

# The Philosophy and History of Evidence-Based Policy

Workshop organized jointly by the Danish National Committee for History and Philosophy of Science and Humanomics Research Centre, Aalborg University Copenhagen (AAU)

29 September 2017

The Royal Danish Library (Den Sorte Diamant), Søren Kierkegaards Plads 1,  
1221 Copenhagen K (Blixen Salen)

## PROGRAMME

FRIDAY SEPTEMBER 29<sup>TH</sup>

09:00-09:30	Registration, coffee and tea
09:30-09:45	Welcome from Chair of the National Committee Prof. Jesper Lützen & Prof. David Budtz Pedersen. Director, Humanomics Research Centre
09:45-10:30	<b><i>Causation and Evidence in Evidence-Based Research and Policy</i></b> Prof. Hans Siggaard Jensen & Research Fellow Mikkel Holding Vembye, Danish School of Education, Aarhus University
10:30-11:00	<b><i>Extended Expertise and Decision-Making in Hybrid Forums</i></b> Associate Prof. Kristian H. Nielsen, Centre for Science Studies, Aarhus University
11:00-11:30	Coffee break
11:30-12:00	<b><i>New Modes of Technological and Cultural Transformation</i></b> Prof. Steen Rasmussen, FLinT - Center for Fundamental Living Technology, University of Southern Denmark
12:00-12:30	<b><i>Good Scientific Conduct in Post-Normal Science</i></b> Associate Prof. Tom Børsen, Department of Planning. Section for Techno-Anthropology. Aalborg University Copenhagen
12:30-13:30	Lunch served in Søren K
13:30-14:00	<b><i>KEYNOTE From consensus-based policy to evidence-based policy: lessons from the history and philosophy of science</i></b> Prof. Miriam Solomon. Department of Philosophy at Temple University
14:00-14:30	<b><i>Science Advice in Political Expert Commissions</i></b> Research Fellow Andreas Brøgger Jensen. Humanomics Research Centre Aalborg University Copenhagen

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14:30-15:00	Coffee break
15:00-15:30	<b><i>Mapping the Policy Impact of Knowledge and Knowledge Organizations</i></b> Prof. David Budtz Pedersen & Postdoc Rolf Hvidtfeldt. Humanomics Research Centre, Aalborg University Copenhagen
15:30-16:00	<b><i>Research Monographs as Scientific Genre and Impact Generator</i></b> Prof. Frederik Stjernfelt, Humanomics Research Centre, Aalborg University Copenhagen
16:00-16:30	<b>Wrap-up and general discussion</b>
16:30-17:30	Reception

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## BACKGROUND

This is a worrying time for those who believe public policies should be based on the best evidence available. Some claim Western democracies have entered a post-factual era. On some issues, hard-won research findings have lost authority in society. There is a perceived decline of trust in scientific experts, which raises questions regarding the changing value of research with parallel changing ideologies. But just how should scientific evidence shape policy? Can philosophy and history of science be useful to understand the underlying enablers and constraints that dictate the role evidence plays in the machinery of governance?

This workshop brings together scholars from philosophy and history of science to help shed light on epistemological and historical cases of 'evidence-based' (or 'informed') policy and policymaking. The workshop will address fundamental questions, including how to appropriately apply lessons from history and philosophy of science; how science can integrate moral, cultural, and political concerns; and how we can know if a policy has produced the desired outcomes. Speakers will discuss the role of causality, evidence and objectivity, and their implications for policy. Accepted papers will touch upon the central relationship of science, society and democracy.

The workshop will cover the following main thematic areas each based around the discussion and reflection on:

1. How can we conceptualise a viable social contract between science and democracy?
2. How can we understand the various types of evidence that are needed in policymaking
3. How can we balance the provision of sound expertise with normative and political variables?
4. How can we account for ideology and politics in value claims regarding the use of science?

The workshop is jointly organised by the Danish National Committee for History and Philosophy of Science and Humanomics Research Centre, Aalborg University (supported by the VELUX FOUNDATION). The workshop brings together researchers and stakeholders interested in evidence-informed policy, science advice, causation and policymaking.

*Registration is free but required. Please register by sending an email to Runa Højgaard: [runa@hum.aau.dk](mailto:runa@hum.aau.dk) no later than September 20, 2017.*

For further information, please contact:

Prof David Budtz Pedersen, email: [davidp@hum.aau.dk](mailto:davidp@hum.aau.dk) phone: +45 3029 2974. Aalborg University Copenhagen.

