

# From Silk to Silicon: New Patterns for Industry

By Catrien Ross

About once a month, a silk cocoon wafts down from some hidden crevice in the rafters. It gleams on the floor, a perfect oval of fine white threads, slightly grimy with the dust of decades. Turning it over in my fingers, I marvel at its lightness and durability, aware that I hold in my hand a piece of Japanese history. I am reminded that in many ways, what has taken place in this house is a reflection of changes within Japan and Japanese industry over the last century.

Farmers around here supplemented their incomes by raising silk worms. The attic, as in other houses of this type, was adapted especially for silkworm culture, with high ceilings and slatted platforms. Under contract to silk merchants, the same farmers also reeled thread and carried out paid weaving. Looms were typically located in a separate workshop, or *koba*, a large, drafty space where summers must have been very hot and the winters terribly cold.

Today, most of such looms throughout Japan have fallen silent. What was once a thriving cottage industry is little more than a memory, with *koba* empty and weaving equipment long since sold. But in a nearby village, several households even now weave neckties and scarves for famous Japanese fashion houses, and I recently visited a remote mountain area where I was startled by the distinctive clackety-clack of a loom still at work in a large *koba*.

What used to be the weaving workshop of this house is now my office. Bulky, noisy weaving machines have been replaced by desktop computers and the hum of electronic equipment. This shift from silk to silicon parallels, on a small scale, what has actually occurred in Japanese manufacturing. Where Japan was once recognized all over the world for its textile industry, it is today better known for its quality and range of

manufactured goods, such as computers. When a silk cocoon drops from the ceiling, I like to think I am experiencing a direct link between the know-how of the past and the technological expertise of the present.

## FROM MEIJI TO THE 21ST CENTURY

When it comes to modern technology, the bridges between the past and present have been built rapidly and surely in Japan. During the so-called Meiji Restoration (1868-1912), the Japanese government aggressively promoted the introduction of technological advances from the West. Until this push for modernization, Japan had remained a largely agrarian society. In the early part of Meiji, for example, Japan's population was around 35 million, with some 19 million employed. Of those, eight out of 10 people worked in the agriculture and forestry sectors. Today Japan's population is around 125 million, yet there are fewer than 4 million family farms remaining. The start of Meiji underscored the breakdown of rural structure and wealth, as the economic focus was increasingly shifted to Tokyo and large-scale industrialization.

A wonderfully detailed account of agrarian society in those early years can be found in the writings of Isabella Lucy Bird, an Englishwoman who in 1878 undertook a remarkable solo journey into Japan's interior. At that time, few Westerners had ever traveled deep into back country districts, but the intrepid Bird, accompanied only by one young Japanese guide, completed a seven-month exploration that took her as far as Hokkaido, where she stayed with the Ainu people.

Her book, *Unbeaten Tracks in Japan*, chronicles her observations, not only of the hardships of country life, but also of a nation in transition, when modern Japan was struggling to be born and bold Meiji reforms had not yet penetrated to rural areas. In Tokyo, for example, Japanese people were being

encouraged to embrace all things Western, including dress and manners, but in the countryside Bird encountered men wearing only straw hats and loin-cloths, who nevertheless bowed formally to one another in greeting.

Today, just over 100 years after Bird's journey, the majority of rural areas in Japan have been thoroughly modernized. In the last 50 years especially, the nation has become heavily industrialized. For many Japanese, the dream of prosperity based on technological prowess has been realized. What's more, the process of rapid industrialization has been emulated in neighboring countries, where analysts like to tout the Asian "economic miracle," as they likewise touted the same phenomenon as it occurred in Japan.

A troubling question, of course, is what price has been paid for such industrialization and, given the cost in terms of human health and dignity, where society is headed from now. According to a report released by the Asian Development Bank last autumn, Asia is now the most polluted and environmentally degraded area in the world. In only 30 years of intensive industrialization, Asia has lost 50% of its forest cover, with extensive wildlife habitats forever destroyed.

Since Asia accounts for around 40% of the world's flora and fauna, devastation in this region means an irretrievable loss for all of humankind. Already the air in Asia's cities is among the dirtiest to be found anywhere. The smog haze over Indonesia last October proved how easily polluted air can be carried across the seas, as drifting smoke palls affected nearby countries.

Pushing solely for economic expansion at the sacrifice of environmental considerations means that Asia is bound to pay an extremely heavy toll in terms of productivity, health losses and human suffering. There is a dark side to any

economic boom, as Japan has already discovered. While Asia copes with the dilemma of economics versus environment, Japan has entered the phase of the post-industrial society where service and communication industries are expected to replace the manufacturing industry of the recent past. Once again Japan is in transition, this time with prospects rather unclear and future goals uncertain.

