SRA EUROPE

UNIVERSITÉ DU LUXEMBOURG

CONFERENCE ABSTRACTS

Kathleen Baker & Lianne Lefsrud | "Using Process Safety Management tools to identify and assess oil sands tailings hazards"

In the Canadian mining industry, there have been 49 dangerous occurrences from 2000 to 2014 associated with tailings facilities (Hoekstra, 2014). At least two of these occurrences resulted in deaths at the oil sands tailings operations. Upon further investigation it was found that there is a dearth of information on worker safety around tailings storage and transport facilities. The majority of the research to date focuses on the potential for catastrophic failures and uncontrolled releases that could affect the public and the environment. However, this work and the mitigation strategies implemented are not preventing the occurrence of tragic worker fatalities and other incidents due to loss of containment events and other hazards near tailings storage or transport facilities. These incidents illustrate the need for increased attention for worker safety in the oil sand tailings operations as well as enhancements to current hazard identification tools.

Workers in the oil sands tailings operations are exposed to hazards like loss of containment and line of fire just like in any other refinery or upgrader. The difference between traditional process industries and oil sand tailings operations are the pressures, volumes and temperatures. Process Safety Management tools and principles like: Root Cause Analysis, Event Trees and Bow Ties, are well used in the process industry to identify and manage hazards, but their application is not widely used in the oil sands tailings operations. In this research, Bow Ties are being used to visually identify unwanted events, potential causes, consequences and the controls to prevent unwanted events from occurring. Seven unwanted events / hazardous activities in the tailings operations have been selected for the Bow Tie analysis. They include: (1) pipeline leak, (2) long term exposure, (3) soft ground, (4) emergency response, (5) issues while working on water, (6) issues while working on ice, and (7) operating spill boxes. These hazardous activities were selected based on a tailings safety expert hazard inventory, company incident databases and based on feedback from interviews with frontline workers, safety professionals, engineers and leadership at multiple oil sands operators and regional contractors.

Bow Ties illustrate the controls that are currently in place as well as areas for enhancement. They also serve as a tool for continuous improvement as companies have documentation of the controls in place to prevent an unwanted event and can revisit them to ensure the effectiveness of these controls.

Additionally, they show any over-reliance on one type of control such as administrative or personal protective equipment. This process has helped to facilitate the sharing of tailings safety best practices among oil sands operators and regional contractors. Findings from this research will be used to create oil sands industry best practices for tailings safety and can be applied to the oil sands industry and mining industries more broadly.

Kathleen Baker & Lianne Lefsrud | "Deviance? Wrongdoing? Myopia?"

With large scale incidents such as the Kunshan dust explosion in 2014, Fukushima-Daiichi nuclear disaster in 2011, and BP Deepwater Macondo Blowout in 2010, organizational wrongdoing seems endemic. However, organizational wrongdoing is often neither obviously remarkable, intentional, nor has clear-cut responsibilities and latent causes. Most people want to work hard to support their families and lifestyles, while doing a good job; they are not intentionally causing harm at work. Despite this, there were 99 workplace fatalities in Alberta in 2017 (OHS, 2018) and almost 1000 in all of Canada (Grant, 2017), indicating that incidents are still happening. When investigations are completed, many of the latent causes go back to hazards not being identified or not being effectively controlled or managed on an organizational level (Canadian Transportation Safety Board, 2014). This phenomenon has been called 'normalization of deviance' or 'organizational wrongdoing'. However, 'deviance' has a negative connotation and can be associated with purposeful negative actions. There is a need for an alternative term to discuss the normalization of hazards to facilitate more constructive conversations. Palmer (2012) states that there are two distinct paths that lead to organizational wrongdoing, perverse structures and processes and pervasive structures and processes. However, this theory does not fully explain the phenomenon that we are seeing in oil sands tailings operations with the identification, management and control of hazards.

Following a workplace fatality in the oil sands tailings operations, we completed 140 interviews with frontline workers, leadership, safety professionals and regional contractors. Our preliminary analysis suggests that organizational wrongdoing is caused by a combination of factors – ambiguity, unintentionality, diffuse responsibility, and deniability – leading to unintentional blindness or organizational myopia. The consequence of this myopia is that hazards not being identified, understood, evaluated, or effectively controlled. We will discuss our findings, outline our theoretical model, and suggest methods of combatting this organizational myopia.

Kathleen Baker & Lianne Lefsrud | "Communicating risks across organizations and to contractors in the oil sands tailings operations".

The oil sands operations are made up of many working groups that each have an important role to play for the extraction and production of bitumen. Each of these operations are dynamic, demanding and required for oil sands companies to run an efficient operation and to be profitable. These qualities can lead to a very effective workforce, but they can also result in some silos between the different working groups on large sites like the oil sands tailings operations. These silos can cause breakdowns in communication across organizations and to contractors and can make effective risk communication challenging. Additionally, workers are voluntarily exposing themselves to unidentified hazards, potentially, without knowing the risk level. This has recently been illustrated with the fatalities in the oil sands tailings industry related to unseen and unknown ground hazards at tailings storage and transport facilities. Thus, in this research we ask: How can we identify gaps in communication between different working groups and effectively disseminate information about these risks not only to workers who interact with these facilities daily but also to contractors and other workers who are intermittently exposed?

We are analyzing four datasets to determine similarities and differences and to identify areas for enhanced risk communication. These four datasets include: (1) tailings safety expert hazard inventory, (2) interviews with frontline workers, safety advisors, supervisors, leadership and contractors, (3) ground hazard inventory and (4) company incident databases. The aim is to determine the hazards that workers see on the job site and compare these responses to the tailings safety experts, geotechnical analysis and the incidents that are being recorded. This will allow for the design of effective risk communication strategies in the oil sands operations, particularly in tailings

The traditional risk communication principles to disseminate information to external stakeholders will be applied to an internal audience like workers in the tailings operations. The aim is to enhance the dialogue regarding risks between workers, contractors and across the organization. This will be achieved by increasing the level of familiarity and decreasing the risk tolerance associated with the hazards on site through tailings specific training, formal mentorship programs and a visual ground hazard database. Additionally, increased communication should help to break down the silos to allow an easier flow of information between working groups in the oil sands.

Tom Becker |"Evidence Based Policy-Making or Policy-Based Evidence-Making? Failure and risk in EU sustainable urban policy transfer initiatives"

Contemporary public policy has been subject to two notable developments: first, concerns for less ideology-led decision-making have generated evidence-based decision-making grounded on rigorously established scientific evidence. Second, under the guise of trans-territorial 'best practices', knowledge about policies, arrangements, institutions and actors is becoming increasingly mobile. European sustainable urban development policies, which form the empirical ground for my reflections, are an appropriate case in point for such evidence-based urban policy transfers, albeit with rather limited results when measured in terms of both the underlying positivist epistemology and the significant EU investments in this domain.

