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Charles Darwin University

## Asymmetries and Climate Futures

### Working with Waters in an Indigenous Australian Settlement

Spencer, Michaela; Danyi, Endre; Hayashi, Yasunori

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**Asymmetries and Climate Futures:  
Working with Waters in an Indigenous Australian Settlement**

Michaela Spencer  
Northern Institute, Charles Darwin University, Australia  
[michaela.spencer@cdu.edu.au](mailto:michaela.spencer@cdu.edu.au)

Endre Dányi (corresponding author)  
Faculty of Social Sciences, Bundeswehr University Munich  
[e.danyi@unibw.de](mailto:e.danyi@unibw.de)

Yasunori Hayashi  
College of Indigenous Futures, Arts and Society, Charles Darwin University, Australia  
[yasunori.hayashi@cdu.edu.au](mailto:yasunori.hayashi@cdu.edu.au)

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## **Abstract**

This paper focuses on a water management project in the remote Aboriginal community of Milingimbi, Northern Australia. Drawing on materials and experiences from two distinct stages of this project, we revisit a policy report and engage in ethnographic storytelling in order to highlight a series of sensing practices associated with water management. In the former, a working symmetry between Yolngu and Western water knowledges is actively sought through the practices of the project. However, in the latter, recurrent asymmetries in the research work continue to appear: a bilingual diagram of water usage is displayed, but produces confusion; measuring a waterhole for salinity, a member of the scientific team throws in a water meter while a Yolngu Elder prefers the telling of an ancestral story; a collaborative 3D mapping exercise invites participation from community members but struggles to develop an outcome that differs from existing maps used by scientists and government staff. Focusing on these moments as subtle points of rupture, we suggest that attending to “seeing,” “telling,” and “mapping” in both stages of this water management project offers a way to explore the political work of crafting climate futures and beginning to interrogate differing means for “doing difference” within them.

***Key words:*** climate futures, water management, Yolngu, Indigenous knowledge, sensing practices

## Introduction

The main paradox of the term “anthropocene” is that while it rightly associates global warming with human activities, it conceals the fact that it is not humanity in general, but mostly Western, modern, capitalist societies that are responsible for recent waves of environmental change (see Barry and Maslin 2016; Haraway 2016; Latour et al. 2018; Povinelli 2016; Tsing et al. 2017). This implies that for Western, modern, capitalist societies the question should not simply be *whether* there is a need to craft new climate futures (as in the debates leading up to the Paris Agreement and in current US government policies), but also *how* new climate futures can be crafted in a way that does not automatically reproduce (or strengthen) the conditions that have led to global warming in the first place. In the past ten-fifteen years, several anthropologists and Science and Technology Studies (STS) scholars have suggested that any answer to this question—if it wants to be taken seriously beyond a handful of Western locations—needs to begin with the recognition that “the world” affected by climate change is not a homogeneous, singular entity. Rather, to use the title of the latest addition to this small but growing literature, the world we are concerned with is “a world of many worlds” (de la Cadena and Blaser 2018).

Marisol de la Cadena and Mario Blaser’s edited collection elegantly combines two important insights. The first comes from recent debates in anthropology and can be summarized as follows: what global warming brings to the focus of attention is not the unprecedented transformation of a unified “nature” seen through the interpretative schemes of various of “cultures,” but the complex interplay among particular nature-culture configurations. Philippe Descola (2005), for example, has distinguished animism, totemism, naturalism and analogism as four such configurations, associating animism with South America, parts of North America

and Siberia, naturalism with Europe, totemism with Aboriginal Australia and analogism with China and parts of West Africa. As several contributors to de la Cadena and Blaser's volume convincingly argue, the task of anthropology is not to take naturalism as a default cosmology and examine how others compare to it, but to compare the different comparative schemes themselves. Eduardo Viveiros de Castro (2004) has called this method controlled equivocation (see also Bonelli and Vicherat-Mattar 2017).

The second insight comes from STS, more narrowly from Actor-Network Theory (ANT) and its successor projects (Law and Hassard 1999). It is based on the observation that scientific practices do not simply contribute to knowing the world; they also help to perform that world into being (Latour & Woolgar 1986; see also Law 2004). Sometimes such knowledge practices “add up” and generate a seemingly coherent reality, but other times—for instance, in medicine (Mol 2002), education (Verran 2001) and economics (Callon et al. 2007)—they connect only partially, creating differences that are concerned with *what is real* (ontology), rather than with *what is known about the real* (epistemology). In her work on the ways in which multiple Western biomedical practices enact a seemingly singular body, Annemarie Mol (1999) refers to the possibilities opened up through the articulation of such differences as “ontological politics.”

In *A World of Many Worlds*, Marisol de la Cadena and Mario Blaser give Mol's term a twist and propose “political ontology” as a means “to designate an imaginary for a politics of reality, and a field that stands where political economy and political ecology, formulated with ideas of nature and economic growth, are insufficient (at times even unable) to think antagonisms that, for example, involve things like mountains and forests that emerge as

resources through some practices but also as persons through other practices” (2018, 5; see also Blaser 2009). Political ontology, in other words, denotes politics across worlds that lack—or, more strongly, deny the necessity of—a common ground (Dányi and Spencer 2019).

