

The true rise of the rising sun

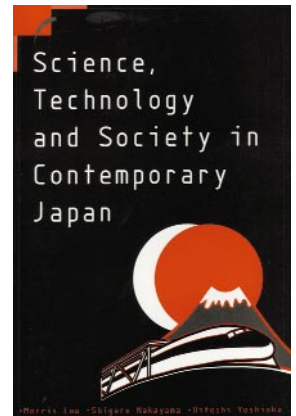
Science, Technology and Society in Contemporary Japan

by M. Low, S. Nakayama and H. Yoshioka

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What would happen if a nation, surrounded by ocean, were kept in isolation for hundreds of years while much of the world was booming with scientific discovery? This is what happened to Japan, a nation that missed opportunities to share the excitement of crucial scientific events, such as the debate over the Copernican theory, Newton's elucidation of the law of gravity, the invention of microscopes and the discovery of cells. During its 200 years of self-imposed isolation, Japan developed its own science and technology, and as a result analytical methodologies failed to prevail in this period. With the demise of feudalism in the mid-19th century, Japan experienced drastic changes when it opened its doors to the world (the Meiji restoration). Western scientific knowledge flooded into the nation, and the newly born Meiji government, eager to catch up with its western counterparts, vigorously imported these advanced technologies and used them to manufacture modern weapons, in an attempt to construct a solid social foundation. In this case, science and technology were apparently perceived by Japanese people as representing what should be learned, but not what should be developed.

Three crucial events are thought to have had a tremendous impact on modern Japan — the Meiji restoration, the defeat in World War II, and the ongoing recession that has continued to spread throughout the Far East. The first two events, being matters of life and death, forced the nation to organize and recreate itself by feverishly adopting western science and technology. Today Japan, trying to pull itself out of a crushing recession, is pouring a large portion of its budget into science and technology in an attempt to maintain its national security posture. In this instance, however, both the Japanese social system and the international atmosphere have undergone remarkable changes over the past several decades. Accordingly, as well as stimulating science and technology by funding, it is important for the Japanese society to

establish a system for nurturing, rather than importing, science. However, as this book shows, the relationship between science and society in Japan has not changed much since the Meiji era. The following are two examples of such issues described in this book.

The science discussed in this book does not include basic science, which is mainly studied in university laboratories or in national research institutes and aims to uncover mankind's common properties. Instead, the book discusses the 'invisible' science and technology used in the process of research and development, mainly by private companies. The authors boldly state that "Japan is strong in the private science of company laboratories, and much weaker in academic science". Whether this statement is correct or not, it is a fact that restrictions prevent Japanese university researchers from directly contributing their discoveries or inventions to society as entrepreneurs. Recently, the Japanese government has encouraged the sharing of technology developed in university laboratories by easing some restrictions. It may, however, be a while until Japanese university researchers can become entrepreneurs with as little psychological burden as their western counterparts.

Today, science and technology are unprecedented in their encroachment into all aspects of society, one of the most familiar examples being the medical field. However, medical practice would be mere repair work if science and technology were purely objective. The *raison d'être* of medicine lies in the fact that it embraces the necessity of constructing a sense of equality between the patient and medical staff, in conjunction with cutting-edge science and technology. Unfortunately, this has not always been the case in Japan.

As illustrated by these examples, interactions between science and society occur at different levels and between different entities. This book covers a diverse range of issues, including policy making, bureaucracy, inter-

national relations and trading conflicts, the environment, regional community, and gender-related matters, and their impact on the future development of science and technology in Japan. A brief explanation of the historical background of specific cases, occasionally interspersed with interesting episodes, facilitates understanding of the current situation of Japanese science and technology even for those who are unfamiliar with the issues. The interests not only of those in the fields of scientific history, international relations and policy making, but also of general scientists, both academic and private, can surely be met by this book. □

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