# Book of abstracts

## KEYNOTE

### Miriam Solomon

Professor of Philosophy and Department Chair. Department of Philosophy at Temple University

### **From consensus-based policy to evidence-based policy: lessons from the history and philosophy of science**

The scientific consensus conference began in the USA at the National Institutes of Health. It was developed into a policy relevant institution in Denmark in the 1980s. The “Danish Consensus Conference model” was implemented by the Danish Board of Technology, and featured public (lay) participants rather than scientific experts. It had widespread international influence. Since the mid-1990s, however, another model of scientific decision making has become dominant, that of evidence-based method. Evidence-based methods devalue both expert and lay consensus, preferring to base decisions entirely on “the evidence.” Those who advocate “evidence-based” decisions typically have a hierarchy of evidence in mind, with some kinds of evidence, such as large randomized trials, ranked more highly than other kinds of evidence, such as case series, because they are thought to be less susceptible to bias. I have argued in *Making Medical Knowledge* (2015) that evidence-based methods cannot avoid appeals to group deliberation and consensus, and that the hierarchy of evidence in widest use is questionable. In this paper, I will use these lessons from the history and philosophy of science to look at recent debates over disease nosology in the Diagnostic and Statistical Manual of Mental Disorders (DSM). Disease nosology affects policy matters such health care reimbursement decisions, legal determinations of guilt, and the provision of special education. I will argue that, at present, we need both evidence (of all kinds) and democratic discussion (including experts and the public) to make responsible revisions to the DSM.

## PLENARY PRESENTATIONS

### **Causation and Evidence in Evidence-Based Research and Policy**

Professor Hans Siggaard Jensen, Aarhus University

Research Fellow Mikkel Holding Vembye, Aarhus University

Over the last three decades the field of education and educational policy has experienced requirements concerning the need for the field to be evidence-based/informed (Hargreaves 1996, OECD 2004). This denotes; 1) that policymakers and practitioners apply educational strategies, that has been validated by empirical research to work or have an impact, especially, on students’ learning outcome; and 2) that policymakers, researchers and practitioners work a lot closer where they ideally have an open dialogue about the issues practitioners, researchers and policymakers find needs to be fixed and how it is done (OECD 2004:20). Based on a presentation of theories of causation, this paper tries to illuminate how this open dialogue about what works is omitted and is instead substituted by research reports such as systematic reviews and meta-analysis’, which we argue are only relevant if based on a simplified and instrumentalized understanding of the knowledge process and interaction between research, practice

and policy. As basis for our argument, we look at six systematic reviews conducted by the Danish Clearinghouse of Educational Research (DCU) as an actual empirical example that gives insight in how the language and dialogue between researchers, practitioners and policymakers is mechanised.

### **Extended expertise and decision-making in hybrid forums: The ongoing controversy of radioactive waste storage in Denmark**

Associate Professor Kristian Hvidtfelt Nielsen, Centre for Science Studies, Aarhus University

Although several methods of radioactive waste storage have been considered, it has proved particularly difficult to come up with acceptable long-term solutions. Final storage, in particular, has encountered endured resistance for technical, political and financial reasons. Although deep geological storage seems to be the favored solution from a technical perspective, it is notoriously difficult to provide good-enough geological evidence that final storage solutions will remain secure on the time-scale needed (from tens of thousands to a million years). This paper analyzes the unfinished story of radioactive waste storage in Denmark with reference to the notion of “hybrid forums” (Callon et al. 2009). In September 2000 the Board of Risø National Laboratory decided to cease operation of the largest research reactor, DR3 (Danish reactor no. 3), and the smaller DR1. The DR2 reactor had been shut down in 1975 and partially decommissioned. Upon recommendations from Risø experts and based on an Environmental Impact Assessment, the Danish Parliament in 2003 decided to establish the independent organization Danish Decommissioning to decommission all nuclear facilities at Risø and to manage all radioactive waste in Denmark. A working group under the Ministry of Health was established to provide the technical basis for decision on a final geological repository for Danish radioactive waste. The technical basis was presented to the minister in 2008. Three years later, the Ministry decided on six sites for further environmental assessments. Political representatives and local citizens in the six municipalities where these sites were located – Skive, Struer, Kerteminde, Lolland, Bornholm and Roskilde – were invited to discuss the technical basis. As it turned out, the local authorities and citizens groups identified new problems in terms of financial consequences for local farming and tourism, while also questioning the radiological and geological expertise of the technical basis for the decision. This again resulted in new possibilities such as temporary storage at Risø and waste export being explored and an opening of the political process behind the waste storage solution. As of summer 2017, it still remains to be decided whether to pursue the long-term geological repository solution and where to do it. This paper argues that rather than seeing the radioactive waste storage controversy as a conflict between the institutionalized expertise and ad hoc local experts, we could think of it as an on-going hybrid forum where all possible dimensions are being explored by many different kinds of actors (Callon et al. 2009). As such, the controversy enriches rather than weakens the democratic process. As radioactive waste storage continues to overflow traditional boundaries between experts and non-experts and between authorities and citizens, we should recognize that the interrelated questions of who’s an expert and who’s a decision-maker on this matter have been – and should be – answered by expanding our ideas about expertise and due democratic process.