This is an important move, because it makes it possible to inquire how radically different worlds relate to each other, and—if the conditions are not already prefigured—how they might relate to each other differently (Pickering 2015). One possible strategy that has emerged at the intersection of anthropology and STS is to treat such worlds *symmetrically*. As John Law pointed out in his 2015 Bernal lecture at the 4S conference in Denver, the concept of symmetry had played a central role in the development of STS and its re-reading of scientific knowledge production (Law and Lin 2017). The first principle of symmetry, associated with the Strong Programme, stipulated that in social scientific analyses of knowledge practices “true” and “false” beliefs are treated in a similar way (Barnes 1974; Bloor 1976), while the second principle of symmetry—an important pillar of ANT—demanded that human and nonhuman entities are attributed agency that is similar in kind (Callon 1986). Drawing on his own empirical work with Wen-yuan Lin on various encounters between Western biomedicine and Chinese Traditional Medicine in Taiwan, in his lecture Law suggested a third principle of symmetry, which would demand the use of both Western *and* non-Western concepts as analytical tools (see also the 2017 special issue of EASTS).

Indeed, symmetry or “symmetrization” (Viveiros de Castro and Goldman 2012) seems to be understood as an “ideal” political ontology, not only in academia, but also among practitioners (Spencer 2014). In Milingimbi, a small Aboriginal island settlement off the

coast of North-East Arnhem Land in northern Australia, decades of collaborative research work have grappled with questions of how freshwater flows should be managed. This work has drawn on Western knowledge practices to empirically study Milingimbi's hydrology, and engaged ancestral practices and songlines as means for knowing the origin, location and ownership of waters according to Yolngu law and customs. For scientists, water companies and government staff working at this interface, maintaining symmetrical relations between different Milingimbi waters often appears as an implicit good and a desirable way forward. However, when explored empirically, efforts to produce carefully crafted symmetries often appear unstable, and frequently break down.

Based on our ethnographic fieldwork in Milingimbi, in this paper we explore the conditions of political ontology by attending to the production of symmetry and different kinds of asymmetries that arise when world-making practices meet. Our particular interest is the means by which differing water worlds are being put in relation with each other in the crafting of climate futures. This implies a shift from looking exclusively at Indigenous knowledges of water, and a politics of how they may (ideally) relate to Western knowledges and practices, to how differences emerge and may be worked out on the ground.

The conditions of this meeting are visceral, embodied situations. Accounting for these situations whilst attempting to minimize the assumptions we bring to these comparisons, we adopt an approach similar to Cristóbal Bonelli's (2015) work on the role of vision in different healing traditions in southern Chile. We concentrate on "seeing," "telling" and "mapping" as specific sensing practices (Gabrys and Pritchard 2018), that is, practices that include, but are not reducible to the making and distribution of scientific knowledge. This helps us notice political ontology as a variety of situated moments where relations of difference become

articulable, whilst also recognizing that on the ground these relations remain in flux. We argue that political ontology happens not only in moments when worlds are being made visible, tellable and mappable to each other, but also—or even more so—in the movements from one sensing practice to the other, making it possible to distinguish differing asymmetries emerging in embodied collective practice.

### **Engaging with climate futures in the making**

In this paper, our main concern is with sensing practices associated with water management in northern Australia. A common thread within the literature on Aboriginal communities is an intimate connection between knowledges of water and traditional land ownership practices. Visiting Kowanyama, an Aboriginal community on the Cape York Peninsula in northern Australia, Veronica Strang (2005) writes about water as integral to collective senses of belonging and the maintenance of connections between Aboriginal groups. Similarly, Howard and Frances Morphy (2006) foreground close links between ancestral water stories and land ownership for Yolngu Aboriginal Australians in Blue Mud Bay, northern Australia. They suggest that complex webs of clan ownership, threaded through the intermingling of fresh and salt waters, are crucial to Yolngu processes of socialization and empowerment. Against the backdrop of controversial native title claims in the region, these relations often provide the key to legal recognition of land ownership and resource management. Working with the Anangu people in central Australia, however, Barry Judd (2019) points out that such understandings of water are gradually becoming devalued and marginalized in Aboriginal communities due to the pull of mainstream development, resource allocation and ways of life.



Questions over how water may be managed, by whom and in what ways also resonate strongly in Milingimbi. Elders remember a time when clan and family groups would periodically visit the island's waterholes as part of hunting or other expeditions, checking in on various important sites within their clan estates and retracing them in songlines. They also have many stories to tell about changes that have happened to these water holes as weeds and cane toads have arrived, of water levels changing and much of the population needing to move to the mainland in the 1970s.

Within the last decade, tensions over water management and use have intensified on the island, along with growth in population and development. Concerns over water scarcity and sea levels rising have also become a focus of attention for the utility company *Power and Water Corporation (PAWC)* who manages water quality and supplies for domestic use. Involving university researchers in these debates, *PAWC* has supported the development of a number of research projects. The latest involved various university researchers and brought us, the three paper authors, to Milingimbi Island. Yasunori was involved in this project as a translator-in-the-field and cross-cultural broker, supporting interactions between Yolngu knowledge authorities in Milingimbi and visiting scientists and water managers. Inviting Michaela and Endre to join him on the project, he was looking towards ways that ethnographic stories might be told, and means by which different knowledge and governance traditions could be involved and engaged in the work.

