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CENTRE D'ETUDE DE L'ENERGIE NUCLEAIRE

BOOK OF ABSTRACTS
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SRA-Benelux Conference

Mol, Belgium
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SCK•CEN
Boeretang 200
BE-2400 MOL
Belgium
http://www.sckcen.be

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Introduction

About SRA-E-Benelux

The mission of SRA-Europe's Benelux chapter is to promote the study and understanding of risk analysis in Belgium, the Netherlands, and Luxembourg. We support a two-way process for generating and sharing knowledge within the region, in Europe and globally, between academics, policy makers and risk professionals in the industry. Due to their strategic position, Benelux countries have an important gateway function for continental Europe. The region is particularly exposed to physical and economic risks. Significant natural and technological hazards range from flooding to gas exploitation, from financial services to the transport of dangerous goods, from pharmaceutical to agro-food production. Therefore, the Benelux chapter's upmost ambition is to make a difference for risk professionals in the Benelux region and SRA members more generally. The special objectives of the SRA-E Benelux are:

- To promote risk research and knowledge and understanding of risk analysis techniques within the Benelux countries.
- To identify and address specifically issues common to Benelux countries in the field of risk, to promote debate, and to impress upon decision-makers the usefulness of risk research, critical analyses and risk analysis in dealing with such issues. To act as a focal point for communication with risk researchers and analysts in other parts of the world.
- To facilitate exchanges of information and opinion between professionals in industry, government, universities, research institutes, and consultancies, with the aim of furthering research and improving the practical application of risk analysis and risk management.
- To convene and promote scientific and educational meetings on risk research, risk analysis and risk management in the Benelux countries.

Scope

This conference provides a forum for exchanges between experts (researchers, students, professionals) on the changing nature of risk analysis, management, and policy in the face of societal shifts (e.g. institutional, technological, environmental). Theoretical, methodological and empirical perspectives on these topics will be presented and debated.

During this event, the following topics will be treated:

- The changing nature of risk analysis, policy, and management in the face of societal shifts.
- Risk research and understanding of risk analysis techniques and approaches.
- Research and improving our understanding, and the practical application, of risk analysis and risk management.
- Issues common to Benelux countries in the field of risk research.

Programme

09:30 Welcome coffee and registration

10:00 Welcome on behalf of SCK•CEN and PISA – SCK•CEN

10:10 Welcome on behalf of SRA and SRA-Benelux
Marijn Poortvliet, Wageningen University and SRA-Benelux President

10:20 Keynote "The Science of Risk Analysis: Its foundation, scope and features"
Terje Aven, University of Stavanger and President of Society for Risk Analysis

10:50 Keynote "Unexpected psychological influences on risk and risk perceptions"
Peter Ayton, Associate Dean Research and Deputy Dean Social Sciences, City University of London

11:20 Coffee break

11:35 *Parallel sessions:*

Session 1: **Risk assessment**
Chairs: Ric van Poll and Tom Jansen (rapporteur)

- Risk or no risk? The changing influence of risk perception on decision making and response to threat | Chris Bennett
- Can argumentation analysis help to explain conflicts in expert views? A pilot study in the field of endocrine disruptor science | Sander Clahsen, Holly van Klaveren, Theo Vermeire, Irene van Kamp, Bart Garssen, Aldert Piersma, Erik Lebret
- Mapping Societal Risks in Europe: An Overview of Five National Risk Assessments | T.J. Kerckhoffs, S. Meulenbelt
- Investigating change in risk and risk in change. The case of deep geological disposal of radioactive waste | Jantine Schröder

Session 2: **Fundamentals of risk analysis**
Chairs: Anne Michiels van Kessenich and Bieke Abelshausen (rapporteur)

- The changing nature of risk research | Frédéric Vandermoere
- Truth at risk: Risking science in a post-truth age | Michiel van Oudheusden, Frédéric Claisse
- Financialisation of the Real Economy, Systemic Risk and Governance | Catherine Mei Ling Wong
- Radiation risks in future social science and humanities research: Creating a strategic research agenda and network | Tanja Perko, Catrinel Turcanu, Michiel Van Oudheusden, Gaston Meskens, Christiane Pölzl-Viol, Susan Molyneux-Hodgson, Piet Selke, Meritxell Martell, Claire Mays, Caroline Schieber, Thierry Schneider, Eloise Luçotte, Ilma-Choffel de Witte, Genevieve Baumont, Stéphane Baudé, Ivica Prlic, Marija Suric Mihic, Tatiana Duranova, Deborah Oughton, Yevgeniya Tomkiv, Marie-Claire Cantone, Sotiris Economides, Friedo Zölzer, Ted Lazo, Nadja Zeleznik, Jim Malone, Iztok Prezelj, Sisko Salomaa

