

Comparison of Eastern and Western Approaches of Making Science

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*“There is no national science as well as
there is no national multiplication table.”
Anton Chekhov, Russian playwright*

What are the differences between Eastern and Western viewpoints of making science? Do they exist or do not? We would like to try to find an answer to this question taking in comparison Japan and Western countries here.

The first and most important part of Science is thought. Before beginning any research a scientist has to realize two things: why it should be done and how it could be employed. Numerous scholars are of the view that Westerners (primarily the people of Western Europe and Northern America) and East Asians (principally the people of Japan, China, and Korea) have been maintaining very different systems of thought for thousand years.¹ Thoughts system is a fundamental difference. Western science was permanently attempted to conquer nature, dominance over it: systematizing and categorizing the knowledge; finding the laws governing each sphere of action when they were discovered and explored. While Japanese science has sought to maintain a state of harmony with nature, with the aim of reaching spiritual satisfaction and tried to integrate the knowledge gained into this general perspective.² In other words, human is a part of nature and the state of the world depends on his behavior and actions.

Thoughts system directly relates to the geographical location which in turn has an influence on the historical aspect. Historically, Japanese people have gotten used to living in circumstances of frequent natural disasters: earthquakes, tsunamis, typhoons. It seemed that Nature clearly showed people “who was the boss”. People were defenseless before the forces of nature and that has had an influence on people thoughts, their perceptions, and attitudes to nature. The Japanese have relished many wondrous facets of nature, taking each one as a beautiful, unique thing that should be cherished in daily lives. The connection between humans and nature has been regarded as a deep, mutually inspiring relationship where each influences the other. In contrast, the Europe people, historically, have gotten used to living in more peaceful climatic conditions. Natural disasters happened but not so frequently that has not prevented people from a selfish thought that they have the power to rule over Nature. The Europeans have considered nature as a potential form of destruction to humans hence it must be controlled and manipulated. For them, nature is merely a pretty big space in which humans must relentlessly impose their order.^{2, 3}

Simple and good example of a clear distinction between Japanese and European attitudes towards nature was offered by Professor Katsuya Inoue during his lecture in the frame of Russian-Japanese conference “Chemical Physics of Molecules and Polyfunctional Materials”. He gave the example of a fountain difference in Japanese and European gardens. In European fountains streams of water flow upwards or aside, which is unnaturally in usual life. While in Japanese gardens fountains imitate natural waterfalls in which water has top-down flowing.⁴

European science had arisen much earlier and under many different conditions from those in Japan. It started with antique Greek philosophy. The first law of science was formulated by Socrate. “I know that I know nothing”, he said meaning that any problem must be approached without prejudice in order to solve it. After that Aristotle systematized and categorized the human knowledge of those times and etcetera until it escalated into European science that detached itself from Christian theology. All these historical developments resulted in the key aim

of European science – searching, systematization and classification of general laws and their application for business.

Japanese science, in turn, has preserved the intellectual features of Shintoism that resulted in every object for a scientist has a value and is worth studying. Building a tradition of scientific research required Japan to borrow effectively from Western traditions and manage its own simultaneously. Long time Japanese government was scarcely dedicated to growth in science. Most scientific fields, except medicine, were restricted by the government almost until the end of the 19th century when compulsory schooling allowed more Japanese the choice of careers in the sciences and study abroad. Opportunities for Japanese to study in Europe inspired their development of research traditions, stimulated the formation of professional roles, encouraged commitment to values and norms, and shaped the establishment of modern research. In addition, studies abroad gave Japanese scientists the opportunity to learn mastery of languages as well as of technical specialties, but language facility did not solve all problems. To create and maintain a community at home, one had to share findings with colleagues. Most scientific publications of Japanese authors were written in Japanese, not in English, German, or French. It underscored that one of the problems confronting Japanese scientists was their continuing isolation from the world science community.¹⁻³

The distinctive feature of Japanese science is hard work for getting scientific results. This peculiarity has grown from hard Japanese daily life which requires hard daily work to make a living. Japanese science is a hardworking science of hard-working people. In European science, examples of such heavy work are very rare.

Finally, we would like to say that there is not the only right answer to the above question. It can hardly be said that only the Western or only Eastern viewpoint of making science is one and only sure way. Both of them have the right to exist. Anyway, science (either Eastern or Western), like art, is universal and belongs to all. The diversity of the world involves a variety of forms of its reflection. We would only like to note that we have to we must take care of nature and to finish with words of the first Asian scientist to receive a chemistry Nobel Prize – Kenichi Fukui, who said: “We pray that every field of science may contribute in bringing happiness - not disaster - to human beings.”⁵

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