Drawing on our involvement in this project, we juxtapose two stages of a *PAWC* funded water research project. We focus initially on the first stage of this work, and its resulting research report (Christie et al. 2010). This report arose out of initial collaborations between researchers from Charles Darwin University (CDU), *PAWC* and local senior authorities. Becoming sensitized to the crafting of climate futures in Milingimbi through reading this

report, we attend to three distinct sensing practices—“seeing,” “telling” and “mapping”—to get a handle on some of the differences emerging as significant. We then move to consider a second iteration of project work. This current research, titled “Cross-cultural management of freshwater on resource-constrained islands,” is primarily funded by the Australian Research Council (ARC) and involves a team of scientists, largely hydrogeologists, as well as Yolngu rangers, Traditional Owners (TOs), experts in participatory decision making, representatives from the water utility company and several ethnographers associated with the Northern Institute at the CDU. In the final section of the paper, we discuss how the two iterations of the Milingimbi Water project relate to each other, highlighting not only a multiplicity of water realities, but also the conditions or modalities of “doing” this multiplicity on the ground.

## **1. Milingimbi Water Research Report – 2010**

In 2009, *PAWC* approached the Yolngu Aboriginal Consultancy Initiative at Charles Darwin University to propose a collaborative project to examine and improve engagement with the Milingimbi community over issues of water management. At the time, there was a sense of impending crisis surrounding water management and use in Milingimbi. Many involved in the project, not least *PAWC*, felt that there were two particular threats to water supplies: climate change and development. The first was rather diffuse, with global warming emerging as a pressing concern, but with no specific scenarios or sea level rises discussed. The second seemed more imminent and concerned a proposal from the Northern Territory government to build 50 more houses on the island. With the increase in population permitted by such development, there seemed to be a real possibility of overtaxing water supplies and impacts being felt by residents in their daily life (Christie et al. 2010, 3).

As a means for engaging with these issues, the Milingimbi Water research project was initiated, and at the time sought to develop appropriate forms of community engagement around resource management. Early stages involved considerable discussion and consultation around the way the project should be run, and it was decided that two sides of the water story should be told: the Yolngu side and the Western (or Balanda—white or non-indigenous people, derived from the Macassan word “Hollander”) side. There was great significance placed upon this symmetrical approach, though at the same time it was clear that telling these stories would involve quite different sets of processes, and quite different storytellers. Nonetheless, both were relevant to questions of how water should be managed and governed in Milingimbi, and needed to be included in the research project.

### ***Seeing: Water information posters***

Discussions around water management, which involved both Yolngu and Balanda, and which included both Yolngu ancestral knowledge and *PAWC* expertise, were new in Milingimbi. To assist the collaborative work, three large posters were developed. The intention was that these posters would be displayed in the community for everyone to see and used in school as resources for children to learn about Milingimbi’s water (or by *PAWC*, as they sought to educate community members about appropriate levels and forms of water use in the homes).

The poster presenting Yolngu water was called “Milingimbi Gapu” (Milingimbi Water) and drew on a number of old photos, maps, and short testimonials from Elders to present a particular display. There were images from the Mission days in Milingimbi (around the 1930s), which showed old people preparing food in traditional ways, using water to wash the poison out of cycad nuts and drawing water from the well. Also included was a map of lands and clan estates, showing land ownership as it relates to water flows, as well as quotes from Elders talking about Milingimbi water, in their own language, with English translations.

It was important to “look back” and show these traditional practices of water use. It was also important to recognize the importance of current Elders as the appropriate authorities guiding ways of knowing and caring for water today. Small photos of a number of Elders appeared on the poster, alongside statements they provided during the project (Figure 1). These statements were presented first in Yolngu language and then in English, reminding young people and teaching Balanda about what water is for the Yolngu and how it should be cared for.

Raypiny ngarkula mala ringgitj, ringgitjthirr ngali nguli bitjan burrwurrun, wiripu ngali li ga giritjirr.

*We have sacred fresh water, which we call for when we are mourning, and which we also dance (Lily Roy).*

Yaka nganya dhu warku'yun, bili ngayi gurrutumirr. Ga yaka nganya dhu djaangdhirr gapu, bitjan djalkthun bawalamirr, warku'yun nganya.

*We must not mistreat water, because water is our kin. We won't throw it about or treat it disrespectfully (Yingiya Mark Guyula).*

*Figure 1: Milingimbi Gapu Poster*

([http://www.cdu.edu.au/centres/yaci/projects\\_milingimbiwater.html](http://www.cdu.edu.au/centres/yaci/projects_milingimbiwater.html))

*Figure 2: Milingimbi Water Poster*

([http://www.cdu.edu.au/centres/yaci/projects\\_milingimbiwater.html](http://www.cdu.edu.au/centres/yaci/projects_milingimbiwater.html))

A second poster, depicting Milingimbi Water as it is known by *PAWC* displays a rather different set of images and quotes (Figure 2). There is a large picture of Milingimbi's water table shown as a cross-sectional diagram of different layers of rock, within which the freshwater aquifer is embedded and from which the community draws its water. Also included are pictures of the water tower, which holds a supply of water available for everyday use, measurements of quantities of water used by the community, and a list of various organizations recognized as stakeholders in the management of Milingimbi's water, including several government departments and the local council.

