

in the pipeline: a symposium

**New directions in cultural research on water
19-20 July 2007
Centre for Cultural Research
University of Western Sydney
Parramatta, NSW**

Abstracts



Thank You...

As all participants at *In the Pipeline* would realise, events like this require a lot of behind the scenes work, while the affordable registration fees are a sure sign that benefactors are lurking somewhere.

Grateful acknowledgement is therefore made to the generous sponsors and supporters of *Pipeline*, especially the **Centre for Cultural Research (CCR)** and its Director, Prof. David Rowe, and the Research Development Committee, for substantial financial and in-kind contributions, including of the highly proficient administrative team of Ania Ajiri, Tulika Dubey, Reena Dobson led by the indomitable and unfailingly wise Maree O'Neill. Much of the participant contact and organising was carried out by a succession of excellent conference assistants, most notably Linda Mirabilio, as well as Justine Humphry, Raya Massie, and—with great deftness and proficiency at the final stages—Anne Hurni. Other UWS personnel to acknowledge are Baden Chant of the UWS Office of Marketing for his beautifully designed poster, and Paul Grocott and Danielle Roddick from the UWS Office of Media and Communication for their media work.

Major support also came from various quarters within the **ARC Cultural Research Network (CRN)**, most notably its Convenor, Prof. Graeme Turner, and the Project Officer, John Gunders (who set up and maintained the Pipeline website within the CRN site, based at the University of Queensland). The Cultural Histories and Geographies Node of the CRN approved funding for *Pipeline* as part of activities of the 'naturecultures' group. Several of that group formed the academic panel that refereed the abstracts, helped sort out programming problems, and chaired sessions: the co-convenors A/Prof. Gay Hawkins (UNSW) and Dr Emily Potter (U Melb.), and Profs. Kay Anderson (UWS) and Stephen Muecke (UTS). Dr Kitty Van Vuuren, from the Centre for Critical and Cultural Studies (UQ), was also a valuable member that panel.

The sponsorship proffered by the **Australian Academy of Humanities** is particularly appreciated. Thanks to its President, Prof. Graeme Turner, to Sarah Howard, and most especially to Executive Director Dr John Byron. In a similarly generous spirit, through Communication Officer Jen Sage and Education Officer Corinne Cheeseman, the **Australian Water Association** offered to partner with the CCR for this event. This partnership provided publicity through the AWA's wide industry and research networks, and a vital conduit between researchers in fields often separated by disciplinary divides.

None of the above efforts would produce an occasion were it not finally for **all of the participants** who responded by investing the time and resources to get themselves into the *Pipeline* for a unique event that doesn't quite fit in anyone's normal professional conference circuits. Thanks to our international visitors, notably Drs Sarah Bell and Zoë Wilson, with whom the *Pipeline* idea was mooted at an early stage, and especially to our keynote speaker, Prof. Elizabeth Shove. Overall, the tremendous goodwill shown towards this event indicates that July 2007 is not too soon to gather together researchers keen to understand water as very much more than a purely physical or natural resource.

Zoë Sofoulis
Centre for Cultural Research
University of Western Sydney
Convenor, *In the Pipeline*



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Fiona Allon, University of Western Sydney

Water is the New Oil?: how to reconcile new values and old habits

In *Neo Power: How the new economic order is changing the way we live, work and play*, water is described as ‘the new oil’. The authors proclaim: ‘Expect to see water-based concepts and images incorporated into leading-edge design, luxury fashion and architecture as NEOs (the citizens of the new economic order) translate their explorations of water and its new symbolic value into consumption goods’.

Scarcity has certainly created a new value for water. Yet despite the increasing symbolic value of water in these kinds of future-oriented scenarios, many of the projects designed to actually cope with the water crisis are surprisingly past-oriented, harking back to modernity’s Promethean project of conquest and control and the principles of ‘Big Water’, as exemplified in the current plans for new dams, desal plants and so on.

Alongside this shift has emerged a growing practical and theoretical interest in water’s role in the activities of daily life. This is the terrain of everyday water, where values are rendered meaningful through daily practice, and where consumption patterns, habits and routines are collectively acted out and maintained, and also most likely to change. This paper will focus on these kinds of contradictions, where new values meet old habits, and where old values meet new expectations of use.

Biography

Dr Fiona Allon is Research Fellow with the Centre for Cultural Research and a recipient of an Australian Postdoctoral Fellowship for the ARC Linkage grant ‘Backpacker cultures, residential communities, and the construction of tourist spaces and landscapes: A regional study of changing tourism dynamics in Sydney’.

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Ms Claudia Baldwin, University of the Sunshine Coast

Eliciting values using photovoice for consensus building in water planning

This paper outlines the difficulties of engaging communities in politically sensitive and value-laden issues such as water. It considers a central theme that arises when community engagement processes ‘get stuck’ as a result of the cultural divide between farmers and government - how to understand stakeholder values and then how to address these in a consensus building approach to community decision making. This paper describes the use of an innovative qualitative data generating technique - photovoice - to uncover deeply held interests and values related to water planning. Psychological processes underlying the methodological efficacy and interpretation of photovoice data are considered. We describe the richness of this method and how it was used to inform water planning processes in two case study sites in Queensland, Australia – the Lockyer valley and Lower Balonne catchment.

Biography

Claudia is a Lecturer in Planning and Environment at University of Sunshine Coast. She is completing her PhD thesis at University of Queensland on ‘Consensus building in water allocation and use’, with sponsorship by CRC Irrigation Futures.

Claudia has 25 years experience in natural resource and coastal planning, management, and monitoring; water and land use policy; and public participation in Queensland government and Great Barrier Reef Marine Park Authority. She was involved in water policy development in Queensland government prior to commencing work as a consultant in 2002. She has recently completed an assessment of

stakeholder participation in dam projects globally for a Compendium on Best Practices for Dams and Development for UNEP. As part of her PhD and as a result of being an accredited mediator, she has facilitated a series of workshops between government and irrigators in the Lockyer Valley Queensland to resolve differences during the current water planning process. The Lower Balonne catchment is another case study site for her PhD.

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Sarah Bell, University College London

The driest continent and the greediest water company: drought in Sydney and London

Drought disrupts normal functioning of urban water systems and brings complex networks of relationships between catchments, infrastructure, institutions and private behaviour into public view. This paper analyses newspaper reporting of drought in Sydney and London. In Sydney drought discourse focuses on the need for urban water consumers to change their habits in line with living on the driest inhabited continent. In London drought discourse focuses on the failure of the private water company to manage infrastructure and protect urban consumers from rainfall variability. The analysis highlights the importance of institutional, ecological and cultural contexts in understanding water infrastructure provision and drought in cities.

Biography

Sarah Bell is a Lecturer in Environmental Engineering at UCL where she is also co-director of the UCL Environment Institute focussing on interdisciplinary water research. Her research interests centre on the relationships between technology and society as they relate to urban water systems. Her specific research interests include drought, water reuse, infrastructure provision in developing countries and the role of engineers in the water systems.

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Anne Bolitho

AQUIFER

In drought, spa companies in Melbourne defy water restrictions by ordering spring water from private suppliers. Every football club with a parched field seeks a permit for a bore. In rural catchments increasing use is being made of groundwater. 'If we fail to get the water then it's ruin to the squatter/ for the drought is on the station and the weather's growing hotter/but we're bound to get the water deeper down ...' Lines from Banjo Patterson's *Song of the Artesian Water*. In the face of ongoing drought and climate change, Australia's water resources look increasingly precarious. Underground water is the remaining frontier of exploration. As it becomes increasingly apparent that we don't know enough about surface water resources, wouldn't this be even more the case for the subterranean? If everything says it's time to take more care with above-ground waters, wouldn't we turn with greater interest to what is hidden, unknown? This presentation draws on the draft of my manuscript *Water Fortunes*, which enquires into my father's life as a planner and engineer, and taps into the conscious and non-rational tensions surrounding inheritance at a personal and social level.

Biography

Dr. Annie Bolitho is a researcher, writer and facilitator. She is author (with Mary Hutchison) of 'Out of the Ordinary, Bringing Communities, and their Audiences to Light,' which has been taken up in fields as diverse as museums and heritage, community health and environmental management. Her work in a policy environment at the Department for Sustainability and Environment in Victoria involved a focus on integrated catchment management. She specialises in the design and facilitation of deliberative decision-making mechanisms, such as citizens' juries. She is currently

involved in an ARC project investigating ethics in health research at the Centre for Health and Society at the University of Melbourne, and completing a book from her thesis 'Water Fortunes'.

