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INSTITUTE FOR SUSTAINABLE FUTURES

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UNIVERSITY OF TECHNOLOGY SYDNEY

Evaluating and enhancing the contribution of prospective exercises to change processes and sustainability

Summary

This project is investigating emerging approaches for tackling highly complex problems and the change requirements of sustainability. Prospective approaches (which are defined below) are increasingly used and championed for generating more transformational changes – such as transforming energy systems, radical improvements in eco-efficiency, and climate change adaptation – however, little is known about their impacts. Scholars have also raised questions about the utility and evaluation of these practices[1]. The project examines: the roles of prospective approaches in change and innovation processes; how their impacts can be evaluated; and ways their contribution might be enhanced.

Opportunities for collaboration, e.g. with change consultancies, are currently being sought by the research team: Stephen McGrail (PhD candidate) and Dr Chris Riedy (Principal supervisor).

Project background

The growth of 'prospective' approaches

Prospective techniques and exercises are increasingly being incorporated into new approaches for generating change, such as those used for collaborative knowledge creation. The term prospective has been used to refer to participatory processes in which a 'business-as-usual' future is questioned and stakeholders are empowered to realise alternatives; more broadly the term means "relating to or effective in the future" (source: Merriam-Webster dictionary). A range of techniques are increasingly being used to enhance forward-looking analysis and policy such as: diverse forms of scenario planning and scenario-based exercises (e.g., expert-driven, participatory); visioning and backcasting exercises; experiential foresight processes (e.g., participatory 'simulations'); horizon scanning and weak signal monitoring; and computer-assisted modelling (e.g., integrated assessment models).

EXAMPLE: Sustainable Shipping Initiative (Forum for the Future)

The Sustainable Shipping Initiative (SSI) brings together "some of the biggest names in the maritime sector to plan how it can contribute to – and thrive in – a sustainable future". The SSI incorporates a range of prospective techniques, including trend and scenario analysis (during project phase 1 'Case for Action'), and visioning and backcasting processes (during project phase 2 'Long-term 2040 Vision'). The project involves a diverse range of participants including: ship owners and operators; shipbuilders and service providers; banks and insurers; classification societies; customers and NGOs (e.g., WWF).

EXAMPLE: Future Grid Forum (CSIRO)

This project is an industry-led initiative involving the Australian electricity system stakeholder community in exploring a range of future options through a mix of industry debate, and quantitative modelling and simulation. The Future Grid Forum is 'whole-of-system' in scope seeking an industry-wide view on six alternative future scenarios, for which the physical/technical feasibility will also be assessed. CSIRO seeks to shift debate on Australia's electricity future to more of a 'whole-of-system' perspective.

Prospective approaches are used by many organisations including change consultancies, think tanks, and sustainability consultancies. Scenario analysis and modelling techniques are increasingly being used by large institutions (e.g., UNEP, International Energy Agency, government agencies).

1 For example see discussion in: Vecchiato, R. 2012, 'Strategic foresight and environmental uncertainty: a research agenda', Foresight, vol. 14, no. 5, pp. 387-400; Visser, M.P. & Chermack, T.J. 2009, 'Perceptions of the relationship between scenario planning and firm performance: A qualitative study ', Futures, vol. 41 (2009) no. 9, pp. 581-92.

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Research context

Sustainability challenges are variously referred to as "wicked" problems, "super-wicked" problems, "hyper-complex" problems, and/or "social messes". Such problems are seemingly intractable, and they include most global environmental problems (e.g., climate change), rapid and systemic energy transitions, biodiversity loss, managing nuclear waste, and governing emerging technologies. The debate about the best ways of tackling such problems has intensified as, on the one hand, the scale and speed of transformations seen as necessary by scientists concerned with global sustainability has increased and, on the other hand, the level of faith in existing change processes has declined. More collaborative approaches – such as those engaging major stakeholders in research and planning, and enabling collective reflection – may offer effective ways of "tackling" complex problems.

Some scholars and practitioners argue prospective approaches aid the generation of more innovative and effective responses to current complex challenges. The highly complex problems noted above are often clouded by uncertainty (e.g., scientific uncertainty) and require analytical tools that can develop a holistic understanding of interrelationships and the interactions across social and natural systems. Additionally, major interventions may be required when high levels of uncertainty remain and the most severe consequences of inaction are in the far future[2]. These aspects suggest that prospective approaches might be suitable. Such approaches are increasingly experimented with, including new forms of scenario planning, 'transition' scenarios, collaborative roadmapping and visioning exercises, as well as overarching governance approaches such as 'transition management'[3].

With the emergence of new change processes, and increasing adoption of prospective approaches within these, there is a need for research to understand: how change does or does not occur as a result of such exercises; what is required for successful change to occur as a result of these processes; and what limitations and pitfalls these approaches entail. There has been little in-depth research on the effects and overall 'effectiveness' of prospective approaches, and scholars and practitioners alike often report difficulty evaluating the outcomes of new prospective change-oriented approaches. The overall result is insufficient research conceptualising and demonstrating their impacts, and examining how, when and why the practices do (or do not) contribute to realising desired outcomes.

Project description

This research project will examine the use of prospective approaches in emerging change processes (e.g. those facilitated by change consultants) and identify ways of evaluating their contribution to the outcomes of these processes. The project will pilot new forms of evaluation research and – via qualitative inquiry (e.g. case studies, ethnographic research) – add to the evidence base for how, when and why prospective approaches do (or don't) contribute to efforts for addressing complex problems. In doing so this project will make a contribution to filling the knowledge gaps noted above.

The project will also involve reviewing theories and literature that can inform the use of such practices and strategies, such as theoretical perspectives and empirical research on 'system-scale' change and on governance strategies for addressing sustainability challenges. This can help to ensure emerging change and innovation processes are theoretically-informed and grounded. As an example, theory on the loci for interventions and dynamics of transformative change is relevant. In doing so, the project will also, in part, be modelled on research in the Science and Technology Studies (STS) field.

Next steps

To advance the project requires opportunities to conduct evaluation research and study the use of prospective approaches. The study would ideally be conducted in collaboration with organisations that are conducting such activities. The next steps will involve discussions with relevant organisations, and identifying cases for analysis and relevant evaluation approaches.

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2 Levin, K., Cashore, B., Bernstein, S. & Auld, G. 2010, 'Playing it Forward: Path Dependency, Progressive Incrementalism, and the "Super Wicked" Problem of Global Climate Change', paper available at: http://environment.research.yale.edu

3 For example see Reos Partners, transition research programs (e.g. the Dutch Research Institute for Transitions), and local Australian examples such as the Victorian Eco-Innovation Laboratory and the projects of the NGO Australia 21.