On this poster there are small photos of *PAWC* staff (plumbers, water quality officers, community liaison workers, etc.) accompanied by short statements explaining their role on the island and how they are involved in caring for Milingimbi's water.

I often visit Milingimbi and talk to community members about how it is important to take care of the water at Milingimbi so it will last into the future (Kylie, Community Engagement Officer).

I provide electrical support for the water and sewer assets to ensure reliable water supply and reliable operation of sewer systems in your community (Paul, Field Officer Water and Sewerage).

Finally, a third poster offers yet another visual display. The heading on this poster is "Milingimbi water conservation—Djaaka gapuw ngamathang—Care properly for our water." This poster is unlike the other two in that it does not show either a Yolngu or Balanda story, but rather a "working together" narrative. This draws some images from the other two posters

and also develops new ones specifically for display here. These include a picture of people in their house using taps and washing machines, an image of gardening and irrigation and a map of the different camps (suburbs) where people live and use water in Milingimbi. There are also a number of photos of the research project itself; these show *PAWC* staff speaking with Yolngu school children about water management, and university researchers working with Yolngu elders and water managers during the project consultations.

Photos and statements by Elders also appear here. This time the statements are presented only in English, and they provide suggestions about ways in which Yolngu and Balanda might work together to manage Milingimbi's water.

There should be respect, and a sound knowledge of how the Yolngu system works and how the Balanda system works. Balanda need to come in and have some sort of awareness of where we can both understand each other. When people are working on the ground in a Yolngu community, we also need to understand where they come from (Yingiya Mark Guyula).

We need to find someone to talk from every different camp, Bush camp, Top camp, Army camp, Garden camp, Bottom camp, we need a Yolngu to look after it (Lily Roy).

More than reminding the young people, or educating Balanda about Yolngu water, these statements were suggestions for ways to go forward together in managing Milingimbi's water more collaboratively than previously.

***Telling: Yolngu and Balanda water stories***

In addition to the development of these posters, a significant aspect of the research consultations involved eliciting and recording “water stories” from Yolngu elders and *PAWC* staff. The intention was that these stories, like the posters, also permit different ways of knowing and caring for water in the project consultations. Part of their significance was in the act of their telling, but they are also included in the body of the research report, as well as in an appendix where different water stories appear next to photos of the speakers/storytellers. It is carefully noted that the Yolngu water story must necessarily be told in two parts: one for each of the two different moieties—*Dhuwa* and *Yirritja*—that structure Yolngu life and which relate to each other as people do; as mother and child, or grandmother and grandchild (Christie et al. 2010, 13).

The *Yirritja* story appears first and brings into focus particular aspects of land ownership in Milingimbi. Where the township stands on Milingimbi Island is *Yirritja* land. This means that the water in the township, as well as the water at the top of the island, is *Yirritja* water. When the mission was first established in Milingimbi in the first half of the twentieth century, it was established around a freshwater source, now called the Macassan well. This well belongs to *Yirritja* people, and it was created by a totemic snake, the harmless water python with a yellow belly. This well used to be looked after by the *Ngurruwulu* people of the *Walamangu* tribe, and then its care was taken over by the by the Gamal branch of the same tribe (Christie et al. 2010, 14).

Other areas of the island are *Dhuwa*. These places hold *Dhuwa* water, and are associated with their own, quite different, creation stories (Christie et al. 2010, 13). A senior woman, Jessie Murarrgirarrgi, told one of the water stories belonging to the *Dhuwa* traditional owners of Milingimbi—the Gamalangga, Gorryindi and Maalarra. The story was about the wallaby, the gecko and the bush cockroach, and how some of Milingimbi’s waterholes came to be fresh

while others salty. The bush cockroach, the wallaby and the gecko were planning a ceremony. The cockroach and the gecko did not know that the wallaby had hidden some paperbark containers full of fresh water. They organized to paint each other for the ceremony. The cockroach did a great job painting the gecko. Then the cockroach said, “It’s my turn,” but when the gecko painted him, he just splotched a couple of red patches on his shell. The cockroach got up and looked at his reflection in the water. “What a mess you made, painting me up!” He got really angry and ran around urinating in all the fresh water, making it salty. Fortunately, the wallaby was careful with water. He looked after it carefully. He had some fresh water hidden that he could put into small pools under a pandanus tree and in other places. Jessie suggested the question for Yolngu was how they were going to look after the water, and keep it safe, like the wallaby (Christie et al. 2010, 13).

Somewhat differently, the *PAWC* story of Milingimbi’s water was told in the project through a series of workshops, where elders and school children accompanied *PAWC* staff to relevant sites across the island. Part of this story was to do with history, and the role of the missionaries who arrived in Milingimbi in the 1920s and started looking for water, building wells and drilling bores. Another important part of this story was the current water management system, which is maintained by *PAWC* staff, and which involves a current system of tanks and bores that allows the “essential services officer” to increase the supply of water if there is an influx of people arriving for a ceremony or a festival, and to decrease it again when they leave. This allows him to keep the water chlorinated and clean (Christie et al. 2010, 17).

In discussion, it was recognized that part of this water story was also about ways that faults were identified and repairs to broken infrastructure were made. This included a system of management, which meant people were not allowed repair their own taps but had to fill out a



job card and get a plumber to visit the house and make any necessary repairs. This *PAWC* story was not one that was well-known either by the Elders or by young people, and so hearing it was a new experience.