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Frances Bonner, University of Queensland

"Waterwise advice on television gardening programs"

Among the many cultural intermediaries involved in disseminating ideas about responsible and irresponsible water use, the role of television garden program presenters is little investigated. This paper will report a study of the advice given on regular gardening magazine shows, like Gardening Australia and Better Homes and Gardens, and on makeover shows like Backyard Blitz and Ground Force. The growing prominence and characterisation there of 'waterwise gardening' and the contradictions evident between the different items in garden magazine shows will be the principal focus. Another aspect raised will be the extent to which the recent disappearance of dedicated garden makeover shows can be attributed to their signature use of water features and large swathes of instant turf, both now under question.

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Shelley Burgin, University of Western Sydney

With Basant Maheshwari, Tony Webb, Samsul Huda, Roger Packham, Qaiyum Parvez and Gary Wallac

A systems approach for water use and management in Peri-Urban Landscapes: connecting science and cultural dimensions for sustainability

Water has been managed as a resource from either a scientific or technological viewpoint. This approach to management of a scarce resource is ineffective. It is now recognised that water use and its management is multi-dimensional and complex, and is strongly connected with social, economic, cultural, spiritual, and political factors. Furthermore the associated management and research have often been fragmented at institutional, regional and national levels. The result is misunderstanding, confusion and conflict at various levels of government (local, state and federal), academia, industry, and the community (primary producers, industry and households). In turn this has further impacted on water sustainability. In this paper we offer a framework for exploring how to manage equity and sustainability of water use. We propose options to secure water supplies in the peri-urban landscape. We advocate a systemic action-research approach to exploring the debate that facilitates stakeholder participation and ownership of practical sustainable solutions.

Biographies

The authors Shelley Burgin, Basant Maheshwari, Tony Webb, Samsul Huda, Roger Packham, Qaiyum Parvez and Gary Wallace form a part of the nucleus of the College of Health and Science's Sustainable Water Futures research initiative at the University of Western Sydney. In the context of this paper, our interests span the spectrum of water in the landscape from an ecological (Shelley Burgin), hydrological (Basant Maheshwari) and risk management for climate change (Samsul Huda) perspective, through policy development and implementation (Tony Webb, Qaiyum Parvez, Gary Wallace, Shelley Burgin), green economics (Gary Wallace) and community development/policy implementation/training and technology transfer (Roger Packham, Basant Maheshwari, Qaiyum Parvez). We are united in our recognition that the solution to overcoming water issues lies in drawing on a broad range of skills from disparate disciplines to inform the debate through action research.

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Robyn Bushell, University of Western Sydney
With Bruce Simmons, University of Western Sydney

The development of a methodology to understand the relationship between community values and economic development

Increasing population growth, urbanisation and economic development is placing increasing stress levels on a number of community and environmental values. However, the linking of technical aspects of development to community values in a research context is difficult.

A values based diagnostic tool based, on EIA methodology, has been developed to relate triple bottom line values to potential impacts caused by development related activities. By applying this tool across different sections of the community shared perceptions of priorities of benefit or cost to community values can be identified. Management priorities can be made to reduce risk to community values, using this process.

The paper will briefly describe the adaptation of a triple bottom line assessment technique described in sustainability discourse to the impacts of development, in regards to the tourism and agricultural sectors in Australia. Application to water development activities and values is a major component of both sectors.

Biographies

Bruce Simmons B.Ap.Sc.(Analytical Chemistry), NSW Institute of Technology 1975, M.Ap.Sc. (by Research – Aquatic Ecology), NSW Institute of Technology 1985, is a University of Western Sydney (USW) research scientist. In a career spanning 30 years Mr Simmons has worked as an analytical chemist, designated NSW government researcher, divisional deputy manager, senior consultant, senior academic leader and, currently, UWS and CRC Irrigation Futures research scientist. His expertise includes Water Resources Management, Environmental Education and Environmental Management Systems. Since 2002 Mr Simmons has partnered more than \$2m (Australian) in grants and consultancies, and has numerous publications (book chapters, refereed papers, reports and conferences) in these fields. Mr Simmons has collaborated in research with 9 research agencies (including ACIAR, CSIRO), the World Health Organisation, AusAID and 15 state and local government agencies. Mr Simmons has also been on the convening panel of 3 local and 7 international conferences in the field of water resource and environmental management.

Dr Robyn Bushell is the Associate Head, School of Social Sciences and a member of the Centre for Cultural Research. Recognised internationally for research into the relationship between tourism, health and the local community and conservation of natural and cultural heritage. She has authored and co-authored several books and publications on tourism, wellbeing and conservation. She is involved in research with UNESCO, UN-World Tourism Organisation, the International Union for the Conservation of Nature, the World Health Organisation, national and local governments. Collaborative research with Bruce Simmons & Dr Jenny Scott over the past three years with the Camping & Caravan Industry and with local government has yielded a well accepted methodology for research associated with socially and environmentally responsible business practices, especially in the tourism sector. Robyn is a the NSW Vice Chancellors representative on the NSW Environmental Education Council, sits on the Board of Booderee National Park and on the Board of the Blue Mountains Regional Advisory Committee and Blue Mountains World Heritage Research Institute.

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Allison Cadzow, University of Technology, Sydney

Water Flexibility - Vietnamese women's experiences of migrancy, gender relations & rivers in Sydney & Vietnam

Vietnamese cultural analysts have drawn attention to distinctive cultural strategies of water flexibility within Vietnamese history – linking landscapes, spirituality, and the history of Vietnamese people through adaptability and change. This idea can be extended to discussion of Vietnamese women's negotiation of the 'new' experiences of gender relations, land and family through migration and refugee experiences in Vietnam and Australia.

Based on oral histories, cultural and literary analysis, the paper shows that for women who came to Australia as adults from mainly urban centres, the Mekong, Perfume and Georges Rivers are never simply bodies of water between banks. Rivers, memory, culture and family are entwined. Rivers are a place for reflection on homelands and new landscapes, people departed (yet spiritually present), children & their future (especially in terms of pollution and safety), their own experiences of shifting opportunities. Activities along rivers and nearby parks were regarded as of asserting family togetherness and strengthening of relationships between women and wider family.

Water flexibility could be used in environmental programs as a way of recognizing cultural and gendered relationships with urban rivers, recognizing how through migrancy, connections with environment in various locations are made, sustained and revised.

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Peter E. Charuk

Aqualux II - a video installation

Aqualux II, a video installation engages with scientific processes used to map the ocean, the largest body of water on the planet. This piece demonstrates the technology of video capture process, the imagery developed from this data processing and mapping. The piece is 10 minutes in duration.

Biography

Peter E. Charuk is an active artist and educator who has been working with the general thematic of water for the past few years. In 2005 I participated in an artist in residence program with CSIRO Marine and Atmospheric Research in Hobart and in particular the Biodiversity and Conservation Group, under the auspices of the Australian Network of Art and Technology (ANAT) and their Synapse Program supported by the Australia Council for the Arts. He has an extensive career in the visual and electronic arts. His experience includes exhibitions in the U.S., Bulgaria, U.K. and numerous Australian Galleries. He has been awarded a number of prestigious prizes and awards. He works with video installations, artists' books, photographic imagery, sound and text. He is represented in several major collections including the National Gallery of Australia, AGNSW, Artbank and the Polaroid International Collection. In 2002, Peter was one of the inaugural recipients of a Western Sydney Artists' Fellowship. In 2005 he was an ANAT Synapse Artist in Residence at the CSIRO Marine Research in Hobart. His current research engages with a thematic of 'water'.

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Bhakti Lata Devi, University of Western Sydney

with Zoë Sofoulis and Carolyn Williams

Putting the Users into End Use Analysis: Rethinking Residential Landscape Water Demand Management

End Use Analysis (EUA) is a method of analysing demand for a service (such as energy or water) with a view to quantifying the potential to maximise the service by minimising the demand on the resource being used to provide it. As a tool for planning and evaluating urban water demand management programs, EUA relies on assumptions about 'participation rates', that is, the proportion of the population expected to participate in a water savings program. The assumed participation rate is quite arbitrary at the time of planning and development, though assumptions are modified after studying take-up of actual programs.

As is typical of dominant discourses in natural resources management (Shove, 2003, Ch.1), the EUA focuses entirely on the end use of the water and treats the users either as a whole population (or proportion thereof), or as solitary entities who individually decide to participate in programs. Users can become merely the vectors by which houses acquire water-saving technologies. Left out of the picture are the 'meso-level' (Sofoulis & Williams, 2006) social structures to which people actually belong: their communities, interest groups, organisations, cultures, sub-cultures, etc. It is through such social networks that people interact with and influence or support each other to change.