This paper adopts a social constructivist paradigm that resonates well with critical insights from literatures on evidence-based policy (Head 2017, Cairney & Oliver 2017), urban policy mobilities (McCann & Ward 2012, 2013) and policy failure (Sanderson 2002, McConnell 2010). It asserts that the notion of 'policy-based evidence-making' characterises more aptly the way 'best practice transfer' is used to underpin the (re-)framing and (re-)assembling of policies and the partial corruption of scientific criteria such as replicability, predictability and neutrality. This conceptualisation of 'best practice transfers' has emerged out of several considerations: i) because policy transfer processes are complex, situated and dynamic, they culminate largely in unclear and unpredictable effects. They shape the processes through which policies travel, influence the borrowing and learning and lead to conditions of instability and uncertainty, thus dismantling the predominant success-failure binary. ii) As a result of plausibility and political practicality - two mutually independent causal mechanisms at work in the process of evidence making - positive and persuasive evidence is established. iii) By accounting for more diverse understandings of knowledge, the modernist polarisation between knowledge and non-knowledge blurs, thus enhancing the complexity and the political character of evidence production further.

Against this background, the assessment of the framings, workings and the potential outputs of best practice transfers requires re-examination. We need to search for ways to fully account for and embrace the potential of socially constructed failure as well as the risks and opportunities involved. I therefore advocate the use of more innovative approaches in EU-induced best practice transfers such as co-production and co-evaluation – two postmodern approaches that at present are still widely absent from conventional policy transfer literature and practice.

Jean-Luc Bedard | "Institutional practices on 'protection of the public' by regulated professions' organisations in Canada: the case of French professionals' entry into professional practice in Quebec."

Regulated professions aim at protecting the public through rules and by-laws that define membership conditions and parameters of professional practice. These regulatory norms apply to competencies and professional acts that their members should be able to perform adequately. Admission of foreign-trained professionals challenges these regulatory systems. On the one hand, economic and legal arguments put pressure for a swift admission of these already trained professionals, (almost) ready to practice and integrate local workforce. On the other hand, professional regulators that control access for public protection need to ensure that the local standards are met. In this context, most professionals are required to successfully attend some form of practical training that ensures actual competence in their new country. How do professional regulators measure the gap and define consequent training requirements, hence assuring appropriate risk management? Cases of French professionals (doctors, nurses, engineers, architects and lawyers) show varying admission requirements in Quebec. Moreover, contrast with examples from 3 provincial jurisdictions in Canada (British Columbia, Alberta, Quebec) will be used to illustrate the challenges surrounding this arbitration. This analysis also raises important methodological issues, often overlooked. Our analysis tends to show some contradictions within the neoliberal approach that has fostered transnational mobility of highly qualified, regulated professionals, its most recent realisation taking form in the Comprehensive Economic and Trade Agreement (CETA) between EU and Canada.

Chris Bennett | "Dealing with uncertainty – but which uncertainty?"

Informing decision making in the face of uncertainty is a key objective of risk research. Uncertainty is strictly defined as being faced with multiple possibilities for choice. However, in the context of risk research, uncertainty carries with it a fear of making a wrong decision in response to a threat. Arguably, however, uncertainty is not just about fear of the consequences of a particular decision on the focal threat, but about a nebulous and frequently unarticulated concern about the effect of that response on all the other threats perceived in the environment.

This paper uses examples from empirical research in the NHS and also from historical and contemporary accounts of decision making under uncertainty. These demonstrate that although the process of addressing an identified threat is clearly important, it is equally, if not more important for people to recognise and consider which other threats in their environment any decision may affect. They also show that individuals do not always take these into consideration, either because they are unaware of the existence of other threats, or they fear to examine the potential consequences of choice.

These processes are illustrated by including feedback loops in a previously presented model which conceptualises the decision making process as involving two levels; first selection of the focal (most important/imminent) risk from many potential threats, and secondly selection of response to the selected risk.

Although risk research cannot of itself reduce uncertainty, it is suggested that models such as the one suggested can be valuable to those who have to make decisions in two ways. First, by assisting people to identify other threats in their environment in addition to the focal risk, and then by helping them to consciously reflect on the risks these pose and the extent to which these may be impacted by the choices they make. This process, it is argued, can help to reduce a fear of uncertainty which, because ill-defined, might impel them to take what turn out to be critical decisions without due consideration of the consequences.

Constance Carr & Markus Hesse | "Smart Cities and risk: When digital urban development gets political."

"Smart cities" has recently become a hegemonic buzzword and leading concept in urban discourses. In such contexts, smartness has at least two different meanings and understandings. On the one hand, it could refer to the broad set of technologies introduced towards steering infrastructure and promoting the intelligent use of resources. On the other hand, it may refer to attempts at improving the built environment by clever planning approaches. While it is no surprise that the smart-cities agenda is heavily pushed by the private sector (tech companies) who view digitizing urban environments as a burgeoning market for their products (Kitchin 2015), it is irritating to what extent this concept is featured by cities and municipal associations.

Clearly, there are a few externalities, uncertainties and risks associated with the hype and the rash introduction of smartness. Kitchin (ibid.) pointed at a number of undesirable externalities: a) the commodification of public services, as city services are administered for the benefit of private profit; b) technological lock-in effects that may render the city less resilient against bugs, viruses, crashes, and

hacks, which can be difficult to reverse; and (c) digitalization endorses processes of standardization that overlook specificities of places, and fixes municipal administrations to narrowly defined technocratic modes of digital governance. The biggest uncertainty is emerging from the diverging logics of corporate management and public administration and policy, assuming that the former will remain more powerful than the latter, posing a threat to the common good. Last but not least, there is the risk that municipalities make themselves dependent on corporate devices and technologies, without the ability to improve their desired development trajectory. Our paper will illustrate this problem by presenting the case of Luxembourg (both capital city and national government), whose mainstream discourses on smart city are primarily concerned about products (and technologies), rather than discussing their specific paths and problems of urban development.

As a backdrop, we will also present some of our preliminary observations of the digital neighbourhood that Alphabet Inc. (parent company of Google LL) is planning in Toronto, Canada. While Alphabet Inc. claims that it will deliver the best smart city ever, a series of recent events have shown that the deal is far from done. As local and international observers alike have identified a number of unarticulated risks, the whole plan has become political. This delivers poignant messages for practitioners of smart city development in Luxembourg. Our main question then in this presentation is whether, given these background events, the idea of the smart city is useful at all, and if yes, what its particular offering could look like.

Education roundtable |"Risk education for kids and teenagers: what, why and how?"