***Mapping: Representation from the five camps***

Associated with the Yolngu poster and story of water was a 1976 map of Milingimbi Island. The map, as it was reproduced in the report, was quite brown and weathered, giving the appearance of being older than it was. It showed the particular ancestral estates of different clan groups living on Milingimbi Island. There were no solid boundary lines drawn between areas, but the names—*Walamangu*, *Batjimurrungu*, *Gamalanga* and *Gurriyindi*—were drawn in large letters across sites, seen as being owned and cared for by these particular clan groups (Christie et al. 2010, 13).

The map has no details of the township area, or of any of the key pieces of water infrastructure associated with supply to housing and other premises in the community, and it was not drawn on to support a shared, working-together, water story. However, another map, which appears on the third Milingimbi Water poster, did become significant in a proposal about how Yolngu and Balanda water could be cared for on Milingimbi Island. That map shows the area of the township and has been shaded across particular “camp” areas. These areas do not correspond to land-areas of clan ownership but are sites within Milingimbi where certain clusters of people from particular clan groups now live. Relating to this map was a particular suggestion for shared governance related to clan group representation in *PAWC* activities:

The consensus in the interviews was that people will take more notice of water and housing issues if their elders are properly consulted and use their authority to make it

happen. A camp-based approach has to do with acknowledging these authorities. Particular clan groups and extended families at Milingimbi have been living in the same camp or “suburb” for several generations. Within each of these camps there are strong governance networks. These traditional governance structures can be seen working every day at the camp level, so we weren’t surprised to hear the suggestion of the camp-level governance arrangements (Christie et al. 2010, 17).

It was this particular map that was included on the poster showing ways in which Yolngu and Balanda may work together in managing and caring for Milingimbi water; and it was through this map that calls for a “camp-based” approach of working together, both Yolngu and Balanda, were supported.

### **Interlude: Working water symmetries**

Re-reading this report through the lens of sensing practices brings means of doing difference into the foreground. In presenting posters about “Milingimbi Gapu” and “Milingimbi Water,” two sets of materials were displayed side-by-side, contrasting and connecting with each other. Not unlike “totemism” and “naturalism” in Philippe Descola’s scheme, this juxtaposition produced a working symmetry between different waters as a basis for being able to work with them together carefully and well. This move was reproduced again through the telling of water stories, and yet again through the camp maps, which came along with a particular form of shared water governance proposed by some Yolngu involved in the project.

Reading this activity as an effort undertaken in the here-and-now of crafting climate futures, preparations for climate and sea level changes that were still to come focused upon this dual

presentation of different practices of knowing and caring for Milingimbi's water. Similar to John Law and Wen-yuan Lin's effort to generate symmetry between Chinese traditional medicine and Western biomedicine, this presentation was not easy to achieve, and required a considerable amount of conceptual work on the part of the participants, as well as many hours of travel, recording, translation, transcription and graphic design on the part of the university researchers.

In many ways, this initial research work was conceived of as preparatory; an effort to make visible differing water stories that might otherwise be neglected, seeing this not only as an act of recompense for past wrongs, but also material preparation for collaborative efforts needed to face changing climate and sea levels. This phase of the project ended with the completion of the Milingimbi Water research report and a handing over of images, stories and other resources to those who might continue this water management work beyond the life of the project. Research activities were only renewed several years later as *PAWC* initiated new work to verify available water supplies on the island. In the next section, we juxtapose the project report with this next phase of research work, once again focusing on situations of "seeing," "telling" and "mapping" as to explore political ontology in the crafting of climate futures.

## **2. Milingimbi Water Research Project – 2017**

Several years after the completion of the first Milingimbi Water report, the three of us were in Milingimbi, caught up in a second iteration of research work. As we already mentioned, Yasunori was facilitating interactions between Yolngu Traditional Owners, Rangers, Elders

and scientists (hydrogeologists) from several different universities as part of a project on water management on “resource constrained islands,” and Michaela and Endre had been invited to become involved as ethnographers participating in the project.

We sat in the first meeting of the Yolngu ranger group and the hydrogeologists, listening to the unfolding discussion. As with the early stages of the first Milingimbi Water research, there was a sense of concern associated both with climate change and development on the island. But in this case these concerns were framed somewhat differently. The scientists in the room were very clear that global warming had already produced significant changes in water availability in Milingimbi. While the precise effects of this threat still remained unclear, there was a strong assertion on the part of the Western scientists that the “world has changed.” In relation to development pressure, and a push to build more houses, the situation had also shifted. Previously there was a concern that government plans to build new houses would stress water quality and availability. But now Milingimbi was experiencing a complete ban on building works. A halt had been called to all building on the island until greater clarity around water tables levels and replenishment rates. This decision was in itself presenting a problem for many Yolngu families, who were experiencing overcrowding in their homes and hoping for relief in the form of new houses and other building works.

Stepping aside from the completed project report, we begin telling ethnographic stories of this next research phase. Stories which, once again, focus on “seeing,” “telling” and “mapping” as an entry point into ways in which different worlds are coming together, and interrelating or being kept apart, in the doing of Milingimbi water research.