The inadequacies of the individualist conception of people have for several decades been obvious to cultural researchers, the public health sector, and community development workers here and overseas, but this conception reigns almost unchallenged in urban water demand management planning and in expert discourses on water in Australia. One way of helping a cultural approach gain better traction is to critically engage with urban resource management planning tools like the EUA, and to design research and field trials of community- or culture-based approaches to implementing water-savings programs. These could demonstrate how such approaches can produce measurable increases in 'participation rate' and thus in water saving—an effect we argue is already demonstrable in the different participation rates amongst communities chosen for trial runs of programs compared to full-scale implementation. With a particular focus on outdoor residential water use, this paper explores putting the users into the EUA model by approaching them as members of groups and communities.

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Dena Fam, University of Western Sydney

Design and cultural acceptability of waterless toilets

Introducing ecological sanitation (ecosan) as a water saving strategy in public urban areas requires a combination of technical and maintenance systems appropriate for the existing socio-cultural context. A dry sanitation system is more than just a toilet: it must deal with management issues, disposal and potential reuse of treated urine and faeces, grey water discharges, comfort, affordability and health aspects. When all these issues are considered within a design strategy, there is a greater likelihood of cultural acceptability. The appropriate design and improved user interface of such a culturally sensitive product has the potential of increasing the rate of acceptance within society and therefore contributing to a changed water culture in Australia.

Biography

Dena Fam is an honours candidate at the University of Western Sydney within the School of Engineering (Industrial Design) supervised by Dr Abby Lopes. Her current honours project aims to design a culturally acceptable dry sanitation system for public toilets in urban parks. This project was designed as an urban water saving strategy with the potential to irrigate and maintain urban park gardens with recycled toilet waste.

She is also the recipient of the CRC Irrigation Futures honours scholarship researching benefits of irrigation in open public spaces.

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Heather Goodall, University of Technology, Sydney

Women, Race and Rivers in Western NSW

Rivers have been crucial places for economic and cultural life for both indigenous and non-indigenous Australians. Indigenous women's relations with rivers and water through their work as mothers, land users and political activists has been significantly different from those of men in each society. After the invasion, women's roles continued to reflect traditional purposes, but the conditions of colonization overlaid them with other dimensions. It has often been Indigenous women who have sustained the use of rivers for both fishing as nutritional resource and for teaching children about traditional cosmology and laws around water. This long history has allowed a significant accumulation among Indigenous women of knowledge about rivers on many levels, which might offer a resource for river planning, but women are often impeded from participation in environmental planning forums because of the highly adversarial and culturally unfamiliar settings of the current water negotiation arrangements.

Non-indigenous women were more constrained in their contact with rivers and their water, as the colonisers' technologies separated people from natural sources of water via wells and bores, pipes, storage tanks, pumps and [in a few areas] filtration systems. Yet their roles as mothers and family managers have often shaped their perception of rivers, as the dangers of drowning and later of chemical pollution have led some white women to become articulate advocates of river water reform. Their participation in river health forums has again been constrained, although to a lesser extent than that of indigenous women. But the overwhelmingly commercial dominance on river management forums in the northwestern areas of NSW, along with the adversarial nature of the forums and the continuing patriarchal culture of rural society has meant that white women have more often contributed to river health debates in oppositional, and marginal roles than as fully accepted participants in formal negotiations.

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Kate Harriden, The Australian National University

Wasted Resource? Perceptions of Stormwater and its Management in Two Locations in Australia and Thailand

This presentation draws on my ongoing research that investigates the influence different knowledge systems have on the values placed on natural resources, in this case stormwater. The research compares the values attached to stormwater generated through what can be broadly called the scientific ecological knowledge (SEK) system dominating the Australian policy landscape, and the local ecological knowledge (LEK) system that was, till very recently, pervasive in Chonburi, Thailand. By examining the commonalities and differences between SEK & LEK, this research challenges the 'waste product' tag given to stormwater within the SEK system. The complexity of the relationship between the two knowledge systems is addressed as the values attached to stormwater are considered across scales. While acknowledging nature, and natural resources, as socio-cultural construct(s), this research outlines how the SEK system came to regard stormwater as wastewater by applying ideas of (hyper) commodification,

increased technologicalization and genderization of water. Ethnographic methodological tools based on field interviews are used in the study presented here.

The significance of the research lies in its connection to important international debates in natural resource management and development circles, including the role of traditional/local knowledge, and its relationship with scientific-bureaucratic knowledge in natural resource management; and the role of hydrology in combining social, cultural and economic behaviours in hydrological models to help generate more equitable and effective policies.

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Gay Hawkins, University of New South Wales

From the Tap to the Bottle –the biopolitics and branding of bottled water

The phenomenal rise of bottled water represents significant changes in the way water is collected, distributed and drunk. Much of the recent growth has been in Asia and Australia, where the market has expanded by up to 500%. Consumption of bottled water is highest in countries that have access to safe drinking water, though levels are growing in countries that are rapidly modernising, and where water infrastructure is underdeveloped. Alongside the tap, and its provision of water as a cheap public good, has emerged the bottle: delivering branded water, at massive mark ups, to diverse and rapidly growing markets. This development indicates a complex new biopolitics of water. If water is the first necessity of life, and providing access to it one of the fundamental functions of the modern polity, the rise of the bottle signals important shifts in the technical delivery and cultural framings of water. These framings not only distinguish bottles from taps but also, often, promote them as better, safer and more convenient. The marketing of bottled water can involve anything from pseudo-scientific information about hydration, and water's role in sustaining health and vitality; to claims about its organic or 'natural' purity. Far from being just a food fad, the ubiquitous presence of plastic bottles on office desks, in tourist backpacks, in lecture theatres, and just about everywhere else, shows how drinking water is now caught up in new conducts and wider social changes from the rise of risk culture to the links between techniques of the self and mobility. Or as the ads like to say *'hydration on the go!'*

These changes in everyday conduct are evidence of the emergence of a distinct 'regime of living' in which mundane acts become subject to new norms, reasoning and material practices. This paper explores the distinct processes whereby consuming water has become implicated in new ethical regimes and conducts, and the ways in which plastic bottles have come to *mediate* the meanings, uses and governance of water. A central focus will be on the dynamics of branding. Specifically, bottled water's distinct appeals to 'nature' that attach new values to water often by fetishising its *source*. Mountain springs or remote island aquifers (cf. *Fiji Water* <http://www.fijiwater.com.au/>) are invoked to signify purity, and to disavow the industrial mediations of collecting, bottling and transporting. This fetishisation of source implicitly *devalues* tap water, rendering it both ordinary and suspect. Its purity cannot be guaranteed because its piped origins are anonymous; it hasn't been authored by nature. Branding shows how representations of 'nature' are crucial to the commodification of water, and to the linking of water to life and health. The biopolitical approach developed in this paper will extend existing analyses of branding in critical ways. It will investigate how the economic power of branding shapes understandings of nature as *both* a site of timeless purity and as essential to the vital character of living human beings. It will also investigate how consumers perceive branded water, how they apprehend the appeal of 'natural' water.

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Kirsten Henderson, La Trobe University

Water as the Medium of Cultural Traffic: Some Preliminary Thoughts

The vast body of literature about water management in Australia situates water within one or another of two competing contexts: the economic or the environmental. It is the tension between these two contexts that creates the politics of water today and the attempted responses to it by the Federal and State governments. But if, as Professor Peter Cullen of the Wentworth Group of Concerned Scientists has suggested 'debates over the directions of water policy are really debates about the sort of society and the sort of environment we want to live in', then we need to think about water in Australia in an alternative way. In this paper, I propose understanding water in Australia as being the medium of 'cultural traffic', a concept borrowed from the anthropologist Nicholas Thomas which refers to the idea that culture is constituted by the movement of ideas, values, beliefs and products between two or more destinations. Using examples from my own research I show how conceptualising water as the medium of cultural traffic helps us to understand water in terms of relationships rather than the frameworks that seek to reduce it to an abstraction such as a commodity or an environmental flow. This then allows for the recovery of the significance of water within Australian society and history. Upon recognising this significance, we can then develop innovative ways to choose the sort of society and environment that we want to live in.

Biography

Kirsten Henderson is a Ph.D candidate with the Sociology Program of the School of Social Sciences at La Trobe University. She lives and studies in Mildura, a rural city in northwest Victoria located on the banks of the River Murray. Hence, the focus of her thesis: 'The Politics of Water in Australia'. She holds a Bachelor of Science Hons. (1990) and Bachelor of Arts Hons. (2003) and has lived and worked in Japan, the USA, Canberra, Sydney, Melbourne and Hobart. Her academic interests include social theory, environmental history and politics.

