The politics of uncertainty: practical challenges for transformative action

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Theme Abstracts

Cluster 1
Finance and Banking / Insurance, Disaster Governance and Liability / Experimental, Nodal, Adaptive Governance

Finance and Banking

Finance and banking have become the dominant institutional contexts and provide the dominant techniques for managing future economic uncertainties through the mastery of risk. The result has been a *political* "black boxing" of uncertainty as a critical source for negotiating our futures; and an *epistemological* black boxing of radical uncertainty as a fundamental condition of capitalist change. To be sure, since the global financial crisis of 2007-08, uncertainty has been increasingly referred to in public debate and regulatory discourse. However, we wonder whether the crisis has really challenged, or rather expanded, the projects of risk-mastering that have come to define modern finance.

To address this question, we intend to focus on three (interrelated) dimensions:

1) How are political and epistemological projects of mastering uncertainty linked in finance and banking? In particular, what entanglements between power and knowledge underpin the expectations-based, future-oriented practices of finance (expressed in notions such as Beckert's "politics of expectations")?
2) In what ways have recent changes in regulation and governance overcome, or strengthened, the control projects of financial markets? The continued emphasis on securing the transparency and equilibrium of markets, as evidenced by central banks' new objective of "restoring orderly conditions" suggests otherwise; as do, for instance, novel regulatory initiatives to institute 'macro-prudential regulations" as buffers and props for inherently unstable financial dynamics.
3) Finally, to what extent are economic methodology and expertise really changing to accommodate radical uncertainty? Do shifting notions of rationality from optimization models to agent-based simulations really do justice to logics of action and socially coordinated decision-making that we observe in finance and the economy? Can the

mathematicity of modern economics really accommodate, or does it prevent, a fuller engagement with uncertainty and its epistemological implications?

These themes raise further questions that we intend to engage. First, will the ongoing process of *financialization* continue to expand risk mastery projects into ever more economic and societal spheres? What role do public institutions play in reinforcing or slowing this trend? Is it possible, and if so how, to challenge the 'definitional power' of financial markets over economic futures? What might be sources for alternative imaginaries, business models or modes of governance that do not (constitutively) depend on the mastery of risk and the exclusion of uncertainty?

Insurance, Disaster Governance and Liability

The technologies of the (re)insurance industry have long been central to the development of methods to assess uncertainty, yielding quantifiable – and thus priceable – risk. Amidst the proliferating uncertainties of globalized modernity, climate change, and the growing cost of disasters, the impulse to parameterize uncertainty across more geographic and hazard domains has grown as insurers and multilateral institutions seek to narrow the "global insurance protection gap" – the difference between total economic losses and insured losses.

The last decade has also seen the growing deployment of other insurance-like tools such as catastrophe bonds, their extension to new domains such as pandemics and infrastructure, and the application of insurance principles at new scales such as multi-sovereign pools. These tools are distributed to and through a growing array of institutions such as humanitarian agencies, while the actuarial logic of managing contingent liabilities has begun to penetrate into the decisions of treasuries in the Global South.

This theme aims to bring scholars and practitioners together to probe:

- In what ways do insurance tools generate their own new sets of uncertainties? Does the proliferation of insurance products and projects yield a misleading sense of security?
- How do insurance programs grapple with the uncertainties of operations? How have these compelled programs to adopt/employ a new set of tactics and promises besides 'security' – including risk reduction?
- How can the assumptions, parameters, and uncertainties embedded in complex contract design be made understandable to the various publics whose interests and futures are joined in the risk pool?
- How is insurance being reimagined to address the needs of the most vulnerable, and can these needs remain paramount amidst an arms race to financially engineer risk transfer products?
- In what domains are insurance tools now used to govern decision-making and budgeting for disasters, and what are the potential side effects? Who wins, who loses?
- Do attempts to extend insurance tools into new governance realms allow the avoidance of political debate about responsibility and social priorities, or provide much needed transparency about where responsibility lies?

- What possibilities exist for insurance-like arrangements that are more adaptive, context-dependent, and responsive? Or does such a reorientation undermine the ontological framework of insurance?
- At what scales of risk pooling are such adaptive arrangements feasible? Does insurance's relation to scale and probabilistic calculation constrain its ability to be adaptive/responsive?