### **Good Scientific Conduct in Post-Normal Science**

Associate Professor Tom Børsen, Aalborg University

This paper investigates the relationship between ethics and different modes of science. Academic science, applied science, professional consultancy, and post-normal science are all different scientific

forms. What counts as good scientific practice and scientific misconduct are specific to the type of research being undertaken. In academic science, misconduct is defined as severe violations of Robert Merton's ethos of academic science (CUDOS). However, CUDOS does not account for science's responsibilities towards society at large or the environment, and only focus on good scientific practice in a narrow sense. This is not the case when we enter other modes of knowledge production that is more entangled with society, its institutions and stakeholders. The output of e.g. post-normal science (science done when facts are uncertain, stakes are high, values in dispute, and decisions urgent) must comply with TRUST, the ethos of post-normal science. This type of science is required to be transparent and not to hide political and financial interests, it should be robust and involve an extended peer community, it must address uncertainties, focus on long-term consequences for society and the environment, and not be one-dimensional. In this paper I compare responsibilities of scientists working in respectively academic and post-normal settings, and I discuss how university education can prepare for these responsibilities.

### **New Modes of Technological and Cultural Transformation**

Professor Steen Rasmussen, FLinT - Center for Fundamental Living Technology, University of Southern Denmark

We explore the mismatch between the rapidly evolving physical technologies on one hand and the slowly responding cultures and institutions (i.e. social technologies) on the other hand. This growing gap causes our grand narratives about the world, which mainly came from the Industrial Era, to lose their meaning. This dissonance creates confusion and resentment in most areas of our society. We believe this widening gap is a major cause of the rising post-factual culture, as science based knowledge by a growing populous becomes part of the no longer valid grand narratives. As the digital revolution accelerates, widespread automation becomes a fact, and the converging ecology of technologies including the Biological, Information, Nano and Cognitive (BINC) technologies suggests even more radical transformations ahead, this gap between our physical and social technologies is only likely to expand further. By investigating key examples from the new physical technologies and observing their current as well as potential impacts, we can see how these technologies are in the process of changing our economy, our institutions as well as what it means to be human. Perhaps most importantly, these explorations pinpoint a number of common challenges and opportunities, both for our physical and social technologies, which define an outline of the much needed, new grand narratives, including the new political fault lines that likely will define the political discourse for the emerging BINC Era.

### **Research Monographs as Scientific Genre and Impact Generator**

Professor Frederik Stjernfelt, Aalborg University, Denmark

It is well-known that the genre of monographs have been challenged by the primacy of journal papers both in bibliometrics and university funding in recent years. Still, monographs do not cease to play a central role in large fields of the human and social sciences. This paper discusses a number of questions related to monographs: are there special scientific objects and tasks which favour monographs more than papers? can a distinction be made between monographs based on primary research on the one hand, and those synthesizing amounts of already existing research on the other? can monographs play special roles in the public and policy impact of human and social science study? The paper ends with a

discussion of a recent case, that of the abolishment of the blasphemy paragraph §140 in Danish legislation.

### **Science Advice in Political Expert Commissions**

Ph.D Candidate Jonas Grøndvad. Aalborg University, Denmark  
Research Fellow Andreas Brøgger Jensen. Aalborg University, Denmark

The use of scientific expertise in policy making has many forms. It is often referred to with a large variety of concepts. Based on a scoping review of the science advice literature, the presentation will first identify specific guidelines and considerations that need to be taken into account when using scientific expertise in policy processes. Mapping the literature on science advice has pointed at specific guidelines, ideals and dilemmas in the process of science advice. Among these dilemmas identified are transparency, independence and the so-called “politicization of science as well as the depoliticization of political decision-making”. How well these guidelines are met will be explored by mapping the use of scientific experts in Danish political commissions and committees set up by the Danish Government in the period 2003-2014. In conclusion, the presentation explores what types of scientific expertise are actually included in policy processes and which types of scientific knowledge are favoured.

### **Mapping the Policy Impact of Knowledge and Knowledge Organisations**

Professor mso David Budtz Pedersen. Aalborg University, Denmark  
Postdoc Rolf Hvidtfeldt. Aalborg University, Denmark

Academic research impacts public policy and practice in numerous non-linear and interconnected ways, which are rarely amenable to precise, quantitative metrics. However, in the interests of creating new insights into the science-policy interface, it is possible to develop proxy indicators of connectivity between researchers and research-users, which may form important steps towards impacts. Understanding these connections can lead to a deeper appreciation of the factors that shape the processes leading to research uptake in policy processes. Before proceeding to quantitative metrics, it is first necessary to produce a detailed approach to identify the “raw relations” in the flow of knowledge and that emerge during the process of knowledge creation in order to find methods for assessing policy impacts from research.