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**Sue Jackson, CSIRO Sustainable Ecosystems
with Jon Altman, Joe Morrison and Michael Douglas**

Water and Indigenous people in north Australia: perspectives on an emerging research agenda

Interest in Indigenous use of and association with water has grown rapidly in the last ten years as a result of environmental pressures, developments in native title and the potential implications of national water reforms for Indigenous rights and interests. For the first time, national water policy explicitly recognises the special character of Indigenous interests in water, albeit with limited recognition of potential commercial benefits. Yet Indigenous people outside research and policy circles remain largely unaware of the substantial changes to water management and policy and their interests continue to be construed narrowly. A perception that northern Australia has abundant water supplies, sufficient to possibly meet the commercial and urban needs of southern Australia, has spurred renewed interest in the prospects for agricultural development underpinned by water resource developments and water trading. However, the consequences of such development for Indigenous livelihoods and customary resource management systems, including water rights, ethics and values, have received little attention.

This paper will provide an overview of the objectives and activities proposed by two new north Australian research and policy initiatives. These are the Tropical Rivers and Coastal Knowledge Research Hub (TRaCK) and the North Australian 'Indigenous

Water Policy Group', hosted by the North Australian Indigenous Land & Sea Management Alliance. These initiatives seek to improve the understanding of the effects of water policy reforms on Indigenous people, ensure the inclusion of Indigenous uses and values in water allocation and management, and empower Indigenous people to participate in water research, planning processes and policy development.

Biographies

Sue Jackson is a geographer with research interests in Indigenous natural resource management and water policy. Jon Altman is an economic anthropologist with interests in Indigenous economic development, policy and water rights. Joe Morrison's research interests are in Indigenous natural resource management and collaborative research methods. Michael Douglas is a wetland ecologist with research interests in aquatic invertebrates, environmental flows and Indigenous knowledge relating to river systems.

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Britt Jovanovski, University of Newcastle

Typology of Baths

This paper approaches a cultural understanding of water from a perspective of participation and experiencing through the architectural typology of baths. This typology has been an integral part of a diverse range of cultures for the last 5000 years. Though the form and significance, etiquette and siting change with cultural and technological shifts, temporally and cross-culturally the one essential element is water. This paper will discuss how this typology functioned in the past – what social and cultural significance was attached to it, and in turn to the place of water in our everyday lives.

Is it possible to re-vision this typology, manipulating it as a means to engendering a cultural shift towards a relationship of reciprocity, of the interconnectedness between ourselves, water, the built environment and nature?

Biography

Britt is in the first year of a Masters in Architecture at Newcastle University (supervisor – Michael Ostwald) Her research is based on the architectural typology of baths as a cross-cultural typology with a primary focus of water. What role has this typology played in the past, what does it reveal of changing attitudes and relationships to water (and by extension, the natural world), culturally and socially? Can we use such insights to re-evaluate our assumptions of the role of water and its place within our everyday lives, in our homes and built environment, to effect a cultural shift towards a renewed relationship with water. This is in contrast to our present methods of management, which utilise force, prohibition and bribery, where water is a resource disconnected visually and physically from place, and where communities are disempowered by lack of control on the way water is brought into and taken out of the home and the local environment.

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Damian Lucas, Department of Environment, Conservation and Climate Change (NSW)

With Danielle Flakelar-Carney, Department of Environment, Conservation and Climate Change (NSW)

Incorporating Aboriginal cultural values in water management, western NSW

Water holds important cultural values for Aboriginal people in western NSW. River flows are highly valued for animating wetlands and floodplains in this semi-arid environment – water literally brings to life important places, stories and living creatures (plants, fish and other animals).

However current water management gives little recognition of Aboriginal cultural values of water and wetlands. Water management has been designed for, and dominated by, the needs of extractive users. Indeed only recently have there been moves to incorporate biodiversity values in water management.

This paper will discuss these issues of cultural values and water by drawing upon a project being conducted by the Department of Environment and Conservation (NSW). The project is developing innovative ways of documenting and characterising Aboriginal values of water and wetlands. The project is also developing innovative strategies for incorporating cultural values in the technical domains of environmental planning and river management.

This paper will argue for the importance of recognising contemporary Aboriginal values in water, and the centrality oral history as a methodology. The paper will also argue for the importance of ‘mapping’ cultural values, literally representing cultural values on maps, as a strategy for communicating cultural values in a language recognisable to water managers.

Biographies

Damian Lucas an environmental historian with a particular interest in cultural values of water in rural Australia. He is the researcher on the Aboriginal Cultural Values of the Macquarie Marshes and Gwydir Wetlands project, which is a component of a broader NSW Wetlands Restoration Plan - a suite of projects including water efficiency, water buy-backs and improved wetland management. The Recovery Plan is innovative in that Aboriginal cultural values are being given significant focus and recognition, this marks a significant departure from the traditional focus primarily on ecological values of wetlands.

Danielle Flakelar-Carney is a Wailwan and Wakka Wakka woman and lives in Western NSW. Danielle has a background in adult education, delivering Indigenous land management programs throughout Western NSW. Danielle also has a strong interest in Aboriginal cultural revival, reconnecting people to country and recording family history. Danielle has a particular interest in the role of water in the Aboriginal cultural landscape.

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June Marks, Flinders University Adelaide

Social and cultural constructions of risk: the experience of water recycling

This presentation will discuss three main theoretical approaches to risk perceptions and demonstrate their utility in explaining public acceptance of water recycling. The examples given are drawn from case study research conducted in the USA and

Australia from 2000 to 2006, and quantitative data generated in the first national survey on Australian attitudes to using alternative sources of water. While the characteristics of risk, emphasised in the socio-psychological, realist approach appear to have some relevance (for example, the risk being natural rather than technological), social construction of risk theory is more helpful in working towards causal relationships. The risk society thesis of Beck (1992) and Giddens (1990) suggests that trust in technological innovation, such as recycling water from effluent, will be shaped through reflexive modernisation. Another branch of the social constructivist approach emphasises the cultural-symbolic context (Douglas 1966; 1984). This latter explanation assists in understanding survey results of public perceptions of risk and water recycling. For the case study level, however, Sztompka's (1999) trust-building analytical structure has been extended to embrace both the socio and cultural constructions of risk. This provides a comprehensive framework for analysing community reactions to drinking water sourced from effluent, and the experience of recycling water for other domestic, non-drinking uses. While these results identify ways to establish and maintain trust in alternative sources of water, further socio-cultural research into the institutions that promote or inhibit water recycling would move this work forward.

Biography

June Marks is a sociologist who has focussed on community engagement with water recycling and public acceptance of alternative options to traditional water supplies available through integrated water management. Current and recent projects include:

- Australian Research Council Linkage Project through Flinders University with industry partner United Water International Pty Ltd,
- a 2005 national survey established Australian data on acceptability of alternative water supply options.
- The experience of water recycling and the role of communication in building trust: surveys of three water recycling sites (July 2006) generated data for comparison with the national survey results and between the three schemes.
- Evaluation of the Virginia Pipeline Scheme to investigate growers' experience of recycling water for irrigating horticultural crops in the Northern Adelaide Plains (2004).
- PhD research (2000-2003): Australian and USA community experience and perceptions of water recycling.

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Janet McDonald, University of Southern Queensland

Redeeming "Poo"woomba: Using Visual Arts and Theatre to Enable Cultural Engagement along the Balonne

This paper discusses recent developments in a partnership between University of Southern Queensland's Creative Communities and the Queensland Murray Darling Committee (QMDC) in St George, Surat, and Dirranbandi which are all located along the Balonne River; an area discussed and debated vociferously in Murray-Darling catchment issues.

QMDC are chiefly an environmentalist group working to improve the promotion of natural resource management in the Maranoa-Balonne and Border Rivers catchments. QMDC first contacted USQ Visual Arts and Theatre in early 2005 to help them develop cultural pedagogies for engaging with their clients in regional and rural areas in order to promote better understanding of natural resource management. Using the work of Richard Florida (2005) and recent work on innovative communities by Ian Plowman, Ashkanasy, Gardner, and Letts (2005) this paper discusses how this kind of improbable partnership produced new "learnings" about how arts processes and products might affect how communities "read" their environment and how "city" artists/academics from Toowoomba ("Poo"woomba) might "read" water and metaphors in the Lower Balonne.