Experimental, Nodal, Adaptive Governance

This theme brings together an interdisciplinary group of scholars from Europe and North America to discuss uncertainty in diverse substantive areas and from a variety of analytical perspectives.

Some contributions will look at how different forms of innovation, and financial innovation in particular, represent key regulatory challenges that have to be fully recognized and that might be addressed by engaging with 'flexible regulation'. Other contributions will keep focusing on the experience so far with the regulation of financial markets, but shift the analytical perspective to 'adaptable governance'. Still others will examine how contractual arrangements between collaborative firms are being reshaped through 'experimentalist' practices of constant learning in order to facilitate innovative production goods and methods.

Altogether, thanks to these and other contributions, this theme aims at stimulating discussion on crucial challenges associated with uncertainty and how different governance regimes are dealing with them.

Cluster 2
Technology Policy, Regulation and Precaution / Critical Infrastructures and Reliability / Expanding Cities

Technology Policy, Regulation and Precaution

Technology regulation has long been an area of governance where the intrinsically problematic nature of knowledge has often spilled out, sometimes uncontrollably, into wider public and political settings. In large part this reflects a recurring tendency, on the part of scientific and policy institutions everywhere, to define what is legitimately and self-evidently at issue in this domain, and therefore subject to collective agency, as *only* a relatively narrow range of direct biophysical vulnerabilities from individual technological artifacts and processes, and to treat such vulnerabilities as fully comprehendible, *ex ante*, and manageable - as issues of probabilistic risk, or at least as resolvable technical uncertainty.

For well over half a century, social and natural scientists have challenged this depiction, insisting that a) irresolvable scientific uncertainty is a common regulatory predicament; b) that ignorance is an inherent feature of anticipatory assessment; and c) that the objects of regulatory attention (such as civil nuclear power generation) are far more open ended and indeterminate that is

generally acknowledged, in both their scientific dimensions as well as in terms of meanings and values. Given the latter, there are always critical ambiguities (and so legitimate differences of opinion) about how to define and bound regulatory objects, the potential vulnerabilities they generate, and the ways in which any particular vulnerability can then be legitimately characterized and analyzed. In practice the resolution of such ambiguities is often tacit; a reflection of multiple judgments, assumptions and scientific conventions that are exquisitely sensitive to the political and institutional contexts in which regulation occurs (and sometimes ripe for tactical selection). Knowledge and regulatory politics and policy are, to use the jargon, 'co-produced'.

An important response to these richer understandings of ´uncertainty´ and its political dynamics has been the emergence of precautionary thinking, in the form of a range of novel, but often politically and practically challenging, approaches to knowledge production and decision-making. One element of this is a shift of attention and potential intervention to more 'upstream' aspects of technology/innovation policy, in part a consequence of treating democratically public concerns about the overall human purposes and motivations associated with particular technological trajectories (that were simply denied by traditional policy institutions), but also widespread recognition that sustainability challenges require transformation of entire technological systems, in contexts where preferences about both desired and undesired directions of change, and knowledge of the consequences of those options, are highly contested, uncertain and incomplete.

This session takes stock of some of these developments, and explores some of the challenges involved in experimentation with more open, plural and ambitious forms of knowledge production, decision-making and intervention in this area of policy.

Critical Infrastructures and Reliability

What can we learn from those whose job it is to actively manage uncertainty—indeed, manage many types of uncertainty, in real time and over time?

One such group are the reliability professionals found in control rooms and support units of society's conventional critical infrastructures, including control centers for large-scale water supplies, energy (electricity and natural gas), hazardous fuels, transportation, and emergency services, to name a few. Their mandate is to ensure the continuous and safe provision of a critical service in real time, even during (especially during) uncertain times. In doing so, they must work in teams or groups, networked together.

These networks have four key, inter-related features of interest to the Symposium audience:

(1) **High stakes**: Managing uncertainty is a matter of life and death if critical services fail;

(2) **Real-time uncertainty**: The networks manage in real time—if you can't manage uncertainty now when it matters why would we believe your promises to manage better later on?;

(3) **Uncertainty management**: Network professionals manage urgent uncertainties in ways that do not stand or fall on undertaking formal risk methodologies to do so; and

(4) **Under-recognized expertise**: Last but not least, their professionalism, domains of practice and processes of "infrastructuring" are often under-acknowledged by expert opinion and certification.