Panellists:
Helene Joffe, University College London
Julie Girling, Member of the European Parliament
Frederic Bouder, University of Stavanger
Ulrike Schmuelling, Linde Plc

In October 2018 a one-week workshop was held at the Lorentz Centre, Leiden University that gathered over 30 decision makers, practitioners, as well as experienced and young researchers. The theme of the workshop was "Risk Science and Decision Science for children and teenagers: Helping Tomorrow's Citizens Making Decisions About Risk". Its aim was to develop the first step towards a clear scientific consensus and action plan to further risk education for both kids and teenagers in the Netherlands and elsewhere. The most important scientific question motivating the approach was how to translate emerging risk science into a curriculum that fulfils the needs of future citizens to improve decision-making and to strengthen their position as self-confident and responsible people in the face of uncertainty and risk. A tangible outcome of the meeting was to plant the seeds of a new epistemic community around the concept of risk education. This roundtable will engage a dialogue with the risk science community in the Benelux area. Among the crucial questions that will be discussed: Why do we need risk education in the first place? What have we learnt from recent experiments and how can we design future programmes in the curriculum and beyond? What actors in society should be involved and what could be their role? "

Polina Ermolaeva & Irina Kuznetsova | "Climate change in present-day Russia through the reflections of laypeople and professionals"

Post-Soviet Russia faces the unavoidable challenge of adapting to a climate change impacts. The country's warming is twice as fast as the average for the rest of the world, increasing the risk of floods and wildfires across the country. The paper provides Russian-specific insights of lay Russians and the professional community on climate change beliefs, risk perceptions regarding potential climate change impacts, and attitudes towards climate change adaptation and mitigation measures. Based on a representative survey of citizens, semi-structured interviews with professionals and desk research of secondary sources, the study portrays the high awareness of climate change issues among both the general public and professionals. Unlike the majority of laypeople, some professionals express scepticism towards climate change, which they rationalize as normal climate fluctuation processes over time and disbelief in data on GCC. The research reveals the discrepancy between a high level of public environmental concern and limited attention from the government and policy-makers, who remain focused on the resource-driven economy. Therefore, a stasis exists whereby there is a will for environmental change amongst the general population but there is little prospect of it happening given the current political position of the country. The key tools of climate change adaptation and mitigation for Russia should be the genuine engagement of local communities in environmental and urban policy decision making and increasing the significance of climate change agenda in a political agenda.

Colin Glesner | "Safe and/or Secure? - Dealing with uncertainties in high-risk industries"

Our societies are facing an increasing number of crises. These may be rooted in non-intentional or intentional and malevolent acts or a mix of both. In order to prevent and mitigate the threats confronting them, high-risk industries, including defense industries, chemical facilities, energy corporations or nuclear power plants, among others, have developed over time measures to enhance first and foremost their safety, and subsequently, their security. In consequence, safety and security policies have been developed separately and in non-mutually informed ways. Yet, both safety and security have an impact on employees' daily work and the discrepancies between their aims and practices may increase high-risk industries' vulnerability. To face these tensions, employees of such organizations, already working in uncertain environments, have to balance and articulate contradictory measures and handle the resulting uncertainties.

The paper reports from an ongoing project that aims to analyze the constant tradeoffs that employees of a nuclear research center in Belgium (SCK•CEN) make between safety and security measures and cultures. More precisely, it examines how employees deals with the various types of uncertainties arising from safety-security discrepancies in their daily practices. In order to do so, the project mobilizes a qualitative methodological approach based on interviews, focus groups with employees and an ethnographic study undertaken in a nuclear research center.

Maarten de Haan | "The impact of task-shifting on the regulation of medical professions in the Netherlands"

Throughout history, the access to (and the performance of) medical professions has been closely regulated in order to assure quality of care and to protect the public. However, in order to guarantee accessible, affordable and safe care, in the wake of workforce shortages and aging populations; policymakers have seen the need to shift work and/or responsibilities from one professional group to another. This is often referred to as: 'task shifting'.

Since 2009, task shifting has become a policy priority in the Netherlands. The Dutch Ministry of Health (MoH) has eliminated legal barriers limiting task-shifting and provided several professional groups (e.g. Nurse Practitioners, Physician Assistants, Clinical Technologists) with an Expanded Scope of Practice (ESP). Several other professional groups are expected to receive an ESP in the near future (e.g. Dental Hygienists, Bachelor Medical Assistants).

This paper explores how, and to what extent, the policy of task-shifting has impacted the regulation of medical professions in the Netherlands. Qualitative document analysis is used to describe the regime regulating medical professions and its changes of time, and qualitative data (interviews, focusgroups, observations) are used to verify these results. A case is made that task-shifting has led to a paradox in which more liberalisation is combined within an overall conservative regime. This has led to concerns about the long-term durability of the Dutch system regulating medical professions.

Ferdiana Hoti et. al | "Identifying new categories of uncertainties in decision-making during emergency situations"

The aim of this research is to draw together the theory and practice in identification of categories of uncertainties in decision-making during emergency. In theoretical typologies, uncertainty is categorized mainly as: aleatory (ontic/ stochastic) uncertainties which are unpredictable, random or stochastic in nature and cannot be reduced; epistemic uncertainties which are caused due to lack of knowledge and/or information and can be reduced with new research; and uncertainties due to ambiguities which do not have a clear meaning (Walker, Harremoes et al. 2003, Walker, Kwakkel et al. 2010, Fox and Ulkumen 2011, Kunz, Grêt-Regamey et al. 2011, Knoblauch, Stauffacher et al. 2018). However, practice reveals uncertainties that cannot be placed in none of these above-mentioned categories. For instance, judgmental uncertainties (e.g. setting of parameter values in codes), computational uncertainties (i.e. inaccurate calculations), modelling errors (i.e. however good the model is, it will not fit the real world perfectly), partially formed value judgements; and social and ethical uncertainties (i.e. how expert recommendations are formulated and implemented in society, and what their ethical implications are) (French, Haywood, Oughton, Smith, & Turcanu, 2017). Hence, this research bridges the gap between theoretical typology and practice.

In order to identify new categories of uncertainties, two methods are applied: Systematic literature review in order to identify theoretical typology and a non-participatory observation of emergency exercises in order to identify uncertainties in practice.

Our sample (n= 224) of the relevant literature is drawn based on a systematic search in two search engines: Web of Science and Scopus.

Non-participatory observation of emergency exercises was used for identifying different aspects of uncertainty impact on different actors involved in emergency management, by first observing and then discussing the notes taken. This observation has been done in 6 countries, 11 national and 1 international exercise, in 29 observation points under the H2020 CONFIDENCE project.

Preliminary results show that there is some inconsistency between theoretical categorization and practical existing types of uncertainties. For instance, there are uncertainties related to communication, social, political, ethical, psychological, emotional, security, and decision-making aspects that need to be further explored and clearly categorized. Properly categorizing uncertainties would open the path to the efforts of finding communication strategies and improve decision-making under uncertainty. By doing so, this research contributes to the overall goal of establishing the knowledge content pillars for risk analysis as a science in itself.

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Nicole Huijts et. al | "Emotional responses to an equal versus unequal distribution of risks and annoyances of an ultra-deep geothermal project."