*Seeing: A new water information poster*

Placed out the front of Milingimbi airport is a poster with the heading “Where does your drinking water come from?” The airport in Milingimbi is a busy place. Travelling by air is the main way that people move on and off the island, and it is common for families to spend many hours sitting in the small shelter next to the tarmac, waiting to see someone off, or to welcome them home. This poster was intentionally set up here, so that Yolngu arriving and leaving might have the chance to learn more about Milingimbi’s water.

The making of this particular poster was funded by *PAWC*, and carefully designed by a number of parties who contributed language, scientific and graphic skills to its making. The poster offers a visual depiction of Milingimbi’s water table at different times of year. There is a strong similarity to the diagram presented on the *PAWC* poster during the first Milingimbi Water project, inasmuch as this shows a cross-section of the island, layers of rock and the position of the aquifer. The purpose of the poster is to increase residents’ sensitivity to the issue of water management in Milingimbi, and to show water as a potentially finite resource. Accompanying the two cross-sectional diagrams of the water table during the wet and dry seasons, there are also a few suggestions regarding ways in which the Yolngu can minimize their usage, by turning off taps and hoses when finished using them or using hoses or sprinklers for a short time only.

*Figure 3: Information Poster, displayed at Milingimbi Airport*

This poster aligned with another water management project, “Dharray Manymakung Pawaw Ga Gapu/ Manymak Energy Efficiency Project,” which also focused on water management practices as an initiative alongside scientific research work. Yolngu translators working for an external agency were engaged to help translate the English poster text into one of the

Yolngu languages commonly spoken in Milingimbi, so that both English and Yolngu versions would be visible to residents as they waited at the airport and looked at the poster. The placement and distribution of the poster was also carefully considered, with the display at the airport being accompanied by a delivery of the poster to all households. Yolngu consultants were employed by *PAWC* to accompany the staff on these poster drop-offs, so that they could explain to Milingimbi residents what the poster said, the issues about water scarcity and management it was trying to raise, and that the Yolngu in Milingimbi would be able to hear this message in their own language, and from people they knew and trusted.

As an accompaniment to other community engagement activities and scientific research work around water availability in Milingimbi, this poster was well received. As part of a process of public engagement and consultation seeking to raise awareness around water use, it provided a clear articulation of changes in the water flow between wet and dry seasons, and simple practices for managing household water use. At the same time, the poster seemed to create confusion for some Yolngu who read it. In paying attention to subtle tensions in collaborative water work, it is this confusion which is of particular interest to us here and which we seek to explore further.

Considering again the image shown on the poster, we can see a schematic version of Milingimbi's water. It shows a cross section of Milingimbi Island, and its freshwater water flows. On the left side of the poster, the images of wet season rains are accompanied by a rising water table, while on the right side images of dry season drought are accompanied by a falling water table and less available flows. However, Yolngu in Milingimbi are familiar with a six-season water cycle, rather than just two, and water that flows through songlines rather than the water cycle. Furthermore, the depiction of the relationship between freshwater and saltwater flows seemed to be the cause of some perplexity. There is a prominent Yolngu story

about *Gapu Gularri* (Gularri Water) that talks about fresh water flowing under the sea and coming up on the other side. This story connects certain areas as traced through ancestral songlines to which the relationship of freshwater to saltwater is highly significant (Buthimang, 2008). But in the poster, both sides show a layer of freshwater suspended above the brackish and the salty water below.

Scientifically, this makes sense as a pictorial version of Milingimbi groundwater: the size of the molecules makes freshwater lighter than saltwater. However, in relation to the production of a visual presentation of Milingimbi Water, the arrangements of Yolngu and Balanda knowledge are configured rather strangely. While Yolngu language is used alongside English, both sides of the poster—regardless of which language is being used—show a Balanda image of groundwater in the wet and the dry seasons. And it is perhaps attending to this prioritization of water as one particular form that can explain both the positive, as well as some of the confusing reactions to the poster. The translation of English into Yolngu language was done carefully and works well. However, without any interrelation of *Yirritja* and *Dhuwa* waters, only one “water” maintains itself as present within the water management message.

### ***Telling: By the billabong***

The poster pre-dated the arrival of many of the scientists working on the water project but has remained part of an extended program run by *PAWC* supporting water management and conservation by engaging with practices of water use. The conservation of water through sustainable use is a key aspect of *PAWC*'s management strategy. Accompanying this community level water conservation is the research being carried out by visiting hydrogeologists, with a strong focus on monitoring, measuring and predicting levels of freshwater within the underground aquifer.

To facilitate this work, Yasunori arranged a series of meetings and site visits, enabling the scientists to scope out places where they could set up instrumentation to measure meteorological, hydrological and ecological variables (e.g. groundwater levels, rainfall, temperature, humidity, soil moisture and sap flow), while also enabling Yolngu elders to tell and share stories of water, significant to the places being visited. For the scientific team, measuring these variables was important to understand the dynamics of the groundwater system on the island and the seasonal response of the freshwater lens between the wet and dry seasons, which is the only source of water for the community. Other important outcomes from the scientific monitoring were to investigate the risk of saltwater intrusion to the freshwater aquifer and where groundwater discharge was occurring on the island and the interactions with the tidal creeks and billabongs.

