CRAG - IRGC Symposium 2013

PLENARY SESSION 2 GOVERNING AND COMMUNICATING UNCERTAINTY

Friday, November 22, 09:00 – 12:30, BC 420

SPEAKER ABSTRACTS AND BIOGRAPHIES

Vivianne VISSCHERS
Senior researcher in Consumer Behavior, Institute for Environmental Decision, ETH Zürich

UNCERTAINTY IN THE PUBLIC PERCEPTION OF NEW TECHNOLOGIES: THE CASE OF ENERGY RESOURCES

The public perception of a new technology has an impact on the policy around this technology. It is therefore important to know how laypeople form their opinion about a technology. In the case of energy technologies, this is currently highly relevant as many countries are currently reconsidering their energy portfolios to mitigate climate change, secure their energy supply or as a response to the nuclear accident in Fukushima, Japan. Laypeople experience uncertainty related to a new technology as they mostly do not know and understand all its ins-and-outs as experts may do. In my talk, I will discuss how laypeople form an opinion of an energy technology, look at the impact of uncertainty on public acceptance and discuss the main psychosocial determinants of public acceptance, such as trust, perceived benefits and perceived risks. Moreover, I will argue that an extreme event, such as the nuclear accident in Fukushima, mostly has little effect on the public acceptance of an energy technology. The key factors that result in a stable and positive opinion of an energy resource are its perceived benefits and people's trust in the responsible actors. Based on this knowledge, I will discuss how the perception of a new technology may be changed as well as implications that follow for communication and policy making.

BIOGRAPHY. Vivianne Visschers is a senior researcher in the Consumer Behavior group of the Institute for Environmental Decision, ETH Zürich. She holds a PhD in applied social psychology from the University of Maastricht, the Netherlands. Her main research interests are public perception of energy technologies and climate change, sustainable consumer behavior, and the perception of scientific uncertainty information. She has published in several peer-reviewed journals, such as Risk Analysis, Journal of Environmental Psychology, Risk Management, and Appetite.

David SPIEGELHALTER
Winton Professor for Public Understanding of Risk, Professor of Biostatistics, University of Cambridge

HANDLING UNCERTAINTY: WHAT CAN DIFFERENT DISCIPLINES LEARN FROM EACH OTHER?

We all have to juggle 'rational' and 'emotional' responses to risk and uncertainty, and good communication should mean that audiences are more immune to misleading anecdotes. When we are fairly happy about putting numbers on risks, then there are established methods for using words, numbers and graphics, and I shall briefly look at recent work in various fields, including communicating the benefits and harms of cancer screening. Things get trickier when we acknowledge that we do nott really understand what is going on, and have qualms about a formal analysis. I will compare how different groups – for example, in security, toxicology, health care, climate change and finance – have come up with different strategies for communicating these deeper uncertainties, and consider proposed 'scales' for uncertainty.

BIOGRAPHY. David Spiegelhalter is Winton Professor for the Public Understanding of Risk, and Professor of Biostatistics, at the University of Cambridge. His background is in medical statistics, particularly the use of Bayesian methods in clinical trials, health technology assessment and drug safety. In his post he leads a small team (UnderstandingUncertainty.org) that attempts to improve the way in which the quantitative aspects of risk and uncertainty are discussed in society. He works closely with the Millennium Mathematics Project in Cambridge in trying to develop an exciting treatment of probability and risk for mathematics education. He gives many presentations to schools and others, advises organisations and government agencies on risk communication, and is a regular commentator on current risk issues. He presented the BBC4 documentary 'Tails you Win: the Science of Chance", and in 2011 competed in Winter Wipeout on BBC1. He has over 190 refereed publications and is co-author of 6 textbooks. He is an Honorary Fellow of the Institute for Risk Management, an Honorary Fellow of the Royal College of Physicians, was elected Fellow of the Royal Society in 2005 and awarded an OBE in 2006 for services to medical statistics.

Jonathan B. WIENER
Perkins Professor of Law, Professor of Environmental Policy, and Public Policy, Duke University

GOVERNING RISK-RISK TRADEOFFS

Much attention focuses on how best to understand and govern a highly uncertain risk. But the uncertainty of the specific risk targeted for assessment and management is only part of the question. The reality is that we live in a multi-risk world, where priorities must be set among multiple uncertain risks, and, further, where each intervention to govern one risk may also change other risks (yielding ancillary co-benefits, or ancillary harms i.e. risk-risk tradeoffs). All of these multiple risks involve uncertainty. We face uncertainty on all sides. We need tools and institutions to govern the interconnected web of multi-risk choices, including full portfolio analysis with a view to reducing overall risk

BIOGRAPHY. Jonathan B. Wiener is the Perkins Professor of Law, and Professor of Environmental Policy and Public Policy, at Duke University. He is also a University Fellow of Resources for the Future (RFF). He served as President of the Society for Risk Analysis (SRA) in 2008, and co-chair of the World Congress on Risk in 2012. He has been a visiting professor at Harvard, the University of Chicago, Univ. Paris-Dauphine, Sciences Po, and EHESS in Paris. His publications include the books Risk vs. Risk (1995), Reconstructing Climate Policy (2003), and The Reality of Precaution: Comparing Risk Regulation in the US and Europe (2011). Before coming to Duke in 1994, he served at the White House and the Justice Department, and as a law clerk to federal judges Jack B. Weinstein and Stephen G. Breyer. He received his J.D. (1987) and A.B. (1984, economics) from Harvard University.

