

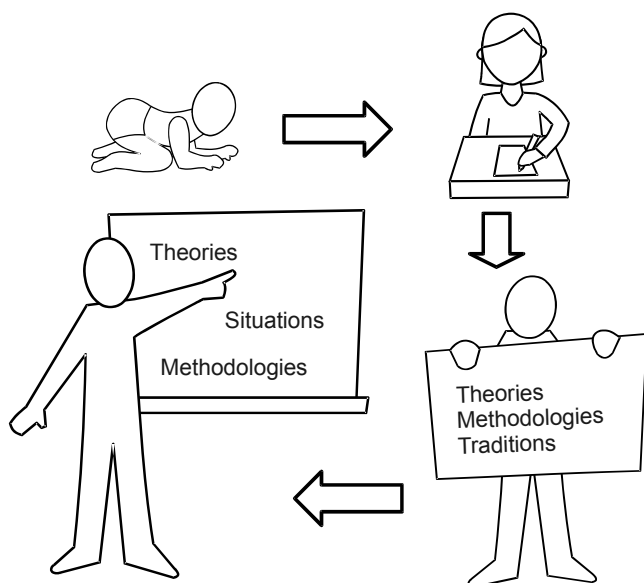


Perspectives on Water Governance Research

Introduction

This water briefing paper introduces some of the outcomes of a workshop for early-career researchers (ECRs), held in Melbourne during April 2011. The workshop program was designed to explore governance research from a range of disciplinary perspectives, grounded in participants' own research. We aimed to show the contribution of broad disciplinary traditions to water governance research, to examine how these can be situated in trans-disciplinary research, and create epistemological awareness.

The workshop began with an intellectually stimulating role play of research as praxis, led by Professor Ray Ison. This evoked a four-stage journey from birth to research and the choices available along the way. The following figure illustrates the four stages of the journey.



The first of the four stages examined the circumstances surrounding a newborn person entering a world with established traditions, practices and understandings.

At the second stage was a conceptual learner – a child who is learning about the world through formal education and their own experiences.

Arriving at the third stage was a person who identifies as a researcher and participants examined how traditions of understanding and life experiences shape

a researcher's frame. It was recognised that multiple research traditions exist (e.g. legal, social, ecological), with their own language, concepts and practices. The experience of training in these traditions leads to a particular set of theories in use, methods, and interpretations of reality – defined as first-order research.

Moving from the third stage to the fourth stage involved a shift from first-order research to second-order research as praxis, which involves explicit choices about research methodology, theoretical frameworks, situation framing and whether to be situated within or outside of a situation.

Perspectives on trans-disciplinary research

Dr Chris Riedy, from the Institute for Sustainable Futures at the University of Technology, Sydney, gave a presentation on why we need trans-disciplinary research and how to do it. Framing water governance as a *wicked problem* lends itself to non-disciplinary choices. The distinction between different types of disciplinarity in research was made, summarised in the table below.

Table: Types of disciplinarity in research

Type	Features
Disciplinarity	Specialisation in isolation
Multidisciplinarity	No cooperation
Pluridisciplinarity	Cooperation without coordination
Interdisciplinarity	Coordination from a higher level concept
Transdisciplinarity	Between, across and beyond disciplinarity

Dr Riedy introduced trans-disciplinary research as transcending the boundaries of traditional research disciplines, both epistemological and fact/value (Carew and Wickson 2010). To some degree this also implies that the boundaries between different ways of creating knowledge are artificial.

A set of criteria for quality trans-disciplinary research was given, based on Mitchell and Willetts (2009). These included: (1) original and creative contribution to knowledge and/or practice; (2) critically aware and coherent argument; (3) Critical, pluralistic engagement with appropriate literature, artefacts, the research

context and multiple stakeholder perspectives within it; (4) evidence of critical reflection/reflexivity on own work; (5) alignment between epistemology, theory, methodology, claims and enquiry space; (6) mastery of process and/or outcomes; and (7) effective communication for diverse audiences.

A distinction between a *system-determined problem* and a *problem-determined system* captured the essence of the differences between disciplinary and trans-disciplinary research respectively. However, this was not to say that one mode of research is better than another. Rather, each of the modes listed in the table are appropriate in different contexts and that trans-disciplinarity could be used in scoping, contextualising and disseminating disciplinary outcomes.

Environmental economics research

Dr Caroline Sullivan, from the School of Environmental Science and Management, Southern Cross University, presented her perspective on water governance, climate adaptation and economics. A defining image from her presentation was that nowhere on Earth can you find an *economy* – this being a system of exchange between humans for factors of production that originate in the environment. As Earth is a finite system, these factors of production are limited and scarce. In this context, *economics* is the study of how humans allocate scarce resources to meet their needs and wants.