Ongoing research finds that the skills and processes of these networked professionals—in recognizing system-wide patterns and practices, in formulating action scenarios based in design but modified in light of local contingencies, and in translating both into reliable service provision at the system level—can also be found in settings considered opposite to "modern" control rooms. Typologies such as that of Andy Stirling give added insights into how infrastructure reliability professionals manage reliably and their implications for real-time rural and urban development activities in the global South.

Urban Uncertainty

The Twenty First Century is the urban century. Cities are heralded as the places that will address climate change, reinvent economic growth, and create new forms of political and social inclusion. At the same time cities are chronically underfunded and over-burdened, home to deeply divided communities and decrepit infrastructure, struggling with chaotic unplanned growth and chronic pollution. These divergent narratives of hope and despair spring from a deep uncertainty surrounding the future of humanity as an urbanised species. What will the megacities of the future look like and how will they cope with unprecedented scale and complexity? What new ways of governing, planning and living cities will emerge to make us happier and healthier? Whose responsibility it is to even address these questions? Never before has the future of cities been so uncertain, and yet so important to our future prospects.

This session asks how uncertainty is driving new approaches to urban challenges. It asks how different kinds of uncertainty are determined and managed in cities, by who, and based on what types of knowledge and techniques of governance. Uncertainties posed by large scale automation of workforces, disease outbreaks and chronic long term health challenges of disease, obesity, pollution and aging present transformative challenges to urban authorities and inhabitants. The session will outline how these forms of uncertainty are stimulating experimental forms of urban development and governance and with what implications. It will interrogate the degree to which such approaches can become business as usual, and develop an understanding of how uncertainty can generate positive transformation.

Cluster 3
Climate change, Models and Response / Disease Outbreaks and Preparedness / Disasters, Humanitarianism and Emergencies

Climate Change, Models and Response

Working with uncertainty: Models, epistemic plurality and the possibilities of co-production?

Uncertainty is a key factor for climate policy at international, national and sub-national levels. It has emerged as a 'monster' or 'super wicked' problem for scientists and policymakers alike and its integration in climate change decision-making is very much disputed and debated. From when the concern over human-induced climate change originated, there has been considerable focus on establishing the rate, magnitude and patterns of change, to guide policy responses. From the outset, the attention to uncertainty has been on how to manage – and particularly reduce – uncertainty, but the emphasis in this debate has somewhat shifted over the last two decades. Some scientists are now beginning to acknowledge uncertainty as something that one needs to 'work with' and 'work around' rather than a monster that needs to be controlled or tamed.

We take this shift as the starting point for our conversation/panel discussion, where the invited speakers will reflect on their practice of working with uncertainty, the unknown unknowns and how these boundaries are negotiated, maintained and represented in models, scenarios and projections, as well as how are they communicated and translated into policy.

We ask:

- How far and when can modellers and scientists take into account major drivers of socio-economic and political change such as land-use patterns, and distributional factors which tend to affect climate-related vulnerabilities?
- Are there ways in which experts can learn from local people's experiences and perceptions of uncertainty and vice versa?
- What are the dilemmas of scientists around capturing uncertainty and how does it shape the science/policy interface?

We are also interested in exploring opportunities, instances and possibilities where scientists have worked with other forms of knowledge systems (citizen science, indigenous knowledge) and explored the possible pathways of knowledge co-production.

Disease Outbreaks and Preparedness

Approaches to pandemic preparedness, even those that aim to be 'proactive', focus on a particular aspect of limited knowledge or incertitude: risk, a situation in which we know what the outcome is, and we know the likelihood of it happening. Preparedness efforts focus on turning uncertainties into risk through surveillance, prediction, early warning, and scenario planning. Disease emergence and outbreaks, however, are part of complex systems defined by non-linear ecological, social and technological dynamics: surprise, limited knowledge and

ambiguity are thus pervasive. Disease threats and outbreaks involve events whose character and occurrence cannot be predicted in advance (Stirling 2010, Leach, Scoones and Stirling 2010, Stirling and Scoones 2009). The experience with avian influenza and other diseases has shown that surveillance and other pre-emptive strategies have failed to predict emergent threats (Scoones 2010).

