



Centre for the Study of the Sciences &  
the Humanities (SVT), University of  
Bergen (UiB), Norway

**2019 SDG Conference  
Bergen, 7 & 8 February**

**Session 3 – re:working // Knowledge for Partnerships  
Challenges & Lessons in the use of  
Science for Sustainable Development**

**SILVIO FUNTOWICZ  
@SFuntowicz**

---

## **Challenges in the use of science for sustainable development**

---

**Silvio Funtowicz**

European Commission Joint Research Centre, Institute for Systems,  
Information and Safety (ISIS), Ispra, Italy

**Jerome Ravetz**

Research Methods Consultancy, London, UK

**Martin O'Connor\***

C3ED, Université de Versailles - Saint Quentin en Yvelines,  
47 boulevard Vauban, 78280 Guyancourt, France  
(email: [Martin.OConnor@c3ed.uvsq.fr](mailto:Martin.OConnor@c3ed.uvsq.fr))

**Abstract:** This paper summarizes the findings of a panel discussion held at the UN CSD, New York, in 1998.

1998: EU-sponsored panel at the UN CSD, New York.

“Those who place their faith in science and technology may suggest that knowledge advances can, in themselves, in due time bring solutions to the dangers, disruptions and dilemmas that early science and technology interventions have generated. We propose however, that the inherent complexity, high stakes and urgency of SD is not something that can be handled by technological advances alone. New quality assurance processes are needed for science and policy for sustainability, based on wide societal and ethical reflections.”

“This proposal shows a clear understanding that scientific practice is not fundamentally, ‘value-free’ but that it has to find its justifications by reference to prevailing social concerns. Similar views are now voiced widely in scientific networks.”

The major challenges for a 'sustainability science' arise from increasing complexity at the ontological, epistemological, and political levels, calling for an integrated science going far beyond an inter-disciplinary style of research.

Complex socio-ecological systems share a number of fundamental properties that require changes in scientific methods, criteria of truth and quality, and conceptual frameworks. These properties include non-linearity, plurality of perspectives, emergence of properties, self-organisation, multiplicity of scales, and irreducible uncertainty.

Int. Journal Social Science 168: 219-229 (2001)      [www.unesco.org/issj](http://www.unesco.org/issj)

Science for the twenty-first century: from social contract to the scientific core, Gilberto C. Gallopín, Silvio Funtowicz, Martin O'Connor, and Jerry Ravetz

“Illusion is the most tenacious weed in the collective consciousness; history teaches, but it has no pupils.”

[Antonio Gramsci "Selections from political writings \(1921-1926\)"](#)

[Antonio Gramsci, Italia e Spagna in l'Ordine Nuovo, anno I, n.70, 11 marzo 1921]

