Science, Past, Present and Future

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Pre-History of Science

Scientific Revolution : 16~17 centuries

R. Descartes (1596-1650)

I. Newton (1642-1727)

Are they scientists in our sense?

1. The word “scientist” was coined by W. Whewell (1794-1866) around 1840.
2. Their basic ideas were definitely controlled by Christian theology.

Science in 19th century

Science of Prototype

Research activities are almost completely confined within scientific community.

Production, accumulation, distribution and exploitation of knowledge are solely done within scientific community. Review and reward, too.

i.e. There is no client for scientific activities.

Sci. com. is isolated from outside society.

Signs of Change

1. Invention of Nylon
   by W.H. Carothers (1896-1937)
   was hired by a private enterprise, DuPont and made use of his scientific knowledge and expertise to meet the mission given by the company.
2. Manhattan Project in U.S.
   Knowledge accumulated and distributed within the scientific community of nuclear physics was exploited by the governmental sector.

The clients for scientific research appeared!

Science of Neotype

Science for realization of clients' missions appeared and has been developed in the latter half of 20th century.

science of prototype : curiosity-driven

science of neotype : mission-oriented

Science of Two Types

	prototype	neotype
topics	scientist	client
structure	hierarchical	rhizomic
leader	principal scientist	manager
team	homogenous	heterogeneous
term	indefinite	definite

World Conference of Science

WCS held in 1999, in Budapest, admitted and declared that there are four types of science:

1. science for science
2. science for peace-building
3. science for sustainable development
4. science for society

Results of S. of Neotype

The outcome of scientific research has now great influences on the life of ordinary people.

In other words, science becomes societal or political issue.

Decision-making of societal or political issues should be done democratically.

PTA = Participatory Technology Assessment

Experts and Non-experts

Within the PTA framework,

experts and non-experts should be on one, same platform and discuss issues on an equal footing.

Are ordinary people ready to meet the situation?

Are scientists ready to meet the situation?

Inter-mediator

To bridge experts and non-experts,

society should bring along the inter-mediator.

Japanese government gave financial support to three universities (Univ. of Hokkaido, Univ. of Tokyo and Waseda Univ.) to build a graduate school for the training of ST inter-mediators.