**TOWARD A NEW INDUSTRY MODEL**

An alternative approach to the Western economic model was proposed by the economist E.F. Schumacher in his book *Small is Beautiful: Economics As If People Mattered*. In his essay, "Buddhist Economics," Schumacher

points out that modern economics considers consumption to be the sole end and purpose of economic activity.

Land, labor and capital—the factors of production—are taken as the means to achieve this end. Buddhist economics, on the other hand, strives to attain given ends with the minimum means. Where the economics of modern materialism sees the essence of civilization as being the multiplication of desires, Buddhist economics regards the real essence to be the purification of character. Character, in turn, is formed primarily by the work a man or woman does. In another book, *Good Work*, Schumacher persuasively argues that human work has three main purposes: 1) to provide necessary and useful goods and services; 2) to enable

human beings to use and perfect our unique gifts, like good stewards; and 3) to work in service to, and in cooperation with others, so we can liberate ourselves from our inborn egocentricity.

According to Schumacher, the viewpoint of Buddhist economics is that production from local resources for local needs is the most rational way of life. By contrast, dependence on imports from far away and the consequent need to produce for export to distant and unknown places is highly uneconomic. What's more, people who live in self-sufficient communities are much less likely to get involved in large-scale violence than those whose very existence depends on worldwide systems of trade.

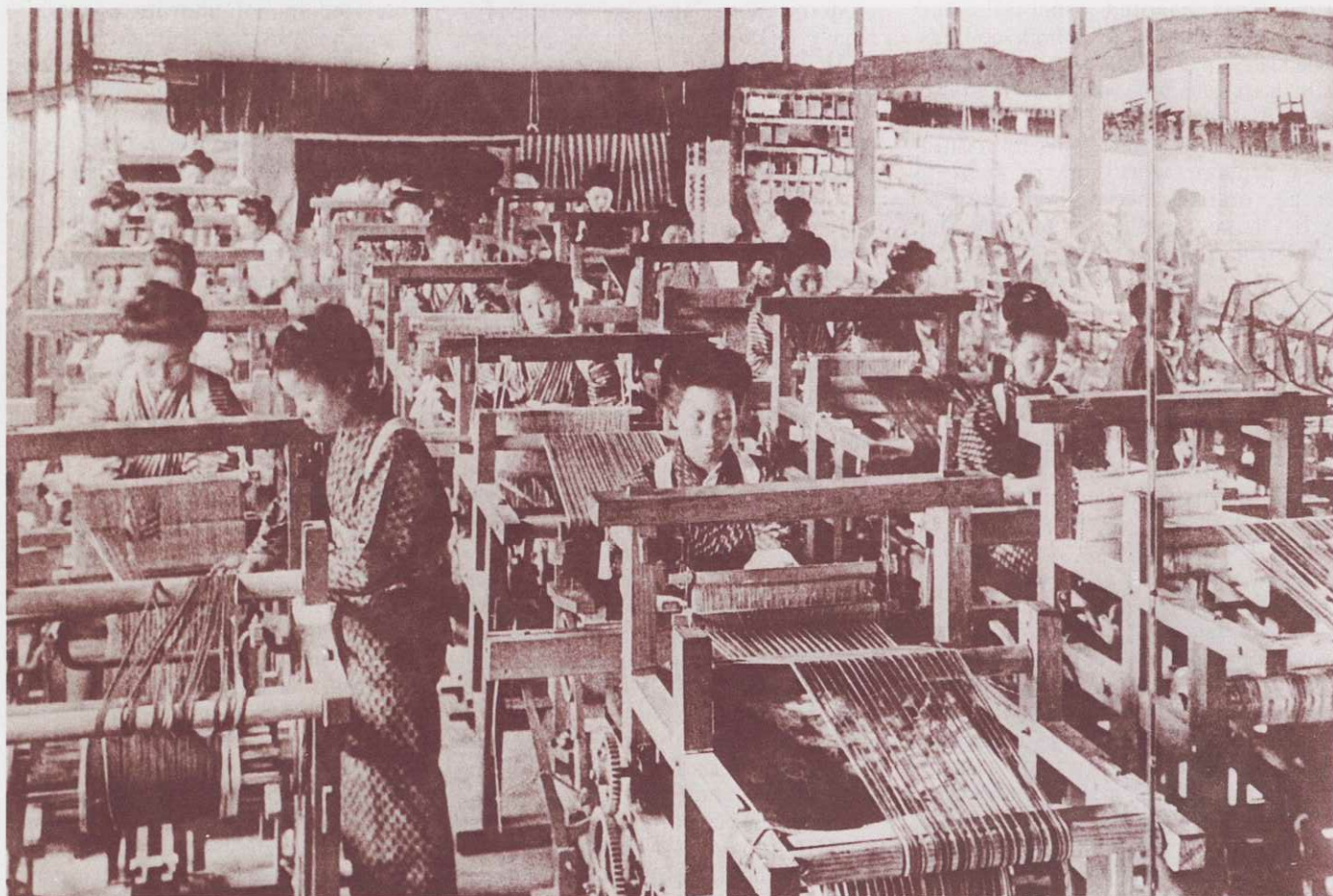


Photo: Kyodo News Service

Koba in the Meiji period: Silk textiles were dominant in Japanese industry at this time