Geothermal energy projects, like many other energy projects, have an unequal distribution of negative outcomes (i.e. risks and annoyances) over citizens. Such inequality of negative outcomes has been associated with negative emotions. The question is whether a more equal and thus presumably more fairly perceived distribution of negative outcomes would simply reduce negative emotions and increase positive emotions. Perhaps people also perceive a more equal distribution to have a larger total amount of negative outcomes, as many more people will be affected, which in turn could affect emotions in an opposite direction. The question further arises whether people's emotional responses to an equal versus unequal distribution are different depending on whether the project is situated in one's own town, or in another town. We studied this with a psychological experiment.
Participants to the study were asked to imagine that an ultra-deep geothermal project with seven drilling locations was under consideration by a town council. Depending on the experimental condition, the respondents learned that (1) the project would take place in their own or in another municipality, and (2) that the drilling locations and thus the negative outcomes were either concentrated in one part of the town (unequal condition), or evenly spread out over the town (equal condition). The respondents were then asked to rate the fairness of the project, the negative outcomes for all citizens combined, the anger-, fear-, and joy-related emotions they felt in response to the project and the sympathy they felt for those that were suffering the downsides.

The findings showed that (1) as expected the equal distribution was perceived to be fairer than the unequal distribution, which in turn was related to weaker anger, fear, and sympathy and to stronger joy; (2) the equal distribution was also perceived to have a somewhat higher total negative outcomes (a marginally significant effect), which in turn was related to somewhat stronger anger, fear, and sympathy and weaker joy; (3) the total effect of the (un)equal distribution on anger, fear and joy was, however, insignificant and very small, because a strong unexplained direct effect of distribution on these emotions remained, largely canceling out the effect via perceived fairness. The total effect of (un)equal distribution on sympathy with those have the negative outcomes was negative because these emotions were only determined by perceived fairness: people found the equal distribution more fair than the unequal distribution, and therefore had less sympathy for those suffering the negative outcomes in the equal than

in the unequal condition. Finally, the findings show that people reported more fear and anger in response to perceived total risk due to an equal distribution when the project was in another town than when in one's own town. Otherwise, there was no significant difference between responses to the distribution of outcomes and perceived fairness and total negative outcomes in the own versus the other town conditions in the study.

Overall, a more equal distribution is thus perceived as more fair, and reduces sympathy with those negatively affected, but does not lead to an increase in positive emotions and a decrease in negative emotions about the project itself. The reasons for the latter finding need to be further studied.

Nicole M.A. Huijts et. al | "Users' perceptions and responses to cyber-physical attacks on IoT devices in the home environment: A naturalistic field experiment."

With Internet of Things (IoT) becoming increasingly prevalent in people's homes, new threats to residents' privacy and security are emerging. One such new threat is the cyber-physical attack. These are different from either traditional physical attacks (e.g. burglary) or cyber-attacks (e.g. malware or email phishing), and constitute a class of cyber-attacks that can directly and adversely impact people's physical environment. In a 2.5 month field-experiment, we studied people's perceptions of such cyber-physical risks, and investigated their responses to irregularities that we introduced in the behaviour of IoT devices; irregularities that may point to the IoT system having been compromised.

For this purpose, we introduced in the homes of ten Dutch and eight UK households various IoT devices, including a smart speaker, a smart lamp, a security camera, various sensors (e.g. arrival sensor), and smart weighing scales. The study consisted of three phases. In the first phase (lasting two to four weeks) participants were instructed to explore the functionality of the provided IoT devices. During this phase, we observed how people experienced, and started to integrate the devices in their daily lives. In the second phase of the study, we introduced various irregularities in the behaviour of the IoT devices which may signal a cyber-physical hack, without participants being informed of this a priori. This phase lasted about four weeks. Over time, these irregularities increased in severity. For the smart light, for example, the irregularities ranged from changing its state (i.e. turning on when initially off), to short periods of flashing in a Morse code like manner. For the security camera, the irregularities ranged from changing the state of the camera's privacy shutter (i.e. open or closing the shutter) to opening and closing the shutter in a Morse code like manner. In this phase, we were interested in whether or not these irregularities were detected, how they were perceived (e.g. what kind of causal attributions participants made regarding these irregularities), and how it affected participants emotionally. At the start of the third phase of the study, lasting another two weeks, the purpose of the research was revealed to the participants. We informed participants about our tampering with the behaviour of the devices, but did not yet provide details on the exact irregularities that were introduced. For this phase, participants were asked to report any behaviour in the devices which they believed were introduced by the research team. Our purpose was to investigate whether people, who know they are being "hacked" would be able to correctly identify the resulting irregularities in the devices' behaviour and based on what indications.

Throughout the duration of the study, data was collected using both qualitative and quantitative methods. The qualitative methods consisted of an online diary to be kept by the participants, short online surveys in which they could report positive and negative experiences as well as identified irregularities in phase 3, and regular face-to-face interviews. These qualitative methods were complemented with longer surveys

to assess more quantitatively people's emotional responses. The qualitative data is analysed using thematic analysis.

Of the 18 households, two dropped out halfway the study for various reasons. At the time of writing the study is in the final week of phase 3. Although the thematic analysis is still in progress, some preliminary findings can already be reported. During the first phase of the study, for example, only some people mentioned hacking as a risk when asked for costs, risks and benefits of the provided IoT devices. During the second phase of the study, when the irregularities were introduced, only some irregularities got noticed by the participants. The more severe the irregularities became, the more often they were noticed. In none of the cases, the respondents actually mentioned hacking as the presumed cause of the event. Instead, people generally attributed the irregularity to (an error in) the devices or the associated applications (perceiving the event as one of these strange and incomprehensible things that the devices do). In addition, they would attribute unexpected system behaviour to their housemate perhaps doing something with a device, or to an automation rule they set themselves. Some participants blamed themselves for not knowing enough about the devices, or simply stated "I don't know" when asked about the presumed cause of the event. Only one or two respondents thought that perhaps the researchers did this to them as part of the study. In phase 3—after revealing that the irregularities were introduced by the research team—more irregularities got noticed and attributed to the work of the researchers. However, also other events were reported that were not caused by the researchers, and for which the respondents were wondering whether the researchers were responsible. One preliminary conclusion is that current IoT devices have inherent limitations or design flaws that effectively accustom users to 'odd' or 'inexplicable' behaviour. An accustomisation that, in turn, prevents people to adequately identify changes in the behaviour of devices that may result from a cyber-physical attack.

These results illustrate that, at least at the moment, one cannot rely much on a typical IoT user in detecting cyber-physical attacks. Our study highlights the importance of creating awareness of cyber-physical risks as well as of technological solutions such as automated intrusion detection systems that are sensitive to a household's cyber risk. With IoT becoming increasingly popular in the home environment, a better understanding of how people perceive and respond to the associated cyber-physical risks is crucial for developing effective countermeasures. Although preliminary, the present study highlights the importance of conducting such studies in the naturalistic context of people's own homes. In the proposed presentation, we will report in more detail the findings of this field experiment, discuss the challenges and limitations of experimenting in people's homes, and discuss the implications of the results for policy makers
and product developers.