12:35 Sandwich lunch

13:35 Keynote "The ethics of risk communication"
Fabien Medvecky, University of Otago and President Science Communicators' Association of New Zealand

14:05 **Roundtable: ''Europe after Brexit?** Consequences for Risk Analysis
Chair: Ragnar Löfstedt, King's College London
Speakers:
Ellen Vos , Maastricht University | Michael Faure, Maastricht University | Geoffrey Podger, King's College London and Oxford University | Frederic Bouder, University of Stavanger | Richard Podkolinski , IKEA
Perspective

15:00 Keynote "Is scientific assessment a scientific discipline? A case study of EFSA"
Hubert Deluyker, former EFSA's Scientific Advisor

15:30 Coffee break

15:45 *Parallel sessions:*

Session 3: **Risk perception and communication**
Chairs: Marijn Poortvliet and Catrinel Turcanu (rapporteur)

- Changes in public perceptions of risk: The crumb rubber crisis in the Netherlands | Marion de Vries, Liesbeth Claassen, Marcel Mennen, Aura Timen, Margreet te Wierik, Danielle Timmermans
- Comparing the power of psychometric factors and political factors in explaining opinion about nuclear energy | Edwin Latré, Peter Thijssen, Tanja Perko
- Perceptions of risk and mitigation regarding particulate matter exposure in roadwork companies: A qualitative assessment | T. A. M. Stege, J. F. B. Bolte, L. Claassen, D. R. M. Timmermans
- Evaluating the effects of the Dutch iodine distribution campaign in 2017; preliminary results from a large survey | Liesbeth Claassen, Werner Hagens
- Uncertainty and decision-making in nuclear emergency situations | Catrinel Turcanu, Tanja Perko

Session 4: **Risk and safety governance**
Chairs: Frederic Bouder and Catherine Wong (rapporteur)

- Classifying the regime of regulating healthcare professionals in the Netherlands and exploring the consequences for emerging professional groups | Maarten de Haan, Frederic Bouder, Yvonne van Eijk-Hustings, Hubertus J.M. Vrijhoef
- Navigating sociotechnical lock-in in MSM blood donor deferral in Europe: Longitudinal case study of the recent policy change in Belgium | Nathan Wittock, Lesley Hustinx
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17:00 Reports from the parallel sessions

17:20 Closing of the conference

17:25 Reception

Abstracts

Risk or no risk? The changing influence of risk perception on decision making and response to threat

Chris Bennett
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Abstract

Keywords: Risk perception, decision-making, patient safety

Most risk assessment algorithms work on the premise that it is possible to identify a particular hazard and then determine an appropriate response, depending on the particular circumstances obtaining at the time.

This paper offers evidence to suggest that this assumption may be somewhat too simplistic, drawing on PhD research looking at how NHS hospital staff recognise and respond to perceived threats to patient safety in the ward environment. The research demonstrates, first, that hazards, while recognised in the abstract, may not always be identified as threats requiring action in the here and now. Secondly, it shows that the same threat may be assessed differently by different people, and under different circumstances. Thirdly, the data offer evidence that the same threat, experienced under the same circumstances and by the same individual, may, on a different occasion, trigger a different emotional reaction and evoke a different response.

It is suggested that these findings may go some way to explaining the persistence of failures to avoid 'never events' in the NHS, and may have relevance in many other situations in which effective risk assessment and response is important.

Can argumentation analysis help to explain conflicts in expert views? A pilot study in the field of endocrine disruptor science

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Abstract

Keywords: argumentation analysis, pragma-dialectical argumentation theory, endocrine disruption, expert roles, normative values in science

To what extent do substances have the potential to cause adverse health effects through an endocrine mode of action? This question elicited intense debates between endocrine disrupting substances (EDS) experts. The pervasive nature of the underlying disagreements justifies a systematic analysis of the argumentation put forward by the experts involved. Two scientific publications pertaining to EDS science were analyzed using pragma-dialectical argumentation theory (PDAT). PDAT's methodology allowed us to perform a maximally impartial and systematic analysis that remains true to the texts' essence. Using PDAT, the argumentation contained in both publications was structured, main standpoints and arguments were identified, underlying unexpressed premises were made explicit and major differences in starting points were uncovered. The five differences in starting points identified were subdivided into two categories: interpretative ambiguity about underlying scientific evidence and/or normative ambiguity about differences in values. Two differences in starting points were explored further using existing risk and expert role typologies. We emphasize that normative ambiguity, unlike interpretative ambiguity, cannot be solved with additional research but requires multi-stakeholder approaches. Extrapolation of our findings to the broader discussion on EDS science and further exploration of the roles of EDS experts in policy processes should follow from further research.