The meetings and site visits Yasunori organized also enabled Yolngu Traditional Owners and their custodians to re-tell the stories of ancestral creation through which waterholes were created. The importance of maintaining certain narrative accounts of water, which were so clearly present in the past project, was again present here as Yolngu TOs involved in the project offered introduction and welcome to waterholes and other significant areas; telling water stories suitable for these places and the people who belonged to them.

One of the visits led to a waterhole/billabong, *Nilatjirriwa*, a few kilometres out of town and off the main road. It is a large waterhole that runs along the side of the airport and is a popular place for Yolngu to fish and gather materials for weaving. When we all turned up and bundled out of 4WDs and troopies, there was a big crowd that gathered on the bank of the waterhole (see Figures 4 and 5).



*Figures 4 and 5: By the billabong (photos taken by the authors)*

One of the Traditional Owners, who travelled with the group, started telling the story of the creation of the billabong and the water of this place. This TO had come specially so that the story of the water for this place could be told, and he was one of the few people who could do so. This was not simply a matter of courtesy. Visitors, especially those of us who came to Yolngu country for the first time, needed to be acknowledged by the billabong, so this custodian's intention was to show how Yolngu know and care for the water, and introduce the scientists to the billabong by telling the stories how it was made, how it is used, and who looks after it.

After this story had been told, one of the scientists got out his salinity meter and dropped one end of it in the water. The other end contained a digital display, which after a few minutes produced some numbers about the amount of salt in the water in the billabong. While the story told by the TO had referred to fresh and salt water flows onto and away from the island, the scientists needed to use another form of measurement: a meter which could detect salinity levels and provide a readable output on a screen.

While the scientists and the TOs talked about water and explained—in quite different terms—means of knowing what water is and how it may be mapped out as parts of other broader sets of relations, two different waters were becoming present. These waters were emergent in the practices of measurement and story-telling as exemplified by particular and relevant authorities standing at the billabong. However, these waters did not really interact with each other. At the billabong, there was not an assumption of a singular world mapped and visualized as a water table and spoken about in different languages. There were certainly still

different languages being used, but the waters, and the worlds of which they spoke, were also different. Without any need to pin down or connect these differences, in the talk by the billabong the possibility of different realities could be easily sustained, but there was also no moment of formalization, working together or symmetrical relation which emerged.

The stories that were going to arise out of the setting up of new scientific infrastructure and data collection processes at this point remained unclear. These stories would not be known until the data were collected and analyzed. The Yolngu TOs, on the other hand, were able to re-tell (and in part re-make and maintain) their water stories standing by the billabong as the right people specified through clan and kinship relations had always been able to do, participating in the ancestral creation in the process of re-telling its stories. While we stood there together by the water, these stories seemed to diverge, and the claim that “the world has changed” became rather obscured and unclear.

### ***Mapping: Working in 3D***

A few months after the hydrogeologists’ visit, a university researcher arrived at Milingimbi. This new visitor was a public participation expert who initiated a 3D mapping project of the island. The method had been developed in the Philippines, and the idea was that this mapping exercise would produce a tactile representation of Milingimbi water, and support collaboration between scientists and community members.

Under a shelter in the shade, the Yolngu came and worked with the university researcher to make this three-dimensional map out of pieces of cardboard and cornflour available at a local store. However, a few weeks of careful consultation led to rather dissatisfying results. The map produced looked much like a bumpy version of a Western street directory. While people had fun making it, it quickly got pushed into a corner of the room and forgotten for a

significant part of the project. It was only some time later that Yasunori came back to Milingimbi and found the map, fishing it out and displaying it on a large table that could be walked around and pointed to by scientists, TOs, rangers and others (see Figures 6 & 7).

*Figures 6 and 7:*

Michael Mungula (Gupapuyngu clan), Yasunori and Warrick (Milingimbi and Outstations Progress Resource Association manager)  
(photos taken by the authors)

When it was first built, the 3D map was an unfamiliar object, seemingly replicating the spatial and visual arrangements of Western water flows. It differed from the maps produced in the first Milingimbi Water project in that it was a large 3D object able to be walked around as it was talked about. However, it did not include details of Milingimbi's different "camps" as places from which representatives participating in this water work might be drawn.

As time went on, Yasunori pulled out the map again, and began to work with the TOs. Moving between both the 3D map and various water sites where stories of the songlines could be remembered and told, TOs began to become comfortable and familiar with the object of the map, and the possibility of telling stories both on country—and when standing next to this other version—of country. In connecting with the map, the TOs stories about the stingray that had been chased away from one of the billabongs by the serpent had both an ancestral and a newly found cartographic dimension.

Read as an innovation, shifting and altering practices of keeping separate and interrelating Yolngu and Western waters, the involvements of maps and stories begin to hint at an

emerging form of interrelation: a means of spatializing, which does not prioritize representative leadership, but which works through the recognized involvement of stories and their tellers as participants in place, and the doing of both Western and ancestral waters in the crafting of climate futures. This moment of engagement and novelty around the map was, however, quite fragile and potentially short-lived. Only with the TOs and Yasunori coming together with the 3D-map were stories of country and Balanda water flows able to be brought to life and negotiated together. While the map was supposed to be able to travel to other parts of the island and provoke similar engagements elsewhere, there seemed to be little appetite for this work shown by many of the project participants.