Kenneth A. OYE
Professor of Political Science and Engineering Systems, Director Emerging Technologies Program, MIT

INNOVATION AND ADAPTIVE RISK MANAGEMENT IN BIOTECHNOLOGIES

Technology development strategies and risk governance policies are commonly treated as separate spheres. This presentation will discuss how technological innovation is affected by the management of associated risks. In some cases, precautionary approaches to risk governance displace or forestall technological innovation. Past examples include EU regulations on GMOs and US limitations on stem cell research. In other cases, risks are under-addressed until health, environment, and/or security interests are compromised, with public alarm limiting acceptance. Past examples include US stasis on gene therapy after early patient deaths. Neither approach is satisfactory. This presentation will focus on adaptive risk governance as a third way of addressing risks under conditions of real and perceived uncertainty. Adaptive risk governance can be either (i) proactive, with emphasis on engaging with risks before rather than after crises are manifest or (ii) adaptive, with emphasis on adjusting policy to take account of changes in knowledge on risks. The presentation will focus on applications to pharmaceuticals innovation.

BIOGRAPHY. Kenneth A. Oye serves as co-Director of the MIT Program on Emerging Technologies (PoET) and holds a joint appointment as an Associate Professor of Political Science and Engineering Systems at MIT. He served two terms as Director of the MIT Center for International Studies (1992-2000). Prior to MIT, he served on the faculties of the Kennedy School at Harvard University, Princeton University, the University of California, and Swarthmore College and was a guest scholar at the Brookings Institution. He holds a BA in Economics and Political Science with Highest Honors from Swarthmore College and a Ph.D in Political Science with the Chase Dissertation Prize from Harvard University. Professor Oye has served as a consultant to the U.S. Departments of the Treasury and Commerce and the Export Import Bank and the Petersen Institute for International Economics on financial issues, and the United Nations Industrial Development Organization on technology transfer and climate change. He also serves as a faculty PI in SynBERC, the NSF supported Synthetic Biology Engineering Research Center.

Ortwin RENN
Professor and Chair of Environmental Sociology and Technology Assessment, University of Stuttgart

COPING WITH UNCERTAINTY: THE NEED FOR INTEGRATING MANAGEMENT AND COMMUNICATION

The lecture will conceptualize the role of complexity, uncertainty and ambiguity in risk governance. The main objective is to design and implement a systematic approach to organizational and policy learning in institutional settings that are conducive to improving risk management and make risk communication more effective. For this purpose, the IRGC risk governance framework augments the classical model of risk analysis (risk assessment, management, communication) by including steps of pre-estimation, interdisciplinary risk estimation, risk characterization and evaluation, risk management as well as monitoring and control. At each of these phases issues of uncertainty play a major role. The inclusive nature of the risk governance framework suggests different communication and involvement strategies for each phase of the governance cycle. This assists risk managers to address different aspects of uncertainty and ambiguity in relation to the nature of the problem and the specific needs of the stakeholders in each phase of the governance process.

BIOGRAPHY. Ortwin Renn serves as full professor and Chair of Environmental Sociology and Technology Assessment at Stuttgart University (Germany). He directs the Stuttgart Research Center forRisk and Innovation (ZIRUS) at Stuttgart University and the non-profit company DIALOGIK, a research institute for the investigation of communication and participation processes in environmental policy making. Renn also serves as Adjunct Professor for"Integrated Risk Analysis" at Stavanger University (Norway) and as Affiliate Professor at Beijing Normal University. Ortwin Renn has a doctoral degree in sociology and social psychology from the University of Cologne. His career included teaching and research positions at the Juelich Nuclear Research Center, Clark University (Worcester, USA), the Swiss Institute of Technology (ETH Zürich) and the Center of Technology Assessment (Stuttgart). His honours include an honorary doctorate from the Swiss Institute of Technology (ETH Zürich), an honorary affiliate professorship at the Technical University Munich and the "Distinguished Achievement Award" of the Society for Risk Analysis (SRA). Among his many political advisory activities the chairmanship of the "State Commission for Sustainable Development" (German State of Baden-Württemberg)and the participation in the "Federal Government's Ethics Committee on Germany's Energy Futures" are most prominent. Renn is primarily interested in risk governance, political participation and technology assessment. His has published more than 30 books and 250 articles, most prominently the monograph "Risk Governance" (Earthscan: London 2008).