Anne Junod & Jeffrey Jacquet | "Shale, Coal, Winners, and Losers: Lessons for Risk Governance in Multi-Energy Industry Communities.

A growing literature examines the impacts of unconventional oil and gas development (UOGD) in energy host communities, yet limited scholarship addresses related impacts in communities where no current UOGD occurs but where future development is possible. As the footprint of UOGD expands across existing and new energy plays worldwide, communities with varied energy development legacies face the prospect of future UOGD, presenting unique implications and impacts distinct from those of single-industry energy communities. In this study, we conduct 54 interviews in five Ohio communities – three with coal development legacies and two without – in and near the Utica Shale region of the United States to examine how residents perceive and interpret impacts and risks of regional energy development, as

well as how they view the prospect of future UOGD should technologies and market conditions change and development come to their communities. Findings suggest UOGD impacts, risks, and related perceptions to be amplified and/or attenuated by coal mining legacies, population densities, geographic and political economy diversities, and existing industry mixes and dependencies. We present these findings with a comparative discussion of risk governance implications in the EU and other regions which have hosted legacy or ongoing coal mining activity and face the prospect of UOGD in the future.

Theo Kerckhoffs | "National risk assessments: Taking global norms and rules into account"

Many governments produce a national risk assessment (NRA) on a periodical basis. Traditionally, these initiatives look at how internal and external threats might affect their national security and how likely it is that these events will occur. Threats such as flooding, terrorism and even war with a neighbouring country might be touched upon within a NRA. These events are then translated into their effects on, for instance, national sovereignty, the amount of citizens' lives lost or damages to the national economy.

Sometimes, however, events occur which may have a substantial impact on the global community as a whole. These events or developments might include genocide, pressure on conflict resolution systems or even on free trade. International norms, laws or treaties with importance for a much larger group of states are infringed or set aside. Or even entire institutions on which they might heavily rely. Take the case of genocide for instance: there are effects that go beyond the deaths occurring in the country where the event takes place or its immediate neighbours. The same might apply to an ever escalating trade war. In the midst of retaliation measures by the parties directly involved, the entire system of global free trade might be forced to change or even to stop existing entirely. Effects of many of these threats are currently not included in NRA methodologies, simply because their effects cannot be captured by traditional impact categories such as (national) ecology or economy.

In 2018, the Dutch National Network of Safety and Security Analysts (ANV), responsible for producing the Dutch NRA, has developed an impact category that makes it possible to include these effects as well. It includes aspects such as infringement of state sovereignty, violation of human rights, and disruption of institutionalised, multilateral collaboration. This addition to the Dutch NRA methodology allows us to acquire a more comprehensive understanding of the consequences of many contemporary global challenges such as clashing views on world order and increasing protectionism. The impact category will be applied to several existing and new scenario's in a revised edition of the Dutch NRA (expected early 2019).

Nicolas Mayer & Jocelyn Aubert | "A Risk Management Framework for Security and Integrity of Networks and Services"

It is clearly acknowledged that, in sectors like telecommunications subject to so numerous threats, to consider an infrastructure as fully secure, although desirable, is not achievable. The current European regulation on public communications networks is aware of this assumption and requires today that Telecommunications Service Providers (TSPs) take appropriate technical and organizational measures to manage the risks posed to security of networks and services. In this context, risk management has become

both a key aspect for dealing with security and a main trust vector particularly included in regulations. Our paper lies in this context and is about the establishment of a national security risk management framework to comply with national and European regulations for TSPs. This framework is composed of two parts: a security risk management tool to be used by the TSPs and an analysis tool to be used by the regulatory authority to gather and assess the risk management reports from the TSPs. The latter is specifically used to benchmark the security level of TSPs and the security of the sector as a whole. This paper reports on the design of this framework and the challenges emerging after an entire regulation cycle.

Ahmed Mustafa et. al | "Simulating spatiotemporal urban expansion and densification"

Urban sprawl is increasingly acknowledged as a significant environmental, economic, and social challenge in both the USA and Europe. Accordingly, policies have been developed to curb this phenomenon and foster a more efficient use of the land. Such policies are typically based on a combination of spatial planning with fiscal and economic measures, promoting infill development and land recycling. Infill development is expected to reduce the consumption of land and thereby lower the pressure on green and agricultural areas. This paper presents a model to simulate spatiotemporal urban expansion and densification based on a combination of a non-ordered multinomial logistic regression (MLR) and cellular automata (CA). The probability for built-up development is assessed based on (i) a set of built-up development causative factors and (ii) the land-use of neighboring cells. The model considers four built-up classes: non built-up, low-density, medium-density and high-density built-up. Unlike the most commonly used built-up/urban models which simulate built-up expansion, our approach considers expansion and the potential for densification within already built-up areas when their present density allows it. The model is built, calibrated, and validated for the Walloon region (Belgium) using cadastral data. Three 100×100m raster-based built-up maps for 1990, 2000, and 2010 are developed to define one calibration interval (1990-2000) and one validation interval (2000-2010). The causative factors are calibrated using MLR whereas the CA neighboring effects are calibrated based on a multi-objective genetic algorithm. The calibrated model is applied to simulate the built-up pattern in 2010. The simulated map in 2010 is used to evaluate the model's performance against the actual 2010 map by means of fuzzy set theory and Kappa index. According to the findings, land-use policy, slope, and distance to local roads are the most important determinants of the expansion process. The densification process is mainly driven by zoning, slope, distance to different roads and richness index. The results also show that the densification generally occurs in dense neighbors whereas lower densities neighbors retain their densities over time.

Hichem Omrani & Benoit Parmentier | "Dynamic assessment of population exposure risk to air pollution using mobile phone data"

Context and topic: The effect of air pollution on the environment and human health has attracted increasing attentions from researchers, policymakers and citizens. To reduce health related risk, it is crucial to estimate variations in air pollution exposure with low uncertainty in time and space.

Traditionally, air pollution levels have been monitored using ground stations at fixed locations that are managed by environmental or governmental authorities. However, these networks of stations are often sparsely densely distributed over large areas leading to inaccurate measurements and high spatial uncertainty. Another critical issue is that most of existing exposure assessments regard population as static, without considering the temporal movement of population in space. This leads to a temporal uncertainty in air pollution exposure because this static assumption does not account for increase or decreases in pollution exposure arising from population mobility (e.g., daily commute to working place). Therefore, any decision-making based on the static population may become unrealistic.

Tracking people's movement by using mobile-phone data provides a more precise way to estimate the levels of exposure to pollution. In this study, two scenarios of exposures are compared, the first one, referred to as "dynamic" air pollution exposure is weighted by population activity counts extracted using mobile data records. The second scenario referred to as "static" air pollution exposure considers air pollution exposure weighted by population at residence (in which the population was stationary over time) using a Census-spatial population data.

