



Uncertainty, Digital Sciences and the Long Term A Global System Science Conference

Villa Finaly, Firenze, September 15-17 2013

A quick search on Google about what “made the world faster” returns as first results: the cloud, internet, globalization, technology, wireless communication (and the end of the Cold War). We have begun to design technologies that can take advantage of this increase in the speed of information transmission to develop better short-term insights. Some claim we can now forecast the spreading of flu pandemics or the volatility of stocks using search query data, the results of elections using prediction markets, the demand of new products by tracking their adoption by influential characters in social networks, and better manage prevention of and recovery from extreme events.

The availability and rapid analysis of large quantities of big data seems to often be understood as making societies ‘better’. However, global complex socio-economic-ecological systems, formed by a large number of parts at different scales of more or less hierarchical systems, produce emergent patterns and unintended consequences at various scales. A key feature of such complex interactions is that outcomes are inherently uncertain and big data cannot reduce this uncertainty. This is particularly so if the interactions are not just physical, chemical and informational but human, and hence subject to human feeling and reflexive agency.

Lane and Maxfield (2005) coined the term ontological uncertainty to refer to situations where human agents must make decisions in a context where not only the future trajectory of an entity is uncertain but also its future interactions with other entities and those with each other. It can also be called radical uncertainty and is the type recognised by Keynes in his well-known remarks in the General Theory.

Keynes emphasises how economies depend on action and in this respect his approach has been distorted by those that took up his work and modelled only expectations. The central overlooked issue in such conventional approaches is implementation. How do actors act if they have no calculable basis to imagine outcomes and also know that several conflicting and highly consequential alternatives are perfectly possible? One option is to withdraw into the short-term, which in the current world economy may be happening. Another is to find a way to act. The problem preoccupied Keynes because he lived in a society mired in long-term investment inactivity. In that context he stated firmly that big decisions result from a “spontaneous urge to action rather than inaction” and are not “the outcome of a weighted average of quantitative benefits multiplied by quantitative probabilities” but, of “the state of confidence... to which practical men play the closest attention”. He put forward, but did not develop, the idea that what mattered was “animal spirits”.

Policy makers are often given expectations. What they have to do is act. Most decisions at all levels are made in conditions of ontological uncertainty. While scientific and technical developments seemed to develop better tools for prediction and control, if we look longer-term it now seems that could be an illusion. The crises of all kinds can be viewed as wake-up calls to remind us of the limits to our anticipatory capabilities and the need to consider and improve our capacity to question models and to expect unintended long-term consequences.

Whether society has become more complex, or whether it is just that we are more willing to analyse it as a complex set of emergent systems made up of interacting parts, the complexity framework and the new tools provided by the ongoing and expanding digital revolution, provides an opportunity.

How to scope and obtain high quality research based on a fully interdisciplinary complex systems approach to understanding how actions unfold into outcomes is, therefore, of very clear relevance. There is a need to reflect on and experiment with how knowledge and foresight are developed and to understand how confidence and empowerment appear in multi-level, multi-stakeholder decision and policy-making processes. How emerging narratives and visions connect and co-evolve with existing ones and what is the role of human emotion and subjective narrative capacity in creating economic and social reality.

This workshop aims to take the issues of uncertainty and complexity seriously and to help to develop future research and research policy. It seeks to link uncertainty and complexity to foundational work in human psychology and the social and psychological management of the human capabilities created by uncertainty as well as to new sources of data and methods of research. The workshop will involve a wide variety of individuals from many disciplinary backgrounds and seek to develop a road map for going forward.

Conveners:

Diana Mangalagu, Professor, Oxford University, UK & Sciences Po, Paris, France

David Tuckett, Professor, Research Department of Clinical, Educational and Health Psychology, University College London, UK

Antoine Mandel, Associate Professor, Sorbonne Economic Centre, Panthéon-Sorbonne University, Paris, France

Agenda

Sunday 15th September

Arrive.

18.30: Welcome drinks

Monday 16th September

8.30 – 10.00 Session 1: Digital Policies Fit for the Long-term

Speakers:

Complexity and Economic Policy

Alan Kirman, Emeritus Professor, GREQAM, University Aix-Marseille III, France

European Digital Policy

Nicole Dewandre, Advisor to the Director-General on Societal Issues of the DAE, CONNECT Directorate General, European Commission

Moderator: Diana Mangalagiu, Professor, Oxford University, UK & Sciences Po, Paris, France

10.30 – 12.30 Session 2: Uncertainty and Our Analytical Frameworks

Speakers:

Uncertainty and Human Rationality in Decision-Making

Konstantinos Katsikopoulos, Senior Researcher, Max Planck Institute for Human Development, Berlin, Germany

Uncertainty and Human Society

Allen Abramson, Senior Lecturer, Dept. of Anthropology, University College London, UK

Coping with Uncertainty in Social-ecological Systems

Jochen Hinkel, Senior Researcher, Global Climate Forum, Berlin & Potsdam Institute for Climate Impact Research, Potsdam, Germany

Moderator: Nils Ferrand, Senior Researcher, IRSTEA Montpellier, France

13.00 - 14.30 Lunch

14.30 – 16.00 Session 3: Uncertainty and Narrative in Economic Decision-Making

Speakers:

Human Emotion and Human Reason

Prof. David Tuckett, Research Department of Clinical, Educational and Health Psychology, University College London, UK

A New Approach to Macro-Economic Thinking

Paul Ormerod, Volterra Partners

Moderator: Antoine Mandel, Associate Professor, Sorbonne Economic Centre, Panthéon-Sorbonne University, Paris, France

16.30 – 18.30 Session 4: *Reflections on Research Implications*

Moderator: Thierry Malleret, Co-founder, Monthly Barometer, France

20.00 Dinner

Tuesday 17th September

8.30 – 10.00 Session 5 *Uncertainty and Anticipation in the Digital Sphere*

Speakers:

The Whole is Smaller than the Parts

Tommaso Venturini, Associate Professor, Médialab, Sciences Po, Paris, France

Forecasting Financial Crises

Igor Mozetic, Senior Associate, Department of Knowledge Technologies, Jozef Stefan Institute, Ljubljana, Slovenia

Moderator: Stefano Mirti, Professor & Partner, Interaction Design Lab, Milan, Italy

10.30 – 12.00 Session 6 *Uncertainty, Understanding and Prediction*

Speakers:

Scenario Thinking and Complexity

Angela Wilkinson, Counselor for Strategic Foresight, Organisation for Economic Co-operation and Development, Paris, France

Uses and Abuses of AI

Robert Elliott Smith, Senior Research Fellow, Department of Computer Science, University College London, UK

Moderator: Gerard Weisbuch, Emeritus Professor, Ecole Normale Supérieure, Paris

12.30 - 14.00 Lunch

14.30 – 16.30 Session 7 *Futures, Uncertainty and Reflexivity in the GSS Research Program*
General Discussion.

Chairs/Moderators: Diana Mangalagiu, Antoine Mandel, David Tuckett

Depart