Mapping Societal Risks in Europe: An Overview of Five National Risk Assessments

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Abstract

Keywords: Comparison / NRA / Citizen Behaviour / Europe

Accurately determining and analysing societal risks requires consideration of different aspects, including possible scenarios, behaviour of a multitude of actors, and the impact of long term developments, such as climate change and advances in technology. Multiple governments have conducted societal risk assessments in attempts to better understand different threats and determine how to face them. These threats can range from 'traditional' disasters, such as flooding, to more recent challenges, such as cybercrime. The precise content, purpose, and form of risk assessment documents may differ depending on the region and country it is produced in. By presenting an overview of some of the main elements of the Dutch, Norwegian, Polish, Swedish and Swiss initiatives, this article provides a broad understanding of the practice of conducting national risk assessments (NRAs) in Europe. Making use of in-depth case studies, the article compares the five NRAs on the following elements: main purpose, relation with assessments conducted at a regional level, the way the risk scenarios featured in the documents are structured, and whether or not citizen behaviour has been awarded any attention. Concerning this final element, the article demonstrates that there are still significant steps to be made for each of the five NRA's.

Investigating change in risk and risk in change. The case of deep geological disposal of radioactive waste.

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Abstract

Keywords: radioactive waste management, geological disposal, passive safety, oversight

High-level, long-lived radioactive waste continues to pose a risk for periods that go well beyond our human conception of time (100 000s of years). Because active safety measures are judged unreliable, unjustifiable and simply impossible over the such long time spans, experts worldwide recommend deep geological disposal as the preferred long term radioactive waste management strategy, to an important degree due to its promise of delivering 'passive safety'. Passive safety refers to the geological repository being 'safe by itself', i.e. independent of the existence of human actors. Safety is thus approached technically and delineated as an intrinsic property of the disposal system. As such, the notion of 'passive safety' entails a system simplification that allows for approaching risk in a more calculable and predictable manner than would be the case for 'active safety'. Throughout this presentation, we will lay out and analyse the ambiguity of this seemingly straightforward approach towards safety and risk. Drawing on constructivist insights from safety science and science and technology studies, we propose a more holistic vision, beyond an active versus passive safety distinction. The notion of 'oversight', as it is currently starting to surface in international radioactive waste management discourses, will be introduced as a sensitizing concept, offering potential to elaborate both change in risk and risk in change.

The changing nature of risk research

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Abstract

In this presentation I will scrutinize the scientific communication in the domain of 'risk studies'. Using bibliometric data I will identify the evolution in the number of articles and authors in risk journals. Attention will also be paid to gender distributions as well as to the topics and disciplines of the most infuential articles. In addition, a closer look will be taken at the internationalization of the field by analysing the geographic distribution of publications. Finally, in order to come to a closer understanding of the interdisciplinarity of the field, the structure of communicative networks will be analysed through the use of journal relatedness data. Preliminary results show that risk studies is a growing field of inquiry. Next to the total amount of articles also the average number of authors per paper is increasing. The majortiy of papers with multiple authors concern studies on the assessement of risks, decision (economic) analysis, and modelling issues. However, the most impactful articles – in terms of citations - are those that focus on risk perception and risk communication. Furthermore, the analyses reveal that the gender-gap clearly becomes smaller over the past twenty years. With regard to internationalization a US-bias was found. However, this bias sharply decreases over time with the turning point being the year 2005. Results further suggest that, within one interdisciplinary field such as risk studies, different forms of interdisciplinarity may co-exist, i.e.: between the 'two cultures' (technical and social knowledge) as well as within the social sciences.