Another critical point on which modern and Buddhist economics differ is that the Buddhist economist extends a non-violent and even a reverent attitude to all sentient beings—not just human beings. This includes trees. The modern economist, on the other hand, sees the natural world as just so much matter to be plundered and exploited. The fact that Asian forests (like European, American and Japanese forests before them) are disappearing at an alarming rate may have much to do with a lack of reverence for such living things as trees.

When it comes to creating a new model for industry, Schumacher argues that since one of the requirements of the Buddha's so-called Noble Eightfold Path is "right livelihood," there must be such a thing as Buddhist economics to enable this to come about. He questions whether modernization, which to date has been practiced without any regard to spiritual values, is actually producing agreeable results for human beings. Among the results so far have been the collapse of rural economies, rising unemployment in both the city and the country, and a way of life which offers very little genuine nourishment for either the body or the soul. To say nothing of the disastrous ecological toll, with massive environmental destruction.

In emphasizing the importance of recognizing good work—work that is good for the worker—Schumacher also stated the need for education which prepares human beings for such work. Instead of mere training for the world of modern work—essentially a world of machines, systems and bureaucracies—education should strive to answer fundamental questions like, What is a human being? Where does humankind spring from? What is the purpose of life?

All this, of course, requires metaphysical reconstruction of the way we view ourselves and our world. For the economist accustomed to thinking in terms of modernization, standard of living is typically measured by the amount of annual consumption, under the assumption that the person who

consumes more is in a better position than someone who consumes less. But the Buddhist economist, for whom consumption is merely a means to deeper human well-being, strives toward maximum well-being with the minimum of consumption.

Schumacher, now dead, originally published his writings in the 1970s, and clearly his ideas have since then been largely ignored, if they are at all remembered. Modernization, using the Western economic model, has raced full-speed ahead. Yet as developed nations like Japan struggle to design survival strategies for the 21st century, it may not be a bad idea to review what Schumacher had to say about industry and industrial organization.

Perhaps because I now live in a rural area rather than in Tokyo, I regularly encounter the results of policies which have put economics before local people, places and living things. In many mountain areas extensive logging has resulted in soil erosion and the destruction of entire ecosystems and habitats. Massive planting of the same type of trees for use as future housing material has robbed Japan of original forests and natural bio-diversity. Everywhere small streams have been lined with concrete and rivers are dammed. Groundwater supplies are contaminated. The wildlife population has dwindled to a fraction of its former strength. Agricultural methods, geared not for self-sufficiency but rather for big business, regard Nature as the enemy. Despite the significant number of rural temples and shrines, a sense of spiritual values and reverence for living beings is almost non-existent. It is easy for me to question what Japan has actually accomplished through modernization. What kind of world has Japan created, and what good work is truly available? In the absence of alternative models, where is post-industrial society headed?

#### FROM SILICON TO SPIRIT

Perhaps the next shift will be from silicon to spirit. Not in the sense of any organized religion, but spirit in its deepest meaning—as fundamental to all life and living beings. Shifting to spirit

would mean creating a world where good work is not only possible but essential. Modern economics tends to view work as a necessary evil. So anything that reduces the work load must be welcomed as an economic measure, even if it means the work itself becomes insignificant and demeaning to the worker.

Yet as Schumacher suggested, in a different sort of world it would be just short of criminal to organize any work so that it becomes meaningless, boring, stultifying or nerve-racking for the worker. In a world where spiritual values truly matter, there would, first of all, be the right kind of education that teaches human beings how to recognize and appreciate good work. Economic policies would naturally be reverent towards the Earth and all its inhabitants, human or otherwise. People would matter more than the production of goods. Trees and animals would count. Simplicity and non-violence would be the keystones of society.

Is all this a utopian dream? A look at the current world situation shows that modernization as it has been practiced until now cannot continue. Quite simply, we are destroying our world. The persistence of modern materialism, in denying a place to the spirit and spiritual values, means that there is no room for an economics that takes into account moral conscience or the basic meaning of life. Mass media works hand in hand with modern economics to degrade and devalue things of the spirit, while educational systems do little more than turn out cogs for the industrial machine. If no new model is forthcoming, where are we all going?

I do not have the answers, but like a growing number of people concerned with the meaning of human existence, I have begun to ask the questions. Meantime, the silk cocoons that fall from my ceiling provide a constant reminder of the threads that connect all life.

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