This research project recorded the stories of school-aged participants and their cultural attachments to their river between August and November 2006, which were used to create and curate an arts exhibition and theatre-in-education performance entitled *The Doctor and Nurse-Wursey's Most Amazing Hydrological Examination* which toured throughout the area from the 5-8 December 2006.

Biography

Dr. Janet McDonald received her Ph.D. majoring in Theatre for Youth from Arizona State University in 1999, where she was also awarded the 1998/99 Distinguished Graduate Teacher Assistant Award. She has been a high school Drama teacher since 1987 and is currently lecturing in Drama and Theatre Studies at the University of Southern Queensland, Toowoomba. Her current research interests include: regional youth theatres, developing strategies for sustaining theatre arts practice in regional towns, as well as her ongoing research into masculinities and actor-training at USQ.

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**Paul Mulley, University of Western Sydney
with Deborah Atkins**

Its not all technical, the process is just as important: A case study of the Sydney urban irrigation sector

Complex environmental issues require complex responses. Whilst technical input is important when considering environmental management, the capacity of the persons managing the situation, and the process of such management is just as important. The development of a process that enables easier decision making, monitoring and reporting is needed in the urban irrigation sector.

This paper discusses the processes associated with the *Sustainability Challenge: Urban Case Study* project. This project developed a reporting tool for the urban irrigation sector to enable those associated with this industry to monitor and report on social, economic and environmental aspects of their activities.

This project involved stakeholders from various local and state government organisations and the private irrigation sector in the Sydney basin. Whilst major focus was placed on the technical aspects, indicators and outcomes of the reporting tool it was realised that one of the important outcomes of the project was the development of a process that empowered decision making, cooperation and capacity building. The process also requires regular review to help with continuous improvement.

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Phillip O'Neill, University of Western Sydney

The shift to procurement: legacies from economic classifications of infrastructure

Infrastructure as an idea has shifted substantially. In the postwar, progress period, infrastructure was seen predominantly as a public good with universal characteristics requiring monopoly provision by the state. Water supply was a typical example and the physical structure of today's water supply infrastructure largely reflects this conception.

The perceived crisis in water supply has many sources: environmental, social, economic, technical, behavioural and so on. This paper focuses on the consequences for water supply of the shift in the role of the state in infrastructure supply since the postwar period. Key here is the shift towards a narrower (and qualitative different) state role: that of procurement. This sheds previous ownership, financing and management

configurations of water supply. The shift to procurement is outlined in general and implications for water supply possibilities are explored.

Biography

Phillip O'Neill is Professor and Founding Director of the Urban Research Centre at the University of Western Sydney. His research interests are broadly in economic geography with concentrations on hard economic infrastructure, corporate investment practices as they affect the city, urban labour markets, and urban and regional economic development policies and practices.

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Kim Satchell, Southern Cross University***Making eco-sense of water: Surf Culture, Cultural Studies and the Eco-humanities***

This paper uses auto-topographical fragments situated in the tension between Indigenous, Settler and Post-colonial narratives and histories. These fragments have resonance with an ecological imagination based upon theorising the connection between the embodied practice of everyday life and the poetics of reverie. These ideas are philosophically underpinned in a framework mapping an expanding environmental consciousness through such ideological positions as resource conservation, wilderness preservation and environmental ethics (each anthropocentric) towards the paradigmatic leap to an ecological sensibility (ecocentric). Inter alia the significance of water figures in material forms, as a cross-cultural and trans-generational communicative medium, as a lens for an ecological imagination and after Deborah Bird Rose's (2004) Invitation to the Eco-humanities (AHR online) as a poetics to multiply ecological readings of place. In an Australian context and specific to this paper, the spread of surf culture prior to and from the mid-twentieth century around the coastal fringe and more recently in the coastal development popularised as Sea Change, is indicative of the 'place' beach culture and more acutely water plays in the National Imaginary and the material everyday life of Australians-as such in need of a range of creative research agendas.

Biography

Kim Satchell has an academic interest in culture, space, place and ecology stems and the intersection of surf culture and community activism. Kim is currently teaching Cultural Studies in the School of Arts and Social Sciences Southern Cross University Coffs Harbour, and is an educator/trainer for the North Coast Institute of TAFE in the Community Services-Welfare section. Kim is a Postgraduate student with the Graduate Research College Southern Cross University Lismore in the Centre for Peace and Social Justice. A current project is 'Surfing Cultural Diversity: Women in the Waves' involve making a DVD about cultural diversity for the North Coast Institute of TAFE. The project follows a group of women (South African, Greek, Liberian, Sudanese, PNG, Aboriginal-Australian and Anglo-Australian) learning to surf at a local Coffs Harbour Surf School, while telling their back story, following their progress and highlighting their interaction, both in and out of the water.

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Elizabeth Shove, Lancaster University (UK)***The Dynamics and Hydraulics of Everyday Life***

In the UK and in other countries too, water industry managers and regulators work hard to produce a reliable supply of reliably standardised water good enough to drink. With this as their focus, it is no wonder that water is routinely viewed as a uniform commodity or that initiatives to reduce demand are designed and implemented with reference to average per capita consumption of this seemingly generic resource.

In this presentation I argue that such approaches obscure crucial differences between one end use and another and blot out relevant variations in water-related habits and conventions. In the home, in action and in use, water is better understood as an impressively flexible element implicated in the effective reproduction of a range of services (cleaning, gardening, showering etc.) each of which has its own distinctive dynamic.

I use research into recent responses to water shortages in the UK to illustrate these points and explore the practical and theoretical implications of focusing not on water but on the services and practices it makes possible.

Biography

Elizabeth Shove is a senior academic who since the early 1990s has been engaged in numerous funded research projects and consultancies on a variety of topics concerning relationships of users of resources to aspects of housing design, municipal infrastructures, and everyday cultural norms, household routines, and standards of “comfort, cleanliness and convenience” (the title of her 2003 monograph). Her international research activities include stints as visitor to the Lawrence Berkeley National Laboratory (US, 2001) and the National Consumer Research Council in Finland (2003), while recent funded projects include a grant under the ESRC Cultures of Consumption Programme and ‘The Sociology of Water’, a program of research and related workshops for the UK Water Industry Research Association that promoted a sociotechnical approach. Shove is author or co-author of a prodigious number of papers and reports and co-author of several books, the most recent being *Infrastructures of Consumption: Environmental Innovation in the Utility Industries* (2005) and *The Design of Everyday Life* (2007). She and her collaborators have developed a distinctive sociologically-grounded approach to consumption studies that draws lessons from cultural studies in relation to meaning, identity and everyday life, but has a stronger orientation towards practices of what she calls ‘inconspicuous consumption’ that entail value systems and shared social and infrastructural norms—dimensions ignored in the dominant environment- and consumer-centred approaches to resource demand

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Zoe Sofoulis, University of Western Sydney
with Carolyn Williams

From pushing atoms to growing networks: cultural and sociotechnical principles for water conservation

“Whereas the Atom represents clean simplicity, the Net channels the messy power of complexity.” (Kevin Kelly, *Out of Control: the new biology of machines*, 1995).

As water authorities become more concerned with managing water demand, the water user has become an increasingly important entity in water research and conservation programs. Dominant approaches to researching domestic water users usually rely on large scale quantitative (questionnaire) surveys in order to identify the psychological, attitudinal, socio-demographic and other factors that ‘drive’ and therefore predict the water use of individuals. The idea is to develop conservation campaigns to systematically target these ‘drivers’. Even more sophisticated variants of behavioural and social psychology approaches (such as theories of ‘reasoned action’ and ‘planned behaviour’) are limited by their traditional western conceptions of the water user as a rational and autonomous individual: no more than a social ‘atom’. Such approaches are systemically blind to the roles of ‘Big Water’ systems and existing technologies, as well as cultural norms, in shaping user expectations and water practices.

We promote instead an approach to research and conservation initiatives informed by cultural and socio-technical perspectives. Here, water use and water users are understood to be embedded in 'co-evolving' (Shove 2003) relations involving culture, technology and systems in which one can't change without the others. The strategy presented here focuses on 'meso-level' groups and networks (family, friendship and other affinity/identity groups; streets, neighbourhoods and local communities) and on changing the relationship between water users and water authorities, and their roles and responsibility. We outline Principles and Guidelines for Sustainability Programs to demonstrate the potential of applied cultural research to facilitate cultural innovations towards water sustainability, based around the idea of 'growing networks of water-savers'.