Truth at risk: Risking science in a post-truth age

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[2]University of Liege, Belgium

Abstract

Keywords: Expertise, Knowledge, Post truth, Science, Truth, Risk

Present-day industrial, high-tech societies thrive on the production of knowledge and through science- and technology-driven innovation. Their foundations are challenged through multiple and unexpected failures, such as disasters and accidents that are built into societies' complex and tightly-knit sociotechnical systems. These failures unfold with a crisis of modern-day structures, as governments cannot democratically control important innovations and scientific knowledge itself is at risk. Arguably, these developments have spurred a rise of populism in present-day politics and the emergence of "alternative facts" that defy expert accounts and official information. Taking these reflections as its entry point, this paper critically considers the status and role of scientific knowledge in our "post-truth" era. Building on debates within sociology of science, it argues that new manifestations of "truth" and "fact" can urge scientists to reflexively consider their roles and responsibilities in the post-truth era and the current crisis in democracy. It illustrates how some scientists presently engage with these challenges: by publicly acknowledging the inherent uncertainties and ambiguities in scientific practice; by conceiving of, and performing, science as *storytelling;* by valuing failure and even ignorance; and by proactively engaging with nonexperts and non-expert knowledge.

Financialisation of the Real Economy, Systemic Risk and Governance

Dr. Catherine Mei Ling Wong
University of Luxembourg

Abstract

Keywords: Global finance; Financialisation; systemic risk; risk governance

This paper argues that the financialisation of the real economy produces systemic risks that are characteristically different from that of the industrial economy. Some five decades ago, the financial market was created to grease the wheels of production and innovation in the real economy. And while the activities of modern industrialisation also produced systemic risks – largely technological in nature, associated more with industrial accidents, pollution and the logics capitalist treadmill of production – they also contributed to the growth of the middle class and a broad based increase in wealth. Today, however, financial markets have become an ends in itself, serving neither production nor prosperity. In the U.S., finance generates a third of all corporate profits but only creates 4% of all jobs in the country. Wages have remained stagnant even as (financial) productivity continues to sore, and R&D investments by Big Tech firms have been declining even as they turn more to financial activities to generate revenue. This paper seeks to address the systemic risk implications of these developments and what this means for risk governance. It presents two levels of analysis – structural and temporal – and offers an initial assessment of whether financial logics are indeed compatible with the logics of sustainable development and how concepts of risk governance might help recalibrate the relationship between financial markets and the real economy.

Radiation risks in future social science and humanities research: Creating strategic research agenda and network

Tanja Perko[1], Catrinel Turcanu[1], Michiel Van Oudheusden[1], Gaston Meskens[1], Christiane Pölzl-Viol[2], Susan Molyneux-Hodgson[3], Piet Selke[4], Meritxell Martell[5], Claire Mays[6], Caroline Schieber[7], Thierry Schneider[7], Eloise Luçotte[8], Ilma-Choffel de Witte[8], Genevieve Baumont[8], Stéphane Baudé[9], Ivica Prlic[10], Marija Suric Mihic[10], Tatiana Duranova[11], Deborah Oughton[12], Yevgeniya Tomkiv[12], Marie-Claire Cantone[13], Sotiris Economides[14], Friedo Zölzer[15], Ted Lazo[16], Nadja Zeleznik[17], Jim Malone[18], Iztok Prezelj[19], Sisko Salomaa[20]

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Abstract

In the last two decades, Social Science and Humanities research on ionizing radiation have made their way into research projects and associations, notably in the area of radiation protection and nuclear emergency response and recovery. Social and ethical implications of radiation protection research, policy and practice have come increasingly to the fore through national and international initiatives (e.g. ICRP Fukushima dialogues, OECD-NEA workshops on science and values in radiation protection, European projects such as PREPARE, EAGLE, CONFIDENCE, TERRITORIES, SHAMISEN, HONEST, INSOTECH and multidisciplinary conferences such as RICOMET).

However, there is a need for ongoing dialogue between researchers, experts, civil society organizations, and the public as well as support towards multidisciplinary scientific projects. Research and innovation related to ionizing radiation must be better aligned with the values, needs and expectations of society. This situation can be observed across numerous fields and application domains: medical exposures, naturally occurring radioactive materials, nuclear waste management, environmental remediation, emergency management, and decommissioning. The challenges faced by ionizing radiation R&D are substantial and attention to the societal dimensions should be reinforced.

This presentation gives an overview of activities conducted by social science and humanities researchers in the field of ionizing radiation in order to i.) identify a strategic research agenda for SSH in radiation protection, ii.) integrate SSH research in the overall radiation protection research and iii.) establish an official network/association for the SSH community in the field.

The strategic research agenda aligns with recent proposals for more open and responsive modes of research and science policy-making, and the contemporary EU-wide policy discourses on "Science with and for society" and Responsible Research and Innovation. The integration of SSH in the radiation protection R&D is on-going process, supported by the H2020 project CONCERT and the SSH network/association establishment is at the kick-off stage.