Dr Sullivan contrasted mainstream neoclassical economics' lack of ethical concerns with the need for ethics to underpin human decisions if we are to have a sustainable future. The differences between *neoclassical (environmental) economics* and *ecological economics* were further highlighted as follows.

Environmental Economics is the neoclassical approach to including the environment in economic systems: the economy is the core system. Key elements include: everything driven by the market mechanism; market assumed to be efficient, and efficiency is the main objective; maximising profit and market share are key objectives of producers; welfare is assumed to be gained through ever increasing economic growth; no attempt is made to link what can be achieved with what is ecologically possible; non-marketed resources tend to be ignored; the finite characteristics of natural resources are not considered; models are based on economic principles combined with statistics (econometrics).

Ecological Economics is a more recent approach to economics which recognises that the environment is the core system supporting an economy. Key elements include: Earth is seen as a whole system;

markets have a limited role; ethics and equity are more important than efficiency; precautionary principle is important as we are faced with uncertainty in environmental interactions; production needs to be linked to what is ecologically possible; unpriced resources need to be considered as much as priced ones; everything is ultimately generated from energy from the sun; models must be multidisciplinary and systems based.

Australia's natural resources management

Mr. Jason Alexandra, from the Murray Darling Basin Authority, examined Australian NRM through the evolution of ideas, culture, values and practices that have been influential since European colonisation. He spoke of some of the ecological and cultural consequences of these approaches and argued for a rethinking of landscape policy, governance and management which embraces innovation of ideas and production systems, adaptive capacity, diversity and shared learning.

He described landscapes as complex co-evolved systems based on long-term complex negotiations between culture and nature. Culture and landscapes influence each other and people are constantly making the landscapes of the future in the vision of their ideal. Historically, the vision of Australia as a coloniser country was of landscapes that can be transformed to productive agriculture, and Australia's culture, economy and agricultural practices were based on this vision of 'control over nature'.

We now seek alternative visions of our landscapes and the realities of their 'Australianness' i.e. the vulnerability of ecosystems, predilection to drought, flood and fire. That is, biodiversity challenges and ecosystems in need of care, not exploitation. Over the last twenty years in particular, culture, stories, values and visions have started to change. Additionally, the climatic conditions have changed creating greater complexity and undermining the notion of stationarity – we can not reliably predict and plan for future climatic events based on past events. There is increasing uncertainty. Therefore, he argued for the need to be investing in new approaches to managing natural resources through developing scientific capacity and researching key questions about dynamic non-steady state systems - e.g. critical questions about thresholds and tipping points. In particular, there is a value in re-thinking Australia's landscapes as a 'conservation and cultural' economy, building on new approaches, multi-culturalism, multi-functionality and the redefinition of indicators and progress. Further reading: Alexandra and Riddington (2007).

Where does law and regulation fit in?

Professor Lee Godden, from the Melbourne Law School, The University of Melbourne, took workshop participants through a “five year law degree in 90 minutes”. Professor Godden explored the different ways that law is defined and conceptualised, placing these on a scale from law as norm to law as authority. The first, which is the favoured position of natural law theorists, sees a connection between law and a natural moral order, with a deity or community norms as the top of the moral order. The second, also called positive law (or positivism), takes authority from human structures, such as elected parliaments.

Participants engaged in group discussion on how law applies to their work in water governance, and were asked to consider whether it is through (i) law as rules, (ii) law as norms, (iii) law as ‘accepted’ practice, (iv) law as authorised exercise of power, or (v) ‘behaviour change’ (and whether that is ‘law’). Professor Godden introduced a distinction between ‘formal law’ and governance, the latter being the administrative and bureaucratic process that is not law, but may institutionalise law.

On regulation, the shift towards collaborative governance and economic rationalism are placing less emphasis on a centralised role of the state in governing environmental issues - also understood as ‘governing at a distance’ (Godden and Peel 2010). Participants were brought to understand that in the water sector, regulation is expressed through a spectrum of regulatory models, including market-mechanisms, corporatisation, benchmarking, and hybrid models of self-regulation and government audit.

Towards the end of this workshop session Ms Jude Wallace, also from The University of Melbourne, added her thoughts on new forms of blended regulatory models, based on a catchment-based research project in Victoria.

Water governance and social disadvantage

Dr Fiona Miller, from The University of Melbourne, presented on water governance and social disadvantage, with particular emphasis on issues of equity and social vulnerability. She sees water governance as ‘the arena where struggles over the meaning, control and use of water can be negotiated and potentially resolved’. There are generic concepts of ‘good governance’, such as equity, effectiveness, sustainability, integration, stakeholder involvement. However, governance should, importantly, be context-specific and informed by particular ecological, political, social, cultural needs. Developed in a context specific way, there is more likely to be recognition of diversity

and the assumptions and dominance of certain values and knowledges.

