B4.2 Ethical and Political Issues in the Philosophy of Science
ABSTRACTS

Characteristics of TA institutions by the Difference of Governance
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The development of science and technology produces economic added values as we have expected from the beginning, but somehow it also causes unexpected effects such as environmental or ethical problems. As a society has mingled with S&T, an impact that S&T influences to the society has become more complex and huge, which makes concerns of the public about S&T bigger, and increases the importance of participation of civilians.

Technology Assessment(TA) was introduced in 1970 and has been institutionalized in various countries to carry out socio-economic responsibilities of S&T. But the methodologies and institutions vary depending on the purpose of TA and the culture of a society. USA has institutionalized TA at the assembly-affiliated organization and conducted with an expert orientation for offering S&T agenda to assembly man. Europe also has started TA closely related with parliament, but differences exist. While parliament governs TA directly in France and assembly-affiliated organization performs TA in UK, Northern European countries such as Denmark and Netherlands organize independent organizations for TA and put high priority to public participation. In Korea and Austria, TA has been institutionalized and performed by the administration. In the case of Korea, on the basis of “Framework Act on Science and Technology,” the Government shall assess the effects of new S&T to the economy, society, culture, ethics, environment, etc., and reflect results of TA in formulating policies. And the Act recommends participation of civilian experts and civic organizations for TA.

The purpose of this study is to compare the characteristics of TA by differences of governance. We categorize TA governance into four groups: US OTA, assembly-affiliated, independence organizations and the government. Then we examine the relationship with stakeholders (parliament-government-society-science researcher) and the role of participants. Also the aims, methodology, emphasis in assessment and pros and cons of each TA governance will be analyzed.

How can Bayesians help communications on climate change?
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One of the standard criticisms of Bayesian epistemology is that actual scientists never talk about degrees of beliefs and never update their beliefs probabilistically. Even if the criticism is true, Bayesians can reply to it with adopting a two level model of scientific methodology. However, here is a striking example of scientists who explicitly use degree of belief talk: the IPCC (Intergovernmental Panel on Climate Change) assessment reports on climate change. Those reports (especially the latest ones) utilize expressions like "very likely," "very high confidence" in a systematic manner, with corresponding numerical values (such as "very
likely" means "90-100 percent probability"). We can also see that IPCC is updating its level of confidence if we compare changing expressions throughout successive reports. The editors of the reports even issue guidance for authors as to how they should use such probabilistic expressions. This case offers Bayesian philosophers a chance to reflect on the practical implication of their philosophy. There are several points to think about. First of all, IPCC assessment reports are not collections of scientific papers or survey articles; they are primarily tools for communication between climate scientists and concerned laypeople and policy makers. The very fact that one of rare cases in which scientists explicitly use 'confidence' talk is such a communication situation gives a suggestion for the appropriate role of Bayesianism in actual science.

Second, even though the IPCC reports utilize 'confidence' talk, the details do not seem to fit exactly with mainstream Bayesian philosophy. For example, the latest report adopts a two-dimensional model of confidence, rather than an ordinary one-dimensional probability scale. How should philosophers react to such features? Is this a chance for philosophers to offer practical advice to scientists, or is this rather a chance to reconsider the mainstream Bayesian philosophy itself?

**Think Tank Research as Scientific Expertise**
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In the last few decades, the amount of scientific research that has been produced by research institutions with a think tank orientation has increased significantly. Usually, think tank research is generated especially in order to influence policy making. This increase in the volume of think tank research has had an effect especially to the traditional domain of social sciences, as it has been traditionally been quite closely connected to that kind of topics that have relevance from the viewpoint of politics and policy-making. Despite the large social and political impact of think tank knowledge, the question of how to understand scientific credentials of think tank research has not received much examination in philosophy of science. This paper suggests that the ideas developed under the discussion on scientific expertise might help us to understand better the scientific credentials of think tank research. Research produced within think tanks is very different from the traditional conception of good scientific knowledge. It does not, for instance, follow the classical Mertonian norms for ideal scientific research. Yet at the same time, think tank research has many similarities with those criteria that are traditionally given to good academic science. Think tank organisations may contain peer-review mechanisms, they may do systematic data collection or use official data, and they may have a strong pursuit of producing valid, neutral and policy-relevant information. In many cases, people employed by think tanks attempt to conduct their research in such a manner that it would produce good and neutral information on a certain policy issue. To label all think tank knowledge as an ideological tool used in order to legitimize certain political course of actions – as has been sometimes done in the critique on think tanks –
seems quite harsh. What we need, at least, is to have a more nuanced view on how think thank research is situated in the expanding field of scientific research. The paper suggests that by understanding the claims for scientific backing in the context of think tanks, the better we are to make comparisons between different forms and qualities of think tank research.

A New Problem of Demarcation: Extra-academic knowledge in academic research and the challenge of objectivity

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It is common today in many disciplines to integrate extra-academic knowledge with scientific or academic knowledge. Researchers use artistic knowledge, tacit knowledge, the knowledge of experts by experience, or indigenous knowledge in participatory, collaborative and transdisciplinary projects. Often the aim is to produce policy-relevant knowledge. Thus it is important that the results can be trusted. It is, however, not obvious how objectivity is ensured when research is partly based on knowledge that has been acquired through extra-academic means.

When extra-academic knowledge is used in scientific knowledge production, demarcation becomes important in a novel way, as the line between science and non-science can be found inside the research process. In the recent literature on demarcation, science is generally recognised as a non-unified type of activity, which makes the quest for a single demarcation criterion misguided. Nevertheless, demarcation is necessary in the new forms of research examined here.

An interactive notion of objectivity has recently been defended especially in social epistemology. It takes a research community as the unit whose objectivity is to be assessed: interactive objectivity occurs when a research community follows inclusive procedures that allow effective debates.

Instead of focusing on the extra-academic forms of knowledge that are used in research, I suggest examining the new research communities that are emerging when extra-academic knowledge is used in academic knowledge production. They typically include both academic and extra-academic members. The epistemic practices followed in extra-academic communities are not necessarily in accordance with the inclusive procedures needed for a research community to be objective. As long as a community stays entirely extra-academic, this is of no concern to a philosopher of science. However, in the kind of research projects examined here, it is necessary to ensure that extra-academic epistemic practices do not jeopardise the interactive objectivity of the research community.