Data and method: To do so, we used a case study from Orlando Metropolitan County in Florida State U.S.A. with its 1267 zones. The mobile phone data (also called by Call data records-CDR) comes from the University of Florida and AirSage Company in USA. This dataset contains 30 days of individual movement between zones, hour by hour. Then, the population count, at residence, comes from the United State Census Bureau (open data). Last, the hourly air pollution (PM2.5) concentration values comes from monitoring stations of the United States Environmental Protection Agency (EPA). To match air pollution with individual movement across space (i.e., zone) and over time (i.e., hour), we apply spatial kriging (interpolation technique).

Expected results: Results reveal large differences in exposure between the two approaches and suggest that the dynamic approach can improve substantially the quantification of risk to air pollution exposure by taking into account the spatial and temporal variations. Reducing uncertainty in air pollution exposure is a first step in reducing health risk and providing decision making tools, data and model for policymakers.

Future work: The different kind of datasets are always available in open-data, except for mobile phone data, which makes our research, to some extent, reproducible to other cities across the world. Future studies should expand on the framework by exploring other pollutants (e.g., NO2, O3, and PM10), study areas, interpolation methods/algorithms and more explore new data source like the newly sentinel 5P to study exposure to air-pollution at a global scale (e.g., country or continental scales).

Michiel Van Oudheusden & Ahmed Nagy | "Reasoning with the 'insider threat' in critical industries through gamified learning"

The insider threat constitutes a particular type of threat to critical industries (e.g., nuclear and chemical facilities) as it emanates from real and potential malicious acts (e.g., theft) perpetrated by employees within their own organizations. While insider threat awareness levels have grown in recent years, threat management strategies remain to be better understood. What, for instance, counts as "insider threat" for critical industries, and why? How is it identified and mitigated? Can it be managed away or will such

attempts needlessly augment mistrust, risk, and uncertainty? This paper seeks to engage with these questions through presentation of fieldwork observations from a two-year EU research project on insider threats in the European chemical industry. It does not provide a comprehensive account of all potential threats and mitigation strategies, but focuses on how the "insider threat" is presented and understood by middle and executive managers, in view of the specific mechanisms in place (e.g., physical barriers, risk indicators, reporting systems) and the assumptions that motivate the implementation of such mechanisms (e.g., "we cannot have enough security"). It finds considerable ambiguity within and across organizations in how these mechanisms are deployed and motivations are articulated, as well low tolerance of this ambiguity among research participants. Drawing together social learning theory and gamification approaches, the paper suggests that such ambiguities may be tapped into as resources to improve risk mitigation and stimulate organizational renewal through gamified learning. While the benefits of this approach should not be overstated, it can help critical industries and their employees to engage with security related risks in an inquisitive, realistic and cohesive way; thereby contributing to better "reasoning with threats" in the face of uncertainty.

Arnald Puy et. al | "Uncertainty and global sensitivity analysis of the projection of continental and global irrigated areas to 2050"

Projecting the extension of irrigation is a major concern for scholars and policy- makers due to the relevance of irrigated agriculture for future food security and envi- ronmental sustainability. Current projections to 2050 range between 240-450 Million hectares (Mha). A key question with implications for the robustness of our policies on future food and environmental security is: does this relatively small range of possible extensions reflect our high predictive capacity of irrigated areas, or just a neglect of its uncertainties?

In this communication we will argue that the correct answer is the second. By means of a systematic uncertainty and sensitivity analysis, we found that the uncer- tainty in the extension of irrigation spans up to one order of magnitude at the conti- nental level. At the global level, a right tail in the probability distribution of the model output sets the range of possible extensions between 300-1240 Mha (P2.5,P97.5). Most of the uncertainty is driven by the second and higher-order interaction of population-related parameters (i.e. population growth rate, the pace of population dynamics) and the different options existing for the calculation of the growth rate between pop- ulation and irrigated areas (i.e. type of regression, use of robust/non-robust methods, selection of the data set).

These results have the following implications, to be discussed in the conference: 1) the uncertainty in the projection of irrigated areas is at present irreducible, 2) this uncertainty should be embraced by models so they can continue informing policies and decision-makers without hiding their limitations or potential risks, and 3) relevant agents and institutions should acknowledge the fact that an extreme pressure on land and water resources by irrigated agriculture in 2050 is a perfectly plausible scenario.

Michael Joseph Rafferty | "Problematising 'risk' in gentrification and urban land commodification."

What are the risks in processes of gentrification, who takes them and who bears them? 'Risk' is inherent in the commodification of urban land in capitalist economies, whether seen from the perspective of property developers, communities 'at risk' of displacement, or by urban planners and other political actors. However, its reflection in the gentrification literature comes mainly from scholars using neoclassical urban theory and demand-side analysis to explain gentrification; e.g. Skaburskis (2010) acknowledges the 'risk' gentrifiers take in moving to lower-class neighbourhoods, and relates this to Beck's Risk Society. On the other hand, scholars e.g. Krijnen (2018) are more recently using Neil Smith's 'rent-gap' theory to explain the aggressive behaviour of developers and others engage in to create a rent-gap for speculative investment, without explicit reference to the strategic/economic/social risk involved in these actions. Additionally, financial geographers such as Manuel Aalbers consider the macroeconomic risks of increasing mortgage debt and rising rents ensuing from processes of gentrification and privatisation of social housing. These divergent approaches to gentrification and urban land commodification therefore imply different definitions, values and concepts of risks, risk-takers and risk-bearers. This paper will explore academic approaches to gentrification and urban land commodification to identify how risk analysis can play a role in synthesising hitherto competing analytical and conceptual paradigms. Drawing on both quantitative and qualitative empirical studies using 'rent gap' analysis in cities, this paper will also seek to identify opportunities for risk analysis to be operationalised in the context of urban land commodification. This approach will assess the value of risk analysis in surmounting a long-running problem in urban political economy – seeing cities as centres of both production *and* consumption.

Cesare Riillo | "The impact of standards and regulation on innovation in uncertain markets"

This study analyses the impact of formal standards and regulation on firms' innovation efficiency, considering different levels of market uncertainty. We argue that formal standards and regulation have different effects, depending on the extent of market uncertainty derived from theoretical considerations about information asymmetry and regulatory capture. Our empirical analysis is based on the German Community Innovation Survey (CIS). The results show that formal standards lead to lower innovation efficiency in markets with low uncertainty, while regulations have the opposite effect. In cases of high market uncertainty, we observe that regulation leads to lower innovation efficiency, while formal standards have the reverse effect. Our results have important implications for the future application of both instruments, showing that their benefits heavily depend on the market environment.