Governance can greatly determine the extent of equity in water distribution. Water equity concerns how much water people have access to for basic needs or livelihoods, and the ease and security of that access. The issue of access to safe and reliable water and sanitation continues to be a major global health issue, which impacts disproportionately on the world's poor and women.

A rise in influence of market mechanisms, private sector participation and privatisation in the water sector has raised concerns regarding the potential retreat of public institutions. There needs to be a more nuanced appreciation of the role of power in water matters. Users of water with little political power, including the environment have the potential to be negatively impacted upon.

There are a range of ways that individuals, groups (communities, sectors, regions) or ecosystems can be vulnerable in relation to water, although there are often multiple stresses operating simultaneously. Dr Miller described the ways in which society can be vulnerable, including to: environmental risks and hazards (pollution, floods, water scarcity, storms, sea surges); economic risks (changes in market relations and access, removal of subsidies or tariffs, price fluctuations); and social risks (conflict, disease, political upheavals, unemployment, discrimination). Vulnerability can be reduced through the governance choices we make in terms of institutional arrangements, the distribution of costs and benefits and through developing coping strategies and resilience.

She questioned how well we are currently prepared to cope with climate change in terms of the variability and increased competition over the resource. She identified an important missing link between studies on the impacts of climate change on water, and how associated society-water relations influence social vulnerability.

Water governance and philosophy

Associate Professor Adrian Walsh, University of New England, began his presentation on philosophy by asking participants to consider questions about their own research in terms of methodological and normative problems and assumptions. He asked how ECRs would approach a non-empirical problem in their research. From this point the discussion turned to how philosophy, which has been largely absent in many water governance debates, has a role to play in questions of water distribution decisions, particularly as they relate to distributive justice and equity. The issue of justice arises as a natural consequence of

scarcity, where humans have to make decisions about how those resources are distributed. These debates, and claims of fairness (and unfairness) in allocation, are not issues that can be 'solved', but a process which society must continually make decisions about; however, they often only emerge in times of crisis.

Markets are one procedural mechanism that may bypass questions of normativity and assumptions because they are not directly governed by issues of value or justice. However there are underlying values in the justification for markets (e.g. utilitarianism) and other rules in place to guide the use of markets, such as sustainable diversion limits.

The next part of the presentation turned to the question of virtue, and how different systems of water distribution either assume that society is 'virtue rich' or 'virtue parsimonious'. For example, a stewardship system assumes that there is a good supply of virtue amongst users, whereas a market mechanism facilitates distribution where there is little assumed virtue, hence it relies on individual self-interest.

Associate Professor Walsh offered three reasons why water, as a distributive good, has not been a subject of explicit philosophical theories. First, water is a good that is utilised in a number of different ways, some not obvious (e.g. interception activities); second, the issue of natural injustice and social injustice can be somewhat blurred in relation to water and; third it is a good that can easily change from a benefit to a burden.

A systems research perspective

Across two presentations, Professor Ray Ison introduced different ways of framing water governance research and his perspective on systems research. Framing is a key governance issue because of its influence on initial starting conditions and pathway dependencies. Failure to frame appropriately limits choices and thus innovation. Some key framings for water governance research were introduced. Firstly, the distinction of naming water governing situations as 'wicked problems' opens up conversation about charting a course through the situation, rather than trying to reach an end-point or 'solution'. Systemic and adaptive governance, based on the cybernetic concept of responding to feedback, was considered as a key framing of adaptation in wicked situations. Other important framings were 'water sensitive cities', 'agro-ecosystems' or 'socio-ecological systems'.

The word 'system' was described as bringing forth a duality of both systemic and systematic elements. What is commonly understood as *systems thinking* was instead introduced as a historical set of *systems approaches* situated on a scale of 'systems as epistemologies', or ways of knowing, to 'systems as

ontologies', or seeing systems as real-world entities. These different approaches have implications for framing water governance research as either situations (e.g. soft approaches, usually seen in the social sciences) or as real-world systems (e.g. hard approaches, commonly seen in ecology or engineering).

On the topic of systems practice, Professor Ison talked about five constraining settings characterising water governance: (1) the pervasive target mentality, (2) living in a projectified world, (3) failure to appropriately frame situations, (4) an apartheid of the emotions, and (5) institutional complexity. Closing his presentation, Professor Ison put forward the idea of an ethics of practice - fostering the circumstances for epistemological awareness and researcher responsibility.

Summary

Revisiting the idea of *research as praxis* described at the start of this paper, early career researchers in water governance often arrive at research, through a variety of disciplinary traditions, in a first-order manner. To move from first-order to the more epistemologically-aware second-order research is a choice to be informed by and explicitly wield theoretical and methodological frameworks, from disciplinary or cross-disciplinary traditions, and to engage in research situations. Researching in this way opens up a wealth of new understandings and practices, and has the potential to foster a generational transformation in water governance research and practice.

Further Information

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