The activities are carried out in the context of H2020 projects CONCERT, CONFIDENCE, ENGAGE and the FP7 projects OPERRA, PREPARE and EAGLE (notably the RICOMET 2015, 2016 and 2017

conferences and the Symposium on Ethics of Environmental Health), Radiation Protection Weeks in Oxford and Paris as well as in dialogues with members of the radiation protection platforms.
This presentation will give a comprehensive insight in the activities and projects in preparation in order to attract and invite the SRA Benelux participants to join to the SSH community in creating a strategic research agenda, make SSH scientifically strong consortiums for upcoming projects in the field and to actively involve the conference participants in the SSH network/association in the field of ionising radiation.

The ethics of risk communication

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Abstract

What makes risk communication moral? Risk communication and associated activities such as science communication aim to a) make risks more explicitly understood by the public, and b) engage the public in risk management and mitigation. This is generally justified by an appeal to the value of information and such activities are usually taken as an a priori morally good thing to do. Put simply, the more informed we are, the better this is both practically and morally.

In this presentation, I question the often-stated underlying assumption that more knowledge is inherently better than less knowledge. I present a number of factors that affect the moral valence of communicating knowledge, including risk communication and question the ethical limits of risk communication acts. Taking this a step further, I consider the ethics of the enterprise of risk communication more generally looking at the various ways we have tried to ensure ethical practice in risk communication, from the ethical norms such as journalistic and communication ethics, to policy moves such as responsible research and innovation. But these norms and practices can at time pull in opposite and contradictory directions, and can also create their own ethical challenges.

I therefore conclude by offering an alternative model of ethical norms for risk communication as a way to help us think through these issues.

Bio

Fabien Medvecky is a lecturer in science communication at the University of Otago's Centre for Science Communication and the sitting president of the Science Communicator's Association of New Zealand. With a background in philosophy and in economics, his research sits at the intersection between science communication, science policy, economic theory and ethical theory with a focus on the tension between the objective aims of science and the value-driven reality of decision-making.
He previously lectured at the University of Queensland's program in science communication.

Is scientific assessment a scientific discipline? A case study for EFSA

Hubert Deluycker
Former EFSA's Scientific Advisor
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Abstract

EFSA, the European Food Safety Authority, was established in 2002 as the EU's independent risk assessment body for food and feed safety. Do scientific assessments conducted by EFlSA reflect a scientific experiment? Do they in other words include a hypothesis, which is examined by competent scientific experts using appropriate evidence and employing proper assessment methods? Are the results made public such that they are reproducible?

Next, a number of characteristics legitimising this work are considered: quality, consistency, independence and impartiality, as well as transparency and openness. Other key considerations are relevance, evolving expectations and innovations, fitness-for-purpose and efficiency, along with the sustainability of the system.

Bio

Dr. Hubert Deluyker joined EFSA in 2004 where he helped build EFSA's internal scientific capacity; first at unit level and then developing (and becoming the Director of) EFSA's former Scientific Co-operation and Assistance Directorate.

More recently, he was the scientific adviser to the Executive Director. In this capacity he was a member and the chair of the EU Network of Scientific Advice Agencies (EU ANSA), a member of the Global Coalition of Regulatory Science Research (GCRSR), and a member the Chinese Food Safety Authority's (CFSA) International Scientific Advisory Board.

Reference: http://onlinelibrary.wiley.com/doi/10.2903/j.efsa.2017.e15111/pdf

Changes in public perceptions of risk: The crumb rubber crisis in the Netherlands

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Abstract

Keywords: Risk perception, risk communication, crisis communication, uncertain risk

Communicating about risks during risk events is often highly complex. This is even more the case if the risk is uncertain and there is a mismatch between the risks portrayed in the media and the risks according to experts. The case of crumb rubber (or rubber granulate) in the Netherlands is a good example of such a risk event. During a period of ~three months in 2016, there was a recurrent debate in the Dutch media regarding the possible health risks of practicing sports on artificial fields with crumb rubber infill. In this period, the National Institute for Public Health and the Environment (RIVM) conducted an extensive research, and concluded that the health risk of exposure to chemicals in crumb rubber is practically negligible, and therefore it is safe to practice sports on fields with crumb rubber infill. We studied the change in lay risk perceptions with regard to this (at first) uncertain risk, in a short period of time. In addition, we investigated how the RIVM's communication with regard to the crumb rubber research was interpreted and evaluated. Two surveys, one in December 2016 and one in January 2017, were conducted via an online survey panel. The study sample of a total of 1031 respondents consisted of 507 respondents representative for the Dutch population (18 years and older), 357 parents of children of 18 years or younger, and 167 parents known to have children of 18 years or younger who play soccer. The results will be presented.

