The challenges and opportunities of integrating natural and social sciences from an academic perspective

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Future Earth and Integrated Science

- Recognition that human activities are an important driver of changes in the natural/physical world has led to growing support for interdisciplinary approaches

- Significant progress

- Yet, conducting truly *integrated research* that bridges social and natural sciences faces many challenges

A Perspective....

In interdisciplinary projects social sciences often viewed as on the margins, added on, and/or a minority

Academic Challenges

Dualistic intellectual paradigm in which nature and social/cultural are perceived as separate (Strang 2009)

Universities are organised around this dualism into faculties, schools, departments

Educational and training still largely shaped in disciplinary arrangements

Key differences: Social and Natural Sciences

"As well as using different models for analysis, researchers in the social and natural sciences ask different kinds of questions, employ different methods, collect different kinds of data, use different analytic tools and produce different kinds of outputs." (Strang, 2009, p.5)

CHALLENGES | Nature and Society

The way problems are framed are central to the solutions that become possible

‘language—custom—methodology’

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Deeply embedded systems (and forms) of inquiry

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Questions are formulated within specific disciplinary perspectives and, in turn, determine the method used

At this fundamental level of inquiry there are clear epistemic differences between science and social science (ways in which the object of inquiry is knowable).

The Changing Nature of Social Sciences

- Local versus global or particular versus universal
- Cultural and context specificities
- Relativism

Social Sciences

- Focus on explanation and interpretation
- Quantitative and qualitative data
- No easy translation into policy solutions and practices

OPPORTUNITIES: context

Growing realisation that we are confronted with novel, unpredictable futures both ecologically and socially, and that these are interconnected.

Opportunities

- Technological advances
- Move to big data and large-scale surveys

Opportunities

- Social sciences increasing focussing on global issues e.g. World Social Science Report on Environmental Sustainability

- Future Earth as an opportunity to move from dualistic approach (natural vs human) to a perspective that views human and natural as inter-related

Key Challenge

If Science/Nature and Society/Social Science are characterised by different epistemic communities, and different language and conceptual frames, what are the critical ‘entry points’ to integration?

Intentional Interventions

- Multidisciplinary at the outset
- Equality in participation
- Commitment to funding multidisciplinarity, collaboration and teams
- Changing rewards and incentives – support for joint project planning
- Education policy changes especially university curricula and organizational arrangements