Erwin Sotiri | "Cryptocurrencies: Securing Trustless Transactions"

To the opposite of fiat money, Bitcoin and other cryptocurrencies ignore the traditional financial systems based on trust and rely solely on networks and cryptography to secure transactions. Over the course of 10 years of its existence there have been a few spectacular failures: MTGox in 2014, Bitfinex in 2015, QuadrigaCX in 2018, etc. These failures however, have not compromised the security of blockchain or its cryptographic functions but are rather consequences of attempts to re-introduce trust in a system that is designed to operate without it. The element of trust has not disappeared entirely, but persists elsewhere

in the transaction chain, that still requires human intervention: Software developing and maintenance, smart contracts etc. Trust appears then as the weak link or the risk component in cryptocurrency transactions. After all, human error is the most common source of error and safety is always built upon those errors. Cryptocurrencies were built to safeguard financial transaction from human trust abuse by other humans, but they are not exempt from human greed and excesses. This book presents the operational methods, the regulatory and legal provisions that have being laid down during the past decade, to secure a future of the Internet of money.

Shisti Singh | "Assessing the Generation, Collection and Recycling Practices of Electronic-Waste(E-Waste) From Patna, India (Dirtiest State Capital in the country)"

Patna, the capital city of Bihar, though boasts of rich cultural heritage, is unfortunately also known as the garbage city of the country.In this study, I have focused on E-Waste which is commercial as well as residential and is generated in all over the city. Patna, is the largest consumers of electronic goods in the state as large corporate, business houses, IT companies and Malls are situated in the city.Rapid Industrial and economic growth in the city has triggered greater consumption and waste generation of Electronic Equipment,Emerging issue of E-waste in Patna demands its effective management strategy for the City. However, it cannot be achieved until assessment of e-waste quantification and disposal is carried out.The main objective of this study was to quantify the E-waste inventory and it's processing from Patna to evaluate its generation and recycling practices.E-Waste has been classified as Information technology & Telecommunication equipment category.The study reveals that Municipal Corporation has no record regarding how much E-waste the city generates. Datas states that Bihar Government has specified 57 E-Waste collection points and 2 Warehouses in the city however no recycling centre is there.Patna sill doesn't have any mechanism to dispose electronic waste.During city visits, it has been observed the streets of city are strewn with garbage including E- waste which have several environmental concerns.Findings of my study strongly recommend dire need for urgent and effective monitoring as well as control of e-waste management in Patna.

Barbara Oliwia Szewców | "Participatory road safety education and children's independence, sense of meaningful citizenship and safety."

Multiple warnings about traffic risks and children bearing a disproportionate share of negative consequences, resulting from rapid urbanisation and excessive use of motor vehicles, call for greater attention to road safety management. The general observable patterns indicate that most European cities are not child-friendly, and are tailored to the needs of the working, active adult population. Various approaches have been proposed to solve the issue yet most of them suggests applying adult-led solutions based on dos and don'ts, creation of isolated safety areas, and the projects which teach children what the road dangers are and how to avoid them. Children are rarely involved in a community decision-making, even if it affects them directly, (Household, 2018) . Additionally, the study of the risk perception literature demonstrated one of the major drawbacks to adopting a holistic view on road safety which is insufficient attention given to children's ideas of risk (Lam, 2005) .

The paper reviews risk perception literature; analyses two road safety education programmes from Birmingham and Oslo; and evaluates inputs from expert advisory group with representatives from policy and academia.

The investigation helped to develop a framework which views children as active users of public space. Because of city design and lifestyle choices, road risk exposure is real, yet, it is not independent of awareness. Accordingly, the outline puts child's perception at the forefront. The mixture of youth's discovery and uncertainty leads to the creation of expertise on adolescent's subjective experience of risk. Consequently, already existing risk knowledge gets equipped with a new dimension which allows adults to view risk through a child's lens, and apply corrective measures. The framework assumes that if the youth takes part in shaping social dynamics and co-creates risk knowledge, then risk awareness and safety programmes will allow for re-organisation of city space so that it is available to all members of the society.

Katerina Triantos | "Enabling Responsible Citizenship: Risk and Decision-Making Education."

The transition between childhood and adulthood is challenging; this is the period where individuals are expected to begin taking responsibility for their actions, participate in communities and governments as active citizens, and gain global awareness and understand their impact. Risk and decision-making education has the opportunity to help children in this development. However, three points must be deliberated on to create a holistic approach:

Inclusivity. If we seek to empower children to become responsible, involved, and conscientious adults, we cannot exclude any group of children on the grounds of the socio-economic status they were born into. Often times, pilot initiatives are implemented in schools within higher socio-economic communities, simply because of the school's exposure and/or the perception that the initiative will be received successfully within these schools. However, by implementing initiatives within these communities and not others, disempowerment and lack of participation is perpetuated onto the next generation. Children who are born into lower socio-economic households experience more decision variation throughout their lifetime in comparison to their higher socio-economic counterparts. This is because children within higher socio-economic households are informed of, expected to, and supported in following life-paths which lead to less risky and/or higher reward outcomes. Their lower socio-economic counterparts are burdened with making more independent decisions, from a wider variety of options which are generally less favorable as the option presented to children from more favored strata, causing these children to live through the same disenfranchisement being perpetuated that their parents faced. Within a democratic and merit-based system, everyone should feel their opinion is heard, they can make sound decisions, and have the opportunity to excel. If these children become adults who feel they are second-rate citizens, they develop a distrust toward their leaders and a sense that the society, in which they are meant to be a part of, does not have their best interest at heart. This distrust makes it difficult to communicate risks throughout society effectively. Furthermore, without hope in the merit-system, it becomes difficult to motivate members of society to feel like they are able to surpass prior limitations through decisions. Baring this in mind, when considering how we empower the next generation decision-makers, we must be mindful of implementing initiatives through more inclusive frameworks.

Stakeholder commitment and alignment. There are multiple stakeholders which must be considered within child education. The perspectives, roles and power of stakeholders such as school leaders, administrators, educators, educational governing bodies, parents, and the children themselves must be accessed and relationships must be built to gain a level of commitment across all parties involved in the program. For higher success rate potential, it is important to ensure stakeholders are aligned and believe in the initiative's implementation and goals.

Child development. Insights from developmental psychologists and educators are also required in assessing what different age groups can be expected to understand and be taught. Otherwise, students may become disengaged if they find the material too challenging, but also if the material isn't able to interest them on a personal or intellectual level.

Upon approval and before the 4 th SRA-E Benelux conference in March, I will (i) collaborate with academics and educators in incorporating literature and experience and (ii) build on relationships with the target schools. This would enable me to pilot an afterschool program within two public schools in the Washington, D.C. area in 2019. This schools are selected due to their location in differing socio-economic communities. During the conference, I would like to present this project and facilitate a discussion around how to evaluate the subsequent program and further open the discussion to participants' suggestions and insights.

Catrinel Turcanu et. al | "Societal uncertainties in a technology uncertain innovation project: the case of fusion energy."

