Universität für Bodenkultur Wien (BOKU)
University of Natural Resources and Life Sciences, Vienna

Institut für Rechtswissenschaften
Institute of Law

Report:
Workshop – Standardization in the Nano-Field: For the Common Good?

19 May 2017

On 19th May 2017 the workshop 'Standardization in the Nano-Field: For the Common Good?' explored the roles of and the interests behind standardization in the nano-field. The workshop was organized by *Angela Kallhoff* and *Claudia Schwarz-Plaschg* (Nano–Norms–Nature Research Platform, University of Vienna) in collaboration with *Iris Eisenberger* (Institute of Law, University of Natural Resources and Life Sciences, Vienna).

As part of the Nano–Norms–Nature research platform, the workshop discussed how far and in what ways standardization may contribute to the common good. New nano-materials and products containing manufactured nano-materials do not enter the market without going through processes of standardization. What are the goals and mechanisms of standardization? Are standards facilitative or restrictive tools? Do standards have diversity-enhancing or diversity-reducing effects? Scholars from fields such as economics, ethics, law and social and political sciences gave different insights and provided a lively discussion.

Angela Kallhoff, from the University of Vienna, opened the workshop by questioning whether standardization leads to implicitly normative orders. First, she proposed definitions for the terms 'standards' and 'standardization'. She set up the presupposition that standards and standardization are not neutral. Standards can be used for control, rationalization, facilitation, socio-economic development, sustainability, the prevention and reduction of risks, and much more, but who decides what is good and what is not? Must a standard be justified or legitimate? Do we need democratic procedures?

Henk de Vries, from the Department of Technology and Operations Management, Erasmus University Rotterdam, and president of the European Academy for Standardisation (EURAS), gave a talk with the title 'Standardization: Enabler for Innovation'. He asked whether standardization is hindering or enabling innovation. He showed the role taken by standards in the innovation process. He touched upon topics such as the terminology of standardization, conformity assessment, standardization for science-based health, safety and environmental practices, and material specifications.

Knut Blind, from the Technical University of Berlin, showed that standards are everywhere, and function as a kind of infrastructure. Standards and innovation are the major source of the growth and welfare of our economies. Blind provided an overview of four types of standards, and classified their positive and negative economic effects: standard compatibility/interoperability, minimum quality/safety, variety reduction and information. An illustration showed the recursive interdependence between research and standardization.

Fern Wickson, Senior Scientist at GenØk, Centre for Biosafety, University of Norway, Tromsø, asked whether international standards for nano-safety research are suitable. In ecotoxicology research many choices have to be made. Which organisms should be the focus of tests? What endpoints should be measured? What measures should be utilized? What timeframe should be studied? *Wickson* pointed out that there are scientific tensions within nano-ecotoxicology, for example between basic and applied science, between biology and chemistry, and between realism and control. There is a so-called 'triple double bind'. A double bind describes a situation where two choices are in tension and success in one creates unavoidable problems in the other. The first double bind is a temporal one – it is both too early and too late for standardization. The second double bind concerns how choices in standardization inevitably increase the attention given to certain aspects and reduce that given to others (a knowledge double bind). The third double bind relates to the regulatory dilemma. There are tensions between pursuing tests under real environmental conditions and using well-controlled experimental set-ups (a regulatory double bind). For responsible research and innovation, everyone should work together during the whole research and innovation process in order to achieve a better alignment of the process and its outcome. Research should be anticipatory, reflective, deliberative and responsive. At the end, *Wickson* gave some recommendations for funders, researchers, journal editors and regulators.

'Standardization as a Necessary Nuisance: Functioning and Pitfalls from a Legal Perspective' was *Thomas Jaeger*'s topic. The European lawyer from the University of Vienna spoke about the effects of standards and about how patents can create a bottleneck for competition. Patents and standards can aggravate the bottleneck, lead to overprotection and limit innovation. *Jaeger* divided nano-technology patents into two categories: those with top–down and those with bottom–up approaches. He pointed out the importance of developing a common and cross-disciplinary vocabulary.

Karsten Fischer, from the Ludwig-Maximilian University of Munich, closed the workshop and talked about 'Common Good and Civic Spirit: Political Key Concepts in Past and Present'. He took a closer look at the conceptual history of the common good and civic spirit, and started with philosophers such as Aristotle, Machiavelli, Rousseau and Robespierre. He showed how the common good has shifted from virtue to self-interest. *Fischer* demonstrated the demands of standardization and the ethical postulations. Using Niklas Luhmann's theory, he described different functional systems: politics, law, religion and economy. He looked for a place for ethics in this system and asked whether the difference between good and evil is good and evil.

The workshop showed that the goals and mechanisms of standardization and of standards are not easy to define. In order to find answers to the questions raised, an interdisciplinary approach is indispensable.

Sophie Marie Schmidt, May 2017