Abstracts

Invited Session: Ethical and Political Issues in the Philosophy of Science

Rationality at the science-policy interface
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From an evolutionary point of view, the reason why we separate out facts from other standpoints and apply special principles (theoretical rationality) to them seems to be that such a separate sphere of facts helps us to achieve practical rationality. Separating out the facts seems to have survival value for organisms like us, given the level and character of our cognitive abilities. Science extends this advantage to the collective level by providing us with a common basis of factual beliefs. In most cases our practical purposes are well served if we base our decisions on this common repertoire of what we take to be reliable information.

But the fit is not perfect. When scientific information is used in policy decisions we have to be rational in two ways: we have to satisfy the requirements of both practical and theoretical rationality. This can give rise to two major types of conflicts between theoretical and practical rationality.

The first type of conflict arises when a higher level of evidence is required for acting as if something is true than for accepting it as scientifically valid. In such cases we tend to adjust the requirements for scientific acceptance upwards so that they coincide with the higher level that is called for in the practical decision. Such adjustments are seldom explicitly discussed but they seem to be quite common for instance in medical science.

The second type of problem arises when practical decision-making requires that we act as if some statement is true, even if the evidence is not strong enough for accepting it as scientifically valid. In such cases we typically do not adjust the requirements for scientific acceptance but instead make decisions based on what we take to be probable enough, even if it is not scientifically demonstrated. Such decisions are often guided by ideas such as the precautionary principle or “better safe than sorry”.

I propose that this implicit but rather sophisticated, two-branched strategy is indeed a highly suitable way to satisfy both practical and theoretical rationality, and at the same time keep down the conflicts between the two to the minimum.
Biodiversity and Bio-patenting: Constructive Challenges of Scientific Research
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Scientific research, especially the frontier research tends to pose challenges to our ethical intuitions and social norms. The conflict of current research practice and our ethical and social intuition is however not always destructive; it can often help us clarify the hidden assumptions in our familiar way of thinking, and nudge us to put some order in our conventional practice towards ethical and social issues. I shall consider two related issues, biodiversity and bio-patenting to illustrate how this possibility of 'constructive' challenges of scientific research can be realized, and draw some general implications.

Biodiversity is generally regarded as good, and something worthy of pursuing. The recent implementation of CBD (Convention of Biological Diversity) by Kyoto protocols exemplifies its international, institutional backing. Still, it is not very clear what 'kind' of biodiversity we need to pursue, and how to pursue (preserve vs. conserve). Also, we need to clarify what could be the fundamental moral justification for valuing biodiversity in the first place. These questions are instrumental for resolving the sensitive issues regarding access to genetic information and benefit-sharing in Kyoto protocols.

Scientific research is fundamentally based on free sharing of information among peer scientists. This allows scientists critically evaluate others’ results and build on them to move forward to the frontier of their research fields. In this sense, free sharing of information is essential for scientific innovation. We are however familiar with the idea that a patent system helps innovation by financially motivating potential innovators. I will argue that patenting sometimes actually hinders innovation in biotechnology, using the recent lawsuit case regarding BRC gene patent, and suggest better ways to nurture innovation in scientific research.