teamwork, process improvement, and the pervasive power of the concept of continuous improvement" has been remarkably effective. At 87 he still teaches at New York University. Recently he said "I have 88 students in my class at NYU, and 60 of them are

Japanese, Chinese or Korean. So who's interested in improvement? Who's looking ahead?

In closing, let us examine briefly some possible remedies. The solution to this staggering balance of trade problem, assuming that we choose to face it and respond to it, will not be simple.

Long term, we must attack the educational gap. Possible approaches would be to stress sports less and the classroom more, stiffen the curriculum, extend the school year, lengthen the school day, and return discipline to the educator's hands.

To attack the twin deficits, both budget and trade, austerity measures must be considered. We must cease our dependence on foreign capital. Savings should be encouraged. Research and development by industry in non-defense areas needs increasing. The time requirement from new product conception to manufacture and marketing must be shortened to assure participation in the world's important new product markets.

Antiquated industrial management philosophy and production methods must be supplanted. Let us hope that Deming's teachings may see wider acceptance and use in our own country.

One must accept the concept that we are engaged in all-out economic warfare. The ronin are seeking their revenge and are well on their way to tasting it in the full measure of economic dominance. We need to be concerned, to be aroused, to be

challenged, to unite in spirit and common purpose. There is a marvelous strength in our diverse, free, and inventive society, which has been a model to the world. We can continue to lead.

The time is late; the threat is real. Let it not be said by future generations that, like Esau, we traded our birthright for foreign cars and VCRs.