Comparing the power of psychometric factors and political factors in explaining opinion about nuclear energy

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[3]SCK•CEN, Belgian Nuclear Research Centre

Abstract

In order to explain opinion formation on nuclear energy, this empirical research integrates political factors into the psychometric risk model. This allows us to see the influence of the often-used psychometric variables such as risk or benefit perception and trust on opinion about nuclear energy, vis-à-vis factors like vote intention. More specifically, this research analyzes i) whether people use partisan cues when forming an opinion about nuclear energy, ii) how they use them, and iii) the influence of traditional risk research factors on opinion about nuclear energy.
For this research we use the SCK•CEN barometer of 2015. This is a largescale public opinion survey on perceptions and attitudes towards nuclear technologies in the Belgian population (CAPI). The sample we obtained (N=1028) is representative of the population on gender, age, province, education and habitat. The interviews were conducted in Dutch or French.
Our results show that the psychometric factors like benefit perception, risk perception and trust explain more of the variance in the individual opinions regarding nuclear energy than the political factors. However, some people also use partisan cues when forming their opinion about nuclear energy. We found that partisan cue taking occurs more often among the voters of the parties occupying the clearer and opposing stances in the nuclear debate, i.e. the issue owning parties and the policy defending parties. Cue taking voters of these parties adopted a somewhat more extreme opinion in the direction advocated by their preferred party. Hence, parties seem to have a polarizing impact on public opinion on nuclear energy. Moreover, partisan cue taking is not a low information heuristic as it occurs more often among the voters of the more vocal parties, and among respondents more strongly involved on the issue of nuclear energy and more issue specific knowledge. These results therefore contradict studies that claim that partisan cues serve as low-information heuristics.

Perceptions of risk and mitigation regarding particulate matter exposure in roadwork companies: A qualitative assessment

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Abstract

Keywords: Particulate matter; Roadwork companies; Risk perception; Information needs; Toolbox meetings.

Particulate matter (PM) exposure is an important source of respiratory and cardiovascular diseases, and it is highly prevalent in dense traffic situations and as quartz when drilling or sawing. Blue-collar workers in roadwork companies tend to be at risk and may not be well-protected. This qualitative study investigated perceptions of risk and mitigation of employees in roadwork (construction and maintenance) companies concerning PM, as well as their views on methods to empower safety behavior at work. We held semi-structured interviews with twenty-two employees (three safety experts, seven site managers and twelve blue-collar workers) in three different roadwork companies. We found that most workers are aware of the existence of PM and the most important exposure prevention methods, but that their knowledge about PM seems to be fragmented and incomplete. Moreover, they do not always protect themselves against PM. We found multiple factors that influence the ability or willingness of employees to work safely, such as work experience, communication within the company hierarchy, and strictness of rules. Roadwork companies carry out 'toolbox meetings', periodical meetings related to work safety; they are mandatory and potentially very useful information sharing tools. We recommend the construction of a PM toolbox tethered to the individual needs of companies and employees. If the individual and collective needs of employees are met, the 'toolbox meetings' that are held in companies could be a valuable framework for designing new content related to PM.

Evaluating the effects of the Dutch iodine distribution campaign in 2017; preliminary results from a large survey

Liesbeth Claassen [1,2], Werner Hagens[1],

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Abstract

In case of a nuclear accident, radioactive substances can spread through the air. One of those substances is radioactive iodine. Radioactive iodine can enter the body through inhalation and absorption by the thyroid gland which can cause thyroid cancer in young people. The risk can be reduced, especially in babies and young children, by taking iodine tablets if radioactive iodine releases are expected in the vicinity. Ingestion of iodine tablets saturates the thyroid gland with iodine and prevents the absorption of radioactive iodine. Although the chance of a nuclear accident is very small, in the fall of 2017 the Dutch government distributed iodine tablets in about 1.2 million households in the vicinity of a nuclear facility as a precautionary measure. We present preliminary results from a large survey (n ±5000) evaluating the effects of the iodine distribution on the concerns, comprehension of risk and mitigation, evaluation of information, trust in risk management and adherence to recommended behaviour (storage), in and outside the distribution areas.