In this panel we will discuss at least three different levels of uncertainty. Firstly, in the situation where there is a given disease outbreak, there are uncertainties that arise in terms of where the disease will unfold, which populations will be most affected, and what the effects will be. Secondly, considering a particular disease with epidemic potential, there are ongoing uncertainties regarding where the next outbreak will occur and how this might unfold. Thirdly, there is the situation of extreme unknowns: which disease X might emerge in the near future, how might organisms be mutating, and how can preparedness be maximised?

In response to these different layers of uncertainty, global and national preparedness architectures prioritise the intensified collection and use of scientific, public health and epidemiological data, with strategies such as surveillance and modelling of disease occurrence and spread, supported by clinical and laboratory information as well as novel (e.g. digital) means to collect and share it. Alternatively, preparedness and response mechanisms that recognise and live with uncertainty could be useful: flexible institutions, ongoing iterative adaptation and learning and capacities to anticipate would be valuable strategies identified by social science (Roe 2013). Furthermore, forms of technical knowledge and innovation must be contrasted and merged with lay expertise: communities' social knowledge and everyday experiences of responding to unpredictable adversity that may offer new and transformative insights. Is there thus scope for incorporation of different knowledges about disease and its emergence, ascertaining what is known, by whom, and how, and how different states and forms of knowledge might interconnect?

Questions:

- What are the assumptions around risk and uncertainty within initiatives to predict and respond to disease emergence?
- How do different pandemic preparedness and response institutions deal with the different levels of uncertainty? What are the consequences of this?
- What might be alternative responses that recognise uncertainty?
- How might different kinds of evidence and forms of knowledge contribute to preparedness and response efforts?

Disasters, Humanitarianism and Emergencies

Reducing uncertainty is a central tenet of disaster risk management. The starting point for research and policy is to reduce uncertainty in knowledge of hazard processes to enable better event forecasting, and on working to improve the communication and social embeddedness of this information. This approach has delivered considerable gains in regions exposed to weather extremes including coastal lands and rainfall dependent agricultural communities.

What kinds of bias or limits to imagination and action might be imposed by an uncertainty frame are seldom considered.

Has risk management been seduced by gains in hazards assessment and modelling made by an uncertainty frame and overlooked the uncertainties lying behind processes of everyday development that (re)produce uneven experiences of vulnerability/resilience, and shape the ways in which individuals and policy actors navigate the ambiguities of decision-making and social action to reduce risk? Or are these aspects secondary?

What alternatives are there to an uncertainty framing of disaster risk management?

To reflect upon these questions, the session brings together a panel of experts working across the research-policy chain from hazards and vulnerability researchers to research translators and practitioners with global experience detailed insights from working with the urban poor in Nairobi, Kenya and post-earthquake reconstruction in Kathmandu, Nepal. Panellists will be asked to consider:

- What focus of research or action is prioritised by an uncertainty reduction lens? For example, are you drawn to specific actors or objects, or timespans of analysis?
- Is this focus enabling or constraining of efforts to reduce risk root causes for the poorest and most vulnerable?
- How does your field of work cope with multiple uncertainties?
- Even if uncertainty has some value as a frame, is it appropriate or to seek to reduce *all* uncertainty?
- What are the ethical implications for researchers and policy actors that impose or withdraw from an uncertainty lens?

Cluster 4
Migration, Mobilities and Immobilities / Conflict, Terrorism and (In)security / Culture, Religion and Uncertainty

Migration, Mobilities and Immobilities

Policies and interventions surrounding migration have become centred increasingly on management, prevention and crisis control over the past decades. Although labour markets globally thrive on the circulation of workers, the dominant rhetoric intimates an uncontrolled over-supply of labour, often of the wrong type, which in turn nourishes discursive distinctions between wanted and unwanted migrants. This rhetoric developed in the global North but has since mushroomed into regional and local discourses elsewhere, advocated strategically by European states tying border control into development assistance. Today, even policy discourses concerning historical internal and cross-border mobilities are permeated by a globalised language of risky journeys, rent-seeking, exploitation. In this perspective migration bans or repatriation are presented as measures of protection even though they also serve to control mobilities. Intersecting restrictive mobility regimes create new avenues of uncertainty in mobilities built on migration and rule out legal transnational mobilities for a large proportion of

people in the global South. The tightening of borders and boundaries comes at a time when rising inequalities globally and locally have paved the way for new uncertainties, disenchantment with the status quo, and desires for different types of lives. To deal with uncertainty and lack of opportunity commensurate with skills, moral values, quests for change, and personal aspirations, migrants are compelled to make choices and trade-offs regarding their mobilities.