### **Conclusion: Working water asymmetries**

In this paper, we have juxtaposed two iterations of project work. The first iteration involved sets of workshops and site visits eliciting different Milingimbi water stories. As part of this work, Yolngu Elders and TOs recounted *Yirritja* and *Dhuwa* water stories and provided guidance around how both ancestral and historical practices of Yolngu water management could be shown to others. Similarly, *PAWC* employees told their stories of the water infrastructure in Milingimbi, and how they maintained systems of pipes, taps and storage tanks allowing domestic water in houses and a reliable supply for development works and general community use. In describing this research phase, we have drawn heavily on the completed project report (Christie et al. 2010) and the online resources produced as outcomes of the project.

The second iteration of this research involved a range of different practices including community education work, collaborative scientific research, negotiations over governance

practices and participatory planning activities. All of these made up aspects of a collaborative research project involving Elders, TOs, hydrogeologists, Indigenous rangers, social scientists and *PAWC* staff, variously looking for ways to continue caring for Milingimbi's water as development pressure grows and the climate changes. In presenting this phase of the research, we have offered a series of ethnographic stories—or brief vignettes—of being present on the ground, in the midst of the unfolding work.

We have focused on the sensing practices of “seeing,” “telling” and “mapping” when describing both phases of research work, the purpose of which was to create a modest but explicit comparability across the two iterations. By doing so, we have also foregrounded implicit political ontologies present in the crafting of climate futures and interrogated different means for “doing difference” within them. Within the project report and the posters, a symmetrical relation between different Milingimbi water stories appeared reasonably easy to maintain. However, when shifting to unfolding practices on the ground, these symmetries serially broke down, or were altered and interrupted as differences across and within ways of doing Milingimbi water work became viscerally apparent. Paying attention to these embodied practices has led us to query “symmetry” as a default, or self-evidently desirable, mode for accounting for differences within and across worlds. While the airport poster attempted to visually present differing waters together on one surface, the intense difficulty of doing this appropriately and well was revealed when the images and translated texts created confusion amongst the Yolngu. When both scientists and TOs gathered at the billabong to tell relevant stories by the water's edge, lines of ancestral creation told by the Elders came to presence, while the significance of salinity measurements and their connection to changing climates remained difficult to discern. Somewhat unlike these two instances, the 3D map enabled several modes of sensing practices to become present at once. Differing waters could be seen, told and arranged; through multiple modes this mapping work seemed, at least momentarily,

to achieve something that the others could not. The cartographic visualization of Milingimbi Island could display well enough the infrastructure of bores, tanks and aquifers to support the stories of *PAWC* staff and hydrogeologists, while—when moving from being on-country to telling stories by the map—TOs could continue to reiterate ancestral water stories with enough integrity to ensure their continued involvement in the conversations and negotiations. The sensing practices emerging within the practices of making and using the 3D map seemed permissive enough to allow modest connections and separations emerge between ways of doing water that were radically different, but could still productively interrelate under specific conditions.

Through the juxtaposition of the two stages of the project, it is not only a multiplicity of water realities that has been revealed; the conditions or modalities of doing this multiplicity have also become apparent. The first phase of the research culminating in the report and the posters offered crucial sensitization to difference, but “brought back to earth” they struggled to offer guidance around how such difference might be done carefully and productively *in practice*. In the account we have offered, when the concept of symmetry figured as the assumed desired outcome of a meeting of differing worlds, it became clear that it was also going to be accompanied by an obscuring of practices that appear in other modes, sensory forms and sets of relations. However, when these conditions of meeting were themselves permissive of multiplicity, brief connections and important separations in the here-and-now of embodied situations became possible.

We began this paper with the claim that for Western, modern, capitalist societies the question should not simply be *whether* there is a need to craft new climate futures, but also *how* new climate futures may be crafted in ways that do not simply replicate the problems and

conditions which have lead us to global warming in the first place. While symmetry or “symmetrization” seems to present a particular “ideal” political ontology, through the artificial juxtaposition of different worlds it runs the risk of losing the contingency that appears in the real-time enactment of practices on the ground. Our paper has offered an attempt to explore lived conditions of political ontology by proposing a shift of attention from symmetry to various asymmetries that arise in situations where differing world-making practices meet and may meet in better and worse ways. Following this line, the potential for climate futures that do not simply repeat the mistakes of the past, we argue, may reside as much (if not more) in the permissiveness of multiple sensory modes as it does in the symmetrization of knowledge practices.

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## **Biographies**

Michaela Spencer is Postdoctoral Fellow at the Northern Institute at Charles Darwin University in Australia. She is involved in ethnographic and policy-design research, which draws on STS sensitivities and frequently involves collaborative work with Indigenous Elders and knowledge authorities, as well as government and non-government organizations.

Endre Dányi is Guest Professor for the Sociology of Globalisation at the Bundeswehr University in Munich, Germany. He is also research affiliate at the Department of Sociology at the Goethe University in Frankfurt am Main, Germany, and University Fellow at the Northern Institute at the Charles Darwin University in Darwin, Australia. His ethnographic research traces politics across worlds—geographically, practically and metaphysically.

Yasunori Hayashi is Coordinator of the Yolngu Studies program at the Northern Institute at Charles Darwin University in Australia. In his research and project work he focuses on ways in which Yolngu knowledge authorities of East Arnhem Land share their languages and more-than-culture.