Uncertainty and decision-making in nuclear emergency situations

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Abstract

Keywords: nuclear emergency; protective actions; expected behaviour; CONFIDENCE

Understanding people's concerns, motivations, beliefs and value judgments underlying individual decision-making in an emergency situation, is crucial to improving the governance of nuclear or radiological accidents and incidents.

This contribution provides results from an empirical study on expected behaviour in nuclear emergencies and related information needs. The study draws on social psychology models, including the Protective Action Decision Model, the Protection Motivation Theory and the Theory of Planned Behaviour. It aims at clarifying how people expect to react in an emergency; what their perception is of, and willingness to follow, official advice concerning protective actions; and which factors influence expected behaviour. Potential explanatory factors investigated include descriptive norms, hazard and resource related attributes, self-efficacy aspects and trust in nuclear actors.

Data underlying the study originate from a large scale opinion survey in Belgium among different categories of lay publics: general public and people living in the vicinity of nuclear installations.

The study is carried out in the framework of the European project CONFIDENCE (COping with uNcertainties For Improved modelling and DEcision making in Nuclear emergenCiEs), specifically the research task addressing social, ethical and communication aspects of uncertainty management.

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Classifying the regime of regulating healthcare professionals in the Netherlands and exploring the consequences for emerging professional groups

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Abstract

Keywords: healthcare regulation, risk classification, risk policy, task-shifting, risk regimes

Multiple regimes exist to regulate healthcare professionals [1]. In 2006, de Bie [2], classified the regulation of Dutch healthcare professionals as 'mixed'. However, a re-evaluation of this classification is needed for three reasons. First, much has changed since that time, for example the creation of new professional groups and the possibility for more flexibility within the system (e.g. through task-shifting). Second, a critical element which has become increasingly important within the debate on healthcare regulation was omitted from her initial classification, namely: the concept of 'risk'. Third, previous classifications on Dutch healthcare regulation have neglected whether this system is effective.

By (re-)classifying the Dutch regulatory regime we aim to provide more insight into the current system as well as explore in greater detail which consequences this regulatory regime might have for emerging professional groups. A regime description is given based on the classifications used by Stepan [1]. Secondly, the risk regulation regime is evaluated using the classification provided by Klinke & Renn [3] and are aimed at to identify whether the regime uses: risk-based approach(es), precautionary approach(es), and/or, discourse-based approach(es). Thirdly, an assessment is made whether the regime meets the requirements for good regulation as defined by the UK's "Better Regulation Executive" [4]. Finally the consequences of this regime for emerging professional groups in the Netherlands are discussed.

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Navigating sociotechnical lock-in in MSM blood donor deferral in Europe: Longitudinal case study of the recent policy change in Belgium

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Abstract

Key words: EU blood supply safety governance, sociotechnical imaginary, sociotechnical lock-in, MSM, blood donation

In the EU, donor-sourced blood procurement depends on the public's trust in national Blood Establishments. Repeated criticism to the policy excluding Men who have Sex with Men (MSM), however, hampers that trust. In response, numerous member states relaxed their policies. Previous research in Science & Technology Studies highlighted the sociotechnical nature of such controversies, and the sociotechnical lock-in that can result from attempts to surpass explicitly political claims through the use of epidemiological imaginaries. We aim to contribute to this field by specifying vital conditions allowing policymakers to navigate sociotechnical lock-in.
Focusing on Belgium, a critical case where MSM lifetime deferral was recently changed to a twelve month deferral, we adopt a longitudinal, interpretive method focusing on discourses in key policy recommendations of the Belgian High Council for Health and the public debate evidenced in newspapers from 2003 (first EU Blood Directive) to 2017 (MSM1 implementation). To answer our main question, we discussed how the debate unfolded, the problem definition, key events in the debate, and the evolution of stakeholder positions.
We argue that embeddedness in higher governance levels, international events, (new) scientific evidence, and heightened attention to MSM deferral were vital to the development toward policy change. Two important turning points were the Minister of Health's addition of notions of citizenship to the debate in 2015, opening up the problem definition, and the US FDA's 2014 turn in the debate, inspired a study by the Blood Establishment, which made the previously unchallenged necessity of MSM deferral a 'remarkable problem'.