Development of innovative technologies brings about inherent uncertainties about the success of innovation, as well as issues of morality, ethics and social concerns. Public participation is therefore recognized as essential for opening up the debate on technological developments and related uncertainties. At the European level, policy discourses on "Science with and for society" and "responsible research and innovation" specifically call for "societal actors (researchers, citizens, policy makers, business, third sector organisations, etc.)" to work together during the whole research and innovation process in order to better align both the process and its outcomes with the values, needs and expectations of society" (https://ec.europa.eu/programmes/horizon2020/en/h2020-section/responsible-research-innovation). This is of particular relevance for the development of fusion energy, which is recognised as a large and long- term undertaking. The related experiments are complex and expensive, requiring international collaboration of several laboratories. Consequently, the development of fusion energy provides an opportunity to investigate socio- economic uncertainties in research, development and innovation.

A combined qualitative-quantitative analysis has been carried out in order to provide a deeper insight into the public understanding and reasoning about fusion technology and its application for electricity production. The quantitative part investigated awareness and familiarity with fusion technology, as well as the influence of a number of factors (attitude towards science and technology, attitude towards nuclear energy, familiarity, salience with the issue of fusion energy) on the attitude towards fusion energy. Data originated from a large- scale opinion survey in with a representative sample of the Belgian adult population. The qualitative research part identified pre-existing images and mental associations with fusion energy on the basis of answers given to an open question in the survey.

The results from this study contribute to developing a better understanding of the socio-economic issues connected to the development of fusion energy. They show for instance that the general public has little knowledge about the topic of fusion energy, which remains difficult to grasp, and frequently confused with nuclear (fission) energy. The dominant frame in the Belgian media in the 15 years previous to the survey focused on fusion as a "social or political game". However, the strongest associations or evocations encountered among the respondents who could recall some information about fusion energy (N=178 out of 1028) were descriptions of the process in which fusion energy is produced (25%), and references to fusion as the opposite of nuclear fission (15%). Attitude towards nuclear energy came out as the most influential predictor for attitudes towards fusion energy. Finally, respondents who ranked the long time frames needed by fusion as the most important disadvantage, tended to be somewhat more positive about fusion energy that respondents who ranked other disadvantages (e.g. that it involves the use of radioactive materials) as the most important. Acknowledgments: This study has been carried out in the framework of the Socio-Economic Studies Project implemented under the EUROFusion Consortium and has received funding from the Euratom research and training programme 2014-2018 under grant agreement No 633053. The views and opinions expressed herein do not necessarily reflect those of the European Commission.

Liam Wells | "Risk, cultural cognition, and the regulation of pharmaceuticals"

Public interest and behavioural analyses cannot explain the approach of the US Food and Drug Administration to the licensing of new drugs for market access over the past century. Neither can they explain the divergence in approaches taken in the US and in the EU respectively. Combining institutional and private interest insights may provide a model which aptly accounts for both the approach of the FDA and the transatlantic divergence in the case of licensing. However, this explanatory model yields predictions, in the case of the regulation of direct to consumer advertising of prescription drugs, which are radically different from the reality in the US and the EU. This is a puzzle which is not yet solved.

Much has been written separately on the subjects of pharmaceutical licensing, advertising and regulatory divergence. No literature has brought together institutional analysis and the reputation theory of agency behaviour in seeking to explain divergence in approaches to pharmaceuticals licensing. No paper has focused specifically upon this disjuncture between licensing and advertising

By narrowing the focus, the author seeks to shed new light on the problem of transatlantic regulatory divergence in the pharmaceuticals sector, highlighting the inability of extant theories to provide an explanation which accounts for the problem.

Mandy de Wilde & Gerald Taylor Aiken | "(de)Territorialisations and (de)Politisation: Urban Environmental Policy and the enrollment of subjectivities."

'Governing through community' (Rose 1999) argues that 'community' is utilized within a neoliberal agenda to collect, contain, and discipline citizens. This governmental trend has come to be known as 'de-politicization' (Larner 2005; Larner and Craig 2005, Clarke 2010). While governments hope for spontaneous citizen identification, loyalty, and engagement, communities do not simply exist pre-given. Quite the opposite, as delicate fields of affect-laden relationships, they must be carefully produced:

designed, shaped and made. Yet, there remains something about community collectivity that allows a collective capacity to respond to these forces. Community has a productive power. This paper argues, first, that community has both a de-politicizing and re- politicizing tendencies, albeit in different ways. Crucial to these, we argue is the relationship of the community concerned to territory, specifically territoritialisation. The paper thus second delves into recent geographic literature on the political character of territory. We evidence our argument through two state schemes in the Netherlands and Luxembourg that attempt to put community subjectivities to use in the pursuit of environmental objectives. We find the attempted enrollment of collective subjectivities in projects tend towards both territoritialisation and depoliticisation, and yet there remain points of resistance. We outline what the potentials and strategies for repoliticisation of collective relationship to territory might be.

Catherine Wong & Stewart Lockie | "Policy and industry elite perceptions of risk and uncertainty in climate policy"

Uncertainties associated with the pace, timing and non-linearity of anthropogenic climate change constitute a significant challenge for climate policy and the management of subsequent risks. There has, thus, been a growing focus on uncertainty as a distinct concept in the risk literature. This paper is concerned with how those involved in the design and implementation of climate policy conceptualize uncertainty and risk and the rationales they provide for specific policy preferences and recommendations. Based on interviews with policy-makers and industry elites in Australia, China and the UK, it finds that decision-makers do not consider the distinction between 'risk' and 'uncertainty' to be significant. They are also far more concerned over the management of political risk than with scientific uncertainties. For the majority of participants, the solution to political risk was seen in the extension of market-based policy options; that is, in the de-politicization of climate policy. For a small number, however, the solution was seen in more deliberative and participatory approaches to policy-making that potentially reduce conflict and promote multiple networks of accountability for policy implementation.

Yigrem Getachew | "Planning and analysis of Earthquake Disaster Relief Work"

This paper addresses dynamic planning and analysis of earthquake disaster relief work by analysis the disaster throughout the technical and procedural method. And combine this analysis as continues assessment for better input to investigating planning disaster for discontinuous economic growth. This implemented, considering the vulnerability and hazard analysis as a procedural analysis disaster to estimating acceptance risk leveling of effect arising out of disaster occurring, analysis socioeconomic, generating set-ups and procedures. Consensually planning earthquake disaster of relief work through the phases; gathering information, plan development, and investigation, and approve the plan and ongoing applying for organizational and the phases; agent- specifically strategies planning and all- hazard strategies planning for the community to perform the acceptable plan as condense the potential economic loss and giving ordinary relief work. Get considering this, the responsible government sectors collaborating with an analyst's, earthquake engineers and geologist can manage before, during and after the response of earthquake disaster exist to establish continuous conjugated of urban together with rural areas sustainability urbanization.