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Polladach Theerappapisit, University of Western Sydney

Transforming Mekong's Water Culture: Perceptions from the Ground

The rich and diverse traditional cultures of the Mekong River in Southeast Asia have been transforming from agricultural-based to trading and tourism economic activities. With increasing interest and activities from international infrastructure development projects such as the Asian Development Bank and multi-government agencies, local ethnic communities in the Mekong Region have suffered from a top-down pressure to change, both physically and culturally, for perceived short-term economic benefits. Lack of local participation in the planning process is a crucial issue to be addressed in achieving sustainable development outcomes. In a doctoral study conducted during 2000-2001, one of the research methods was to use a 'picture drawing' technique to project local perceptions of desirable future ethnic village development against what top-level policymakers have planned and implemented. Woman and children are the two major groups that at present have insufficient opportunity to be involved in deciding their own development outcomes, although both have clearly very strong cultural links to the Mekong's water culture. There is thus a need for further in-depth research to explore how women and children could be more involved in such a dynamic process of economic change in the sub-region.

Biography

Poll has worked with UWS as a lecturer since 2001. His background was in a wide range of practice over 10 years in architecture, landscaping, urban design and planning as well as real estate and project management. In 1998, three years after his Masters degree in Urban Planning, he worked as a planner for the ADB project on Mekong Tourism Planning. This work inspired him to develop his Ph.D. proposal to study in England and then at the University of Melbourne. After 8 years of ups and downs, his thesis is nearing completion and is now entitled: "Tourism Planning and Policy: Local Perspectives on Development and Participation – A Study of Ethnic Communities in Northern Thailand". During 2003 to the present, he has had published seven refereed papers in those research areas linking community-based cultural tourism planning and ethics in tourism development.

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Don Thomson, The Waterwatch Network (Tasmania)

Waterwatch: a practical example of a culturally-oriented strategy contributing to sustainability of catchments and water

Waterwatch is a community engagement and capacity building tool that has been operating across Australia since the early 1990's. Waterwatch has two entwined themes: 1) Participatory learning for sustainability, built around catchment health and water quality; and, 2) Community-based monitoring of water quality and aquatic habitats, providing valid community data of a known quality to assist natural resource managers in targeting their investments and monitoring the impacts of works on resource condition.

Waterwatch works with adults and students around local places of meaning to empower people with the capacity to assess and monitor the condition of their local waterways, equipping them with the ability to change their own practices and behaviour, and influence the practices of others.

This paper draws on case studies from around Australia to demonstrate how Waterwatch works in partnership with communities, governments, industries and NGOs to influence cultural perceptions and behaviours towards water and catchments. The paper outlines the 'program logic' of Waterwatch, and illustrates its impact through case studies. Waterwatch is currently developing a monitoring and evaluation framework and is keen to develop partnerships with the social science community to improve our mutual understanding of how interventions such as Waterwatch impact on cultures.

Biography

Dr Don Thomson's interests in the social dimensions of natural resource management (NRM) have been evolving through his experiences in agriculture, landscape architecture and NRM over the past 17 years. Don completed his PhD in rural sociology in 2001, identifying different 'styles' of farmer, their social construction and their participation in catchment management initiatives. Don established his own consulting firm in 2002 and has led a number of projects focusing on community engagement and capacity building for a range of federal and state government agencies, R&D corporations and catchment management authorities. He developed a 'Capacity Assessment Tool' for Land & Water Australia's Riparian Lands Program in 2003. Don commenced a 2-year contract as National Waterwatch Facilitator in June 2006.

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Cameron Tonkinwise, University of Technology, Sydney

Shared Laundering: Designing Sustainability in relation to Historical Habits

This small research project is taking up the claim that laundering via communal facilities (shared basement laundries in apartment complexes, or commercial laundrettes, whether DIY or full-service) is more water efficient (and energy and resource efficient) than laundering via privately owned washing machines (www.laundrywise.com). The efficiency gains (mitigated by transport impacts and mechanical rather than air drying of washing) come not only from the higher performance levels of commercial equipment in shared laundering facilities, but also the altered laundering habits associated with shared laundering facilities, namely bigger, less frequent loads (Behrendt et al, 2001). At its most basic level, the project is testing these claims.

On the assumption that shared laundering does afford water efficiency gains, particularly in higher density housing contexts of urban consolidation (at one point BASIX was proposing to award points to developers for inclusion of shared laundering

facilities), the project is also attempting to determine who is still using shared laundry facilities, and why. Initial indications are throwing up a complex of social phenomena (listed from least to most significant): longer term cost-benefit calculations; current financial situation (limiting capital expenditure on a private machine); current social circumstances (eg a relationship break-up leaving one party without a private machine); long-term gendered laundering habits (reproduced from mothers [eg Kaufman, 1998]), but also socio-technical path dependent habits [eg Rip & Kemp, 1998]; current work-life habits (eg being a traveller, but also being able to drop-off for bag-wash on the way to work); constraints of the dwelling (eg no room for a private machine [eg Behrendt et al, 2001]); time-budget calculations leading to the outsourcing of certain domestic tasks (eg Jalas, 2006).

As this has elaborated a picture of people's rationales and practices that is much more complicated than assumed by the 'rational man' model, but also the social change models being used in environmental education and consumer citizenship, the project is also elaborating a wider historical and cross-cultural sociology of laundering, supplementing Shove. In particular, noting the diverse and prolific attempts throughout the latter half of the nineteenth century to collectivise and industrialise domestic tasks as part of urbanisation (eg Hayden, 1981), makes apparent the ahistorical naivety of current 'product-service system' approaches (Jelsma & Knot, 2003). The project is also extending to examinations of wider practices of product-sharing (eg car-sharing, toy libraries), as compared to burgeoning web-enabled social-sharing economies (eg Benkler, 2004).

The project is concluding by attempting translate these more abstract accounts of laundering as a historical socio-technical practice into designs, both of products associated with laundering, but also of laundering services (Mager, 2005), particularly in communal rather than commercial settings, that could make more sustainable forms of laundering more comfortable and convenient.

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Kitty van Vuuren, University of Queensland

The role of the independent community press in the management of water

Over the past few years Australia has faced severe drought conditions, with the mass media urging residents to adopt efficient water use practices, as well as promoting technical solutions such as desalination plants, ground water extraction, and the construction of more dams. The management of water resources, however, is a politically charged issue that affects some local communities more than others. This paper presents the results of a content analysis of the community press, examining the discourse of water management at the local geographical level. The research has revealed a largely unnoticed proliferation of local independent community print media, ranging from weekly tabloids to monthly A4 newsletters, often produced by non-professionals, sometimes accompanied by a website, and typically distributed in small communities of around 1,000 residents. To date, Australian research has found that regional and local media tend to avoid publishing controversial issues, although they have an important community integration function. However, this research reveals that local voices are anything but silent, and often highly critical of government policies.

Biography

Dr Kitty van Vuuren is a University of Queensland Postdoctoral Fellow, at the Centre for Critical and Cultural Studies, University of Queensland, Brisbane, Australia. Her research interests are community media, democracy and the environment. www.cccs.uq.edu.au.

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Stephen Wearing, University of Technology, Sydney

Masculinity, Ethnicity and “Power Recreation” on the Georges River

The application of high energy petroleum-fuelled recreation craft on urban and rural rivers has created very different patterns of recreation among Australians than was the case 50 or even 30 years ago.

‘Power recreation’ is a new phenomenon which has substantial environmental impacts, such as massive bank erosion and pollution of river water from fuel leakages, exhaust and toxic craft coatings, quite apart from the disruption caused by noise pollution on and in the water and traffic congestion at boat launching sites. Yet perhaps its least observed effects have been to shift the gendered and racialised nature of river recreation. The class, racial and gendered dimensions of power water sport will be examined here with reference to the case study of the Georges River as it flows through the Georges River National Park around Picnic Point and Lugarno in south western Sydney. The craft used range from highly capitalized water skiing vessels, most often in the hands of Anglo or long established migrant families, to inexpensive jet skis, often owned by young men from newly immigrant communities, who are eager for both the thrills of high speed rides and the collective excitement involved in large groups of friends launching and taking turns with one or a small number of craft. Rising class, racial and gendered anxieties are often expressed in the language of environmental concerns.

Utilising interviews with members of the Arabic speaking, Vietnamese and Anglo communities, media debates and participant observation, this paper will review the key dimensions of this case study, which suggests a predominantly masculine culture that emphasises freedom, spontaneity, challenge, risk-taking and pleasure. We argue that this reflects some shifts in relations of power between men and women during outdoor recreational activities which have further impacts on the gender interactions among immigrant cultures and on intercultural relations in suburban areas. We suggest the implications for other urban sites of debate over power water recreation like the Penrith River and the Greater Western Sydney parklands.