Coping with evolving risks and crises: Producing a REX framework for crisis management in Belgium

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Abstract

Keywords: Belgium, crisis, learning, REX, Risks

Our technological cultures are increasingly confronted with natural catastrophes, industrial disasters, intentional unlawful acts, or a combination of these elements. As such risks, potentially disrupt societies, methods analyzing previous events and producing useful lessons and recommendations are developed to improve the capacity to cope with new crises and the risks that accompany them. Such methods are comprised within the concept of Retour d'experience (REX), which is now an indispensable component of safety and security management. For many years, various industries (e.g. aviation industry, hospitals, nuclear research…) have formalized systematic REX practices aiming at analyzing accidents and incidents. Furthermore, standardized and centralized REX methodologies have been institutionalized in countries such as France. In contrast, Belgium does not have a single REX system, even though many Belgian actors involved in crisis management explicitly call for one. Through an examination of REX approaches in France and in industries and through post-crisis Belgian practices analysis (emergency exercises observations and crises protagonists interviews), this paper seeks to produce a REX framework enabling efficient individual and collective learning from crises and the implementation of preventive measures to better manage evolving sociotechnical risks in the face of a crisis. It argues that in order to be appropriated by the field actors and tailored to the Belgian context, the framework has to be developed and rehearsed with them.

Modelling risk in synthetic biology with LEGO® Serious Play®

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Abstract

The development of novel technologies such as synthetic biology often raises concerns about environmental and other risks. Responsible Research and Innovation (RRI), as a governance framework supported by many policy makers in the EU and UK, aims to ensure that societal as well as technical risks are addressed at an early stage. However, defining risk is a complex process, and importantly within an RRI framework, should not be limited to the potential risks of the technology itself. Rather, consideration must also be given to the purpose of technological innovation, the people involved, and the context in which a new technology will be developed and embedded. This paper explores how synthetic biologists, by using LEGO® SERIOUS PLAY® to define 'risk' according to their own concerns, more often chose to discuss systemic risks to science as a system of knowledge, questioning the purposes and motivations of their own research, and the effect of doing cutting edge research on their psyche and future career. We argue that RRI as a science governance framework, and synthetic biology as a science, can only succeed if these wider concerns of scientists in the field are taken as seriously as other potential risks in emerging research.

Comprehension of the concept of 'uncertain risk'. A qualitative study among different societal groups

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Abstract

Communication about risks may easily lead to miscommunications and misunderstanding. One of the concepts that is difficult for risk communication is the concept of 'uncertain risk'. This research aims to gain insights in how the concept 'uncertain risk' is understood in the environmental health domain by different societal groups.
We conducted in-depth interviews with the general public (N= 40) and online open-ended questionnaires and online focus groups with scientists, policy makers, communication experts and medical experts (N=53).
Results show that the understanding of the concept of 'uncertain risk' by the general public, scientists, policy makers and communication experts varied within and between groups. Representatives of all groups described their understanding of the concept based on uncertainties related to risk assessment. Differences between groups pertained primarily to their personal (or professional) situation. That is, scientists based their descriptions only on uncertainties in risk assessment. Policy makers frequently indicated that these uncertainties caused uncertainty in risk management. Representatives of the general public frequently put forward aspects that pertained to personal relevance (e.g. a lack of personal control). Finally, communication experts frequently identified aspects that were important for other groups to which communications may be addressed (e.g. 'uncertainty about risk management).
Finally, we explore the implications for risk communication in case of uncertain risks.

How differently risks are perceived and approached in Islam?

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Abstract

Keywords: Risk perception, Risk governance, Islamic worldview.

Believing in both factual and socio-cultural dimensions of risk and that it is a value-laden concept, religion emerges as an important source of risk conception and thus action at individual and collective levels, as well as for risk governance. Based on Islam viewpoint, risks should should be distinctively conceived and approached as:
1) The Islam's monotheistic and otherworldly view brings about different (divine) values and goals and also a distinct perspective on consequences stretching out to the otherworld, which has been for example evident in the high-level decision making of Iran regarding the Middle-East during the last decades;
2) Acting in divine duty and being duty-bound not only may make different individual and public choices than a secular worldview, but also provides an individual calmness arisen from trusting in God and relying on him just after making a decision and acting upon. Additionally, in ethical dilemmas (and supposedly in general too), alternatives are better narrowed down, especially at an individual level, which alleviates psychological burden of ethical decision making.
Researching in this regard not only could shed light on risk perception of Muslim communities and societies (and in general of other religious communities) to better understand them and their distinctions, but also may provide an alternative source of knowledge to build upon. Furthermore, while above distinctions seem to be merely applicable at an individual level, they are well relevant for communities, societies and governance, as it is shown by real-world examples.