The participants in this theme are invited to explore different dimensions of mobilities and immobilities, not as binary but rather as intertwined concepts with social, material and spatial attributes that operate at the macro, meso and micro level. In particular, we will discuss how discrepancies between politics of prevention and practices contesting the power of states intersect with hope, anticipation and the diverse nuances of precarity and disappointment that shape contemporary mobilities. Our discussion aims at bridging different levels to foreground how societal hope and uncertainty interact. At one level, states have a role in distributing hope for residents within their territories, in the most extreme form by granting them legal existences or deeming them illegal. This is not just a question for the state but has moved to a supra-national level where the Western interpretation of rights and wrongs is becoming increasingly dominant. At another level, societal hope is about the collective and normative values ascribed to migration. Most migratory projects are rooted in a shared expectation of migration as a means to upward social mobility, empowerment and/or social change, erasing distinctions between individual and collective interests.

Grounded in empirical research, the papers will demonstrate that for migrants, immobilities – due to debt, the need to remain invisible to authorities, doing work with stigmas attached, blockages imposed by the control of boundaries, to mention but a few – require negotiation and circumvention. Just as mobilities rooted in new configurations of gendered subject positions and material manifestations of success demand skilful assertion to be conducive of individual and collective pursuits of better futures across different spaces.

Crime, Conflict and (In)security

This theme considers the problems and issues that arise in managing uncertainty in areas typically defined by Western nation states as 'high risk'. Concentrating on two such areas - cyber-security and politically and religiously motivated violence - contributors will grapple with the impacts and effects of ambiguity and contingent knowledge on the definition and regulation of (perceived) threats. In particular, underlying questions of power will be addressed, alongside forms of engagement that ostensibly materialize outwith the ambit of formal institutional processes.

The processes and practices delineated above will be addressed through the lens of law in the case of cyber-security, with a specific emphasis on the implications of a looming Brexit. In relation to 'terrorism', the prisms of analysis will be pre-emptive counter-radicalisation strategy and survivor's accounts of critical incidents. Presenters will seek to elucidate the specific challenges presented by 'unknowns' and to account for the modes of uncertainty that are rarely acknowledged. In addition to criticizing extant modes of managing incertitude, contributors are invited to render explicit particular dilemmas and ponder on alternative approaches to

conceptualizing and addressing uncertainties in the context of the problem of politically and religiously motivated violence.

Culture, Religion and Uncertainty

Uncertainty is a perennial and fundamental aspect of human experience, and making sense of living and dying with uncertainty is a central element of many of the world's religious and spiritual traditions, as well as many non-western and indigenous cosmologies. This session attempts to explore some of the breadth of religious, spiritual and cultural understandings of knowledge, faith and certainty in order to ask how insights from these might enrich (the often more narrowly 'risk-framed') academic and policy debates around decision-making under conditions of uncertainty.

Contributors from a range of disciplinary backgrounds will bring both scholarly and personal reflections to bear on questions such as: How do specific cultural, spiritual or religious traditions characterise the limits to human knowledge, and what do these limits imply for decision making under conditions of uncertainty? Does the holding of a religious or spiritual belief change one's attitude toward uncertainty, and in what ways? What is the relationship between faith and certainty? Can greater awareness of the insights from different spiritual and cultural traditions help to foreground the need for more humble, plural ways of characterising decision making under conditions of incomplete knowledge? What insights can different spiritual and cultural traditions offer about the relationship, if any, between the drive to know fully and to control? Is there a spiritual or religious dimension to the whole discourse of 'sustainability' or 'transformation', and if so what does this imply for decision-making?