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Jess Weir, Australian National University

Cultural flows: traditional owners talking water in the Murray Darling Basin

The ecological devastation of the Murray River and its tributaries has created a heightened awareness of different peoples interests in the rivers, and brought them into competing and aligning discourses. The traditional owners of this inland river country have mobilized their engagement in these water debates by forming an alliance called the Murray Lower Darling Rivers Indigenous Nations (MLDRIN). MLDRIN is representing the concerns of the traditional owners to water management bureaucracies. Within this intercultural dialogue, the MLDRIN delegates speak of a ‘cultural flow’, which is intended to translate their embedded relationship with the rivers.

This paper illustrates how the delegates speak about a cultural flow in a natural resource management framework which would otherwise separate nature and culture. The traditional owners seek more than being part of water debates, but to transform water management through the intercultural engagement. The difficulties encountered in this translation process reveal the different assumptions held about rivers. Moreover, the terms of this engagement are undeniable as the incorporated MLDRIN alliance moves from arguing for a cultural flow, to realising a cultural flow – through formally requesting a water allocation.

Biography

Jessica Weir is a PhD Candidate at the Centre for Resource and Environmental Studies at The Australian National University, and a Research Fellow in the Native Title Research Unit at the Australian Institute of Aboriginal and Torres Strait Islander Studies. Jessica is a human geographer whose research focuses on ecological and social issues in Australia, and previously in south and south-east Asia. Jessica's PhD thesis "Cultural flows: negotiating water with traditional owners from along the Murray River" is supported by a research agreement with MLDRIN. Jessica is co-author with Monica Morgan and Lisa Strelein of *Indigenous Rights to Water in the Murray Darling Basin: In Support of the Indigenous Final Report to the Living Murray Initiative* (2004) AIATSIS Research Discussion Paper, no 14. Jessica is also researching the challenges facing native title holder communities, and is working with Winda Mara on the "Gunditjmara Land Justice Story".

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Zoe Wilson, University of KwaZulu-Natal (South Africa)

Debates, Disconnections and Drowning: The politics of services and scarcities in post apartheid South Africa

This paper draws on extensive field research conducted over the last two years as part of a DFID funded project – Second Order Water Scarcity in Southern Africa. It synthesizes the work of the project team who conducted case studies around South Africa in a variety of settings. Results challenge the underlying socio-political and cultural assumptions informing many high profile debates around water services and scarcities in South Africa.

In brief, water institutions and management practices underwent fundamental transformation in the shift to post-apartheid democratic South Africa. Debates over who wins and who loses have been most heated around domestic water and sanitation services. At the national level, these often take on a totalizing tone, yet water and sanitation services take place (or fail) within highly variegated and fragmented political, social, and cultural milieus. Many of the political battling raging at the national level, such as anti-privatization or even Free Basic Water, are crafted in such a way as to speak primarily to the needs and experiences of a minority of largely urban South Africans who are capacitated (through language, network access, education) to project their cultural assumptions and political interests onto the national stage. Who wins and who loses, in this case, often boils down to which actors can seize centre stage, while the complexity of issues and needs – especially those of import to the rural poor - are drowned out.

In this light, the paper looks towards a new synthesis of evidence that can accommodate South Africa's complex socio-economic and cultural landscapes, as well as its diverse settlement patterns and hydrological features.

Mapping the hydropolitics of South Africa

This paper explores the use of 'situational', 'social world's' and 'positional' maps to illuminate the political implications of deeply held community beliefs - and contested beliefs - about water. The paper details the use of this methodological strategy in a recently completed 1.5 year long research project in South Africa. This approach served to highlight how very different socio-political settings fit together to form the hydropolitical landscape of South Africa, as well as indicating that highly differentiated settings need to be taken on their own terms. In some instances, more room for alternative technologies and management packages would benefit South Africa - and most likely Africa as a whole. This strategy helps to identify where and why communities are resistant to innovation in the sector.

Biography

Zoë Wilson holds a Ph.D. in political science from Dalhousie University, Canada, where she studied the relationship between global development aspirations and local implementation in Africa (case studies: Angola, Botswana, Namibia and Tanzania). She is currently completing a post-doctoral specialization in the Politics of Water at the University of KwaZulu Natal. Most recently, Zoë is conducting research into philosophical, religious and environmental attitudes towards potable reuse. Since late 2004, Zoë has also been leading the South Africa research of a DFID funded project on the politics of water scarcity in Southern Africa. She has supervised a team of students in this process and together three major case studies have been produced: Mseleni, Northern KwaZulu Natal and Grabouw, Western Cape, and Durban. Further project details are available at www.waterscarcity.org. Zoë is also completing a World Health Organization project on globalization and water and a key determinant of health (status: responding to peer review comments). Zoë has presented research findings at a number of international conferences, as well as attending a special course on ecosan in Norway August 2006. Zoë's first book: *The United Nations and Democracy in Africa* was published with Routledge (Oxford: New York) in October 2006.

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Mateusz Wolnicki, University of Western Sydney

A Narrative Approach To Dealing With Conflict Over Intended Water Use - Paroo River Case Study

The significance of the project is that it explores a collection of community narratives as a catalyst in understanding community values and dealing with conflict.

The inquiry looks at differing expectations and priorities about the role of the Paroo River in far western NSW. Individual and group values have become strongly linked to either pro or anti irrigation themes. Both sides are very well argued.

Our challenge was to avoid a pre-eminence within the community that is typical of a 'win' and 'lose' situation and develop an approach that would transcend such a dichotomy. Complexity theory (Wolfram, 2003; Kauffman, 1995) and Fuzzy Logic (Dimitrov, 2002) showed promise in this regard. This prompted us to develop a community owned narrative of the river.

Our role within the community was not one of resolving the conflict, but rather raising the standard of the conflict resolution process. This has led to the community working to publish its narrative, "Paroo River Life – A Journey of Faith, Flood and Dust."

A better understanding of values has had far reaching implications for this community. Some of these include resolve of community factions, increased awareness and also providing decision makers and planners with knowledge of local values.

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Sam Wong, University of Leeds (UK)

Researching public-private partnerships in water governance

This paper questions the neo-institutional perspective to conceptualising the public-private partnership in water provision and challenges the simplistic assumptions that effective water governance lies in getting institutions, incentives and authority right. Drawing upon the concept of 'practice of governance', this paper suggests that we need a new perspective on understanding public-private partnership in water management in three aspects: firstly, the use of water is both individually-pursued and socially-shaped. The design of the regulatory structure, without cohering with the cultural meaning of water, results in public resistance to resource conservation.

Secondly, over-institutionalised participation marginalises the voice of the domestic water-users. Thirdly, the strong desire for certainty and reliance on legislation also create disincentives for sustainability.

In addressing these limitations, this paper draws upon our research on water governance in England and Wales and calls for a re-organisation of the institutional arrangements to tackle power asymmetries between the regulators, water companies and the public. Fostering the dual identities of domestic water-users, as both consumers and citizens, enables them to exercise their economic power and political rights. Getting local authorities and regional development agencies more involved with the decision-making process also helps address the over-centralised governance systems by improving information flow between local, regional and national levels.

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Other accepted abstracts

Simone Blair, University of Melbourne.

The advent of Master Planned Communities (MPCs), signals a change of direction in the way that the Australian suburban environment is being conceived. In these places relationships between people and their environment are no longer being 'left to chance'. It is clear that 'fully planned' developments 'embody', through landscaping, a script that direct residents to conceptualise and interact with their environments in particular ways. These designs may be water intensive or water sparing. In many of these developments, water is foregrounded as a lifestyle choice, a choice that says something about the residents who live there and their understanding of their place in Australian society. The kinds of scripts – waterscapes and landscapes – that emerge in MPCs are a result of interactions between non-human agencies and the developer's and resident's own ideas about 'nature'. Thus, these landscapes can 'teach' residents how to value and meaningfully engage with particular landscapes, while at the same time, MPCs, through their lakes, streams and wetlands can potentially inform resident's everyday awareness of water cycles, water abundance and weather patterns. Through ethnographic research in different MPCs this project (commenced March 2007) seeks to explore how different suburban landscapes inform – if at all – resident's understandings of both their place in the water-cycle and the status of water in their surrounds.

Biography

I have recently completed my PhD dissertation through The School of Social and Environmental Enquiry at The University of Melbourne. My thesis entitled "Shooting a Net at *Gilly's Snag*: The movement of belonging among commercial fishermen at the Gippsland Lakes" was based on 15 months participant-observation fieldwork with commercial estuarine fishermen in Victoria's southeast. Here, I explored the changing nature of fishermen's social relationships, and their understandings of place, belonging and marine tenure in the context of rapid political and environmental change. Of particular relevance to my current research interests concerning water attitudes in suburban Melbourne was my socially and environmentally contextualised investigation of how commercial fishermen conceptualised their relationship to their environment, and in particular how they understood the lake's ecology, catchment dynamics and water-places.

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Kuntala Lahiri-Dutt, The Australian National University

'Feminine Waterscapes: Rivers and the Everyday Life in Rural Bengal'

This paper looks critically at the social production of rivers in rural Bengal, India, where communities are defined by the way they use the waters in the rivers, where water characterises humans as much as humans characterise land, transforming the physicality of land, livelihoods and patterns of life cycles into a cultural text through which one can reflect upon identity and society. Rivers are not only symbols but also physical manifestations of concepts that hold a central position within the cultural corpus of religious, social and everyday lives. In that, rivers are always present in the collective consciousness of Bengal as communities there have woven their lives around these streams of life.

Deltaic Bengal is a land built by rivers where the boundaries of water and land penetrate each other and merge with the feminine identities of the rivers. The river in the Delta is commonly seen as a potent symbol of feminine powers that are inherent in an unpredictable nature and carry the fecundating waters of life, perpetually changing and replenishing life, yet holding the ability of not only nurturing and sustaining but also

destroying. These representations are fleshed out in images in specific contexts whose particulars vary in details and traits. However, their common attribute is the feminine nature evoked in the images.

In this paper I problematise the imagined femininity of rivers in rural Bengal and, in an effort to contest the gender-neutral scholarship on the subject, look at the water-based lives through the lens of gender to critique the masculinist nature of the knowledge and cultural understandings of water.

In closely examining the metaphors of flowing rivers I point out to the daily realities of life for women in the riverine communities in Bengal delta. In this paper, I intend to show how these constructions reinforce masculine dominance within the communities. I argue that rivers, as part of the cultural landscapes created from the natural world and shaped by human societies are constituted by feminine symbolism and imageries in communities marked by inequalities where the real women are commonly acknowledged for deserving these attributes in the day to day lives.

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Emily Potter, University of Melbourne

Dancing in the Red Storm: Creative Research as a Response to Drought in the Murray Mallee

As discussed by other papers in this conference, the Murray Mallee in Victoria, leading to the Wimmera region of South Australia, is experiencing increasingly severe drought. In April 2007, a group of artists, musicians, dancers and writers will meet on the shores of the saline-ridden Lake Tyrrell, in the heart of Mallee country, to undertake a series of improvised collaborations and performances that will ultimately feed into a geographically diffused exhibition and a final performance in Federation Square, Melbourne. So what does this all have to do with drought in the Wimmera/Mallee? This paper will discuss this project – tentatively titled ‘Mallee’ – as an example of creative, performance-based research that offers innovative responses to social and environmental climates, generating in the process new forms of ecological citizenship. This is the art work not as a representation or interpretation of an outside milieu, but rather as a practice and mode of ‘material thinking’ (Carter 2004) that does things in a field of ecological relations. What this offers is a different strategy for water ethics (or living with water) between the usual modes (for the citizen, at least) of regulation and individual responsibility.

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Helen Sheil, Swinburne University, Melbourne

Water - a connecting link

That waterways are at the heart of community life became increasingly evident in Gippsland when facilitators interested in the future of rural communities met with community members in an open ended approach to community engagement. These facilitation skills and knowledge were accredited at post-graduate level by a major university in 2001 (Sheil 2000). Water was consistently a uniting feature within communities despite historical and often bitter divisions on other issues. While Save the Snowy River campaign (Miller 2005) in Orbost is possibly the most famous, a similar unifying response became evident in other rural and urban communities.

Local knowledge of the life of a river is learnt over time through intimate experiences of rivers renewing and challenging lives. It has a different language, quality and sense of responsibility to departmental approach of management of a commodified resource. Bridging the cultures of public management and community involvement is a current challenge. A challenge that countries Japan and Canada have begun to make by introducing water levies in urban areas that return funds to rural communities in

recognition of their stewardship role (<http://www.nysefc.org/tas/NYCwatershed.htm>) . Our community stories can educate that water can become a guiding story towards a unifying culture if they are given a public presence (Sheil, Smith 2006, Caling 2005).

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Gail Tipa, Researcher, New Zealand

Maori and Waterways: The Cultural Opportunity Assessment tool

This presentation describes a newly developed tool, a Cultural Opportunity Assessment, that enables Maori to identify, order, assess and address the issues, from a cultural perspective, that are associated with flow regimes of streams and rivers.

Many Maori (and indeed other indigenous communities) want it to be explicit how flow management decisions restore, enhance and protect their cultural association with waterways. However a means of effectively engaging with resource managers is required.

In this presentation we describe Cultural Opportunity Mapping and Cultural Opportunity Assessments that we have developed. Specifically, we will present

1. a framework for structuring a discussion of cultural values, understanding the depth and complexity of cultural relationships with aquatic ecosystems as a first step in developing initiatives that are grounded within a cultural domain.
2. a tool – the Cultural Opportunity Assessment – that has been developed to enable Maori to participate in the setting of flow regimes.
3. the results of Maori applying the tool, in catchments of traditional significance.

While the tool that is described is specific to Maori, the methods used to develop the tool will be of relevance to other cultures and indeed to social scientists seeking to integrate community values in freshwater management.

Biography

Gail Tipa: Gail (Ngai Tahu) is a member of Te Runanga Moeraki, whose traditional lands are found in North Otago, New Zealand. Gail has 16 years experience in resource management. The focus of much of her research has been freshwater issues within the South Island of New Zealand. A significant project over the last five years has been development of a Cultural Health Index for assessing the health of streams and rivers. She has prepared many Cultural Impact Assessments (CIA) on behalf of Ngai Tahu – most recently a CIA for a major hydro development project. She has led two projects over the last three years - on sub-contract to NIWA - to develop A) more responsive restoration strategies for aquatic ecosystems and B) methods for determining flow regimes for waterways that take account of cultural values and needs. The recently developed tool that is being trialled is a Cultural Opportunity Assessment. Gail joined the Geography Department of the University of Otago (as an Honorary Research Fellow) in 2004 after completing her PhD.

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Deirdre Wilcock

Integrating Cultural Mapping into NRM: Examining challenges to inclusive adaptive management

Current drought conditions in Australia highlight the challenges of environmentally and economically sustainable water management. Nowhere has this been more pronounced than in the Murray Darling Basin (MDB). Indigenous (in particular, Yorta Yorta) involvement in water resource river management in the MDB is often seen as a flagship project for Indigenous involvement in NRM in Australia. This paper reports on research undertaken with Yorta Yorta Nation Aboriginal Corporation (YYNAC) and NRM agencies involved in The Living Murray Indigenous Partnerships Project, and

negotiations between YYNAC and the Victorian State Government (through the Yorta Yorta Joint Body arrangement). These pathways of negotiation aim to involve Indigenous representatives into NRM in the Barmah Forest (one of the six Icon Sites of the Murray River) more effectively. However, this has been constrained by ontological differences between Indigenous and Western scientific understandings. This paper examines cultural mapping as an example of a culturally-oriented management strategy. Ontological differences pose great challenges to integrating diverse ways of thinking into NRM through cultural mapping. This research has found that understanding 'sense of place' and holistic (versus compartmentalised) thinking is crucial for the integration of these diverse knowledge bases, in order to promote flexible, responsive and effective adaptive management.

Biography

The abstract above reports on research conducted in 2006 as part of my Honours thesis at Macquarie University. Participants included Murray Darling Basin Commission managers, Yorta Yorta Nation Aboriginal Corporation, Murray and lower Darling Rivers Indigenous Nations (MLDRIN), the Department of Sustainability and Environment managers and Catchment Management Authority representatives involved in the management of Barmah Forest, Victoria. The project investigated the inclusion of multiple knowledges in adaptive river management – using Indigenous and geomorphological understandings as case studies. The research found that the exclusion of these valid and key areas of knowledge was undermining adaptive approaches to NRM in the Murray Darling Basin context.

I was fortunate enough to have the opportunity to continue with similar themes in funded PhD research through Macquarie University. I will be examining the involvement of Indigenous and geomorphic understandings into NRM in a project comparing Australian, Canadian and New Zealand contexts. In particular, the project will investigate the potential of geomorphology to be used as a non-reductionist field of science that can be used to integrate Indigenous and scientific knowledge more effectively for adaptive approaches to NRM.

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