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The Academy of the Social Sciences in Australia was established in 1971. Previously, some of the functions were carried out through the Social Science Research Council of Australia, established in 1942. Elected to the Academy for distinguished contributions to the social sciences, the 466 Fellows of the Academy offer expertise in the fields of *accounting, anthropology, demography, economics, economic history, education, geography, history, law, linguistics, philosophy, political science, psychology, social medicine, sociology and statistics.*

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- to foster excellence in research and to subsidise the publication of studies in the social sciences;
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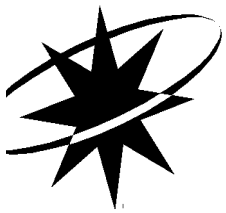

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President's Report

A tribute to Peter Karmel

The Academy mourns the recent death of Peter Karmel, our former president, a champion of the social sciences and an educationalist of remarkable insight and consequence. There have been few Australian economists who have exercised such a sustained influence on public policy, going back to his membership of the Vernon Committee of Economic Enquiry in the early 1960s. Appointed professor of economics at Adelaide while still in his twenties, he quickly displayed a capacity for leadership. As Principal Designate and later Vice-Chancellor of Flinders University, he initiated a bold experiment in teaching and research, and his subsequent leadership of the Australian National University from 1982 to 1987 provided strong and prescient direction of its activities.

Between those two periods as a vice-chancellor Peter Karmel recast national education. In 1973 he devised the needs-based system of Commonwealth funding for schools, fulfilling the Whitlam government's promise that all young Australians should have the opportunity to fulfil their promise. And from 1971 he chaired the Australian Universities Commission, established following the Martin Committee's review of tertiary education in the 1960s on which he also served. In this role he guided the rapid expansion of Commonwealth support for universities, which lasted until 1975 — when the government froze expenditure and suspended the triennial arrangements that enabled universities to plan with confidence. Thereafter the universities were at a standstill. Despite his best endeavours, funding remained constant in real terms up to and beyond 1982, when he departed from the Tertiary Education Commission.

The reports of the Commission during this period provided an acute analysis of the problems. With no capacity to make new appointments and provision for building works cut to the bone, universities were unable to move into new fields or even respond to changes in demand between existing ones. Piecemeal replacement of retiring staff prevented any infusion of new blood, and salary costs rose with the age profile of the incumbents. Larger class sizes affected the quality of teaching and heavier workloads sapped morale. The universities were faced with difficult choices that strained their collegial methods of decision-making, especially as the government required the Commission to operate with guidelines that hampered its effectiveness.

Throughout the 1980s there were repeated calls to improve participation rates, increase levels of skill and productivity. Report after report noted that Australia lagged behind other OECD countries in its investment in research and development; that its continuing dependence on a narrow range of commodity exports left it trailing behind competitors in the new information industries. The neglect continued until the late 1980s when John Dawkins broke the impasse with his Unified National System of higher education and enlarged Australian Research Council. With these came a new emphasis on national objectives, new methods of management, accountability and control.

Peter Karmel was an active member of the Academy and its precursor, the Social Sciences Research Council, from his election in 1952. It was at his instigation, for example, that the Academy embarked on a study of youth unemployment in 1976 as the recession began to eliminate so many of the jobs that school-leavers had been

able to find in the long boom. He assumed the Academy presidency at the end of 1987, the very moment when John Dawkins released his Green Paper, *Higher Education: a Discussion Paper*, and in the following year the new directions were confirmed in the *White Paper, Higher Education: A Policy Statement*. Shortly afterwards, Peter Karmel used the Academy's newsletter to reflect on its implications.

He acknowledged the imperatives. The Australian economy suffered from a deterioration in its terms of trade, a serious imbalance in its balance of payments — it was in 1986 that Paul Keating had declared that without an improvement in trade performance, Australia would become a banana republic. There was a need, Karmel agreed, to widen access to higher education and increase the number of graduates with appropriate qualifications, at a time of budgetary constraints on public funding.

His concern was with the 'highly instrumental view of education' and the 'managerialist view' of their government. The abolition of the Tertiary Education Commission meant that universities dealt with minister and his department on a contractual basis, the amalgamations creating unwieldy new universities, their swollen administrations imposing a linear management that strained collegial values. He worried also that the academic mission, that he characterised as 'the conservation, transmission and extension of knowledge' was at risk. It disturbed him that these far-reaching changes were implemented so rapidly and with so little evidence for the propositions that determined them.

Stasis

I was reminded of his observations by the directions the government has signalled recently for higher education and research. Last year I wrote about the series of reviews the Labor government set in train following its accession to office. The need for these reviews was indisputable. The Unified National System established in the late 1980s had long since lost whatever unity it possessed. An undifferentiated set of arrangements inhibited a creative response to the inadequacies of provision. HECS was attended with tight controls that failed to meet the full cost of tuition. Some universities were able to supplement their income with domestic fees; others kept themselves afloat with international enrolments, but all of them were caught in a growth trap that increased staff-student ratios and strained facilities.

The failure of the Coalition government over the past decade to increase public provision was reminiscent of the late 1970s and early 1980s, except that this was a period of growth and prosperity. The terms of trade had turned in our favour, commodity exports brought an unprecedented upsurge in public revenue — and higher education became by far the largest exporter of services. But Australia once again lagged behind competitors in its higher education participation rate and shortages of expertise — in science, medicine, education — were again apparent.

The need to reconsider research policy was equally apparent. Here too the failure of policy was clearly apparent. A proliferation of funding agencies and one-off initiatives responded to sectional interests at the expense of any coherent national strategy, while the formula for distributing research funds to universities was singularly insensitive to the practices and needs of different disciplines.

ASTEC was joined by the Prime Minister's Science Council, which in turn expanded into the Science and Engineering Council and then the Science, Engineering and Innovation Council. Research priorities were promulgated, industry partnerships exhorted, but the innovation performance remained poor. When a group of overseas examiners came to Australia's in 1985, it was struck by the narrow and instrumental understanding of science and technology policy it encountered, the extraordinary share

of funds direct to medical research and the blind faith of Treasury and the Department of Finance that knowledge was 'simply another input' that could be left to the operation of the market. Would they have said differently twenty years later?

Dawkins redux?

By cruel irony, the major reviews were undertaken just as the global recession struck. The government's stimulus measures have consumed the fiscal surplus, reducing the capacity for substantial public investment on which the current government's 'education revolution' was premised. While the government is funding some major new university buildings as part of a works program, its principal device has been cash payments to consumers. Meanwhile the Department of Finance continues to seek economies in public agencies, including cultural institutions such as the National Library, Museum and Archives that support research in the humanities and social sciences. At its annual general meeting last year the Academy passed a resolution expressing concern that cuts to the Australian Bureau of Statistics have compromised the quality of its workforce surveys. The response to the letter I sent to relevant ministers was not encouraging.

We now have the Bradley and Cutler reports, and we have some indication of how the government intends to proceed. The Minister for Education, Employment and Workplace Relations has affirmed the goal of increasing school retention and university participation: the goal is that by 2025 forty per cent of all Australians in the 25-34 age group will have a degree. She has endorsed the renewed emphasis on equity.

She also accepted the recommendation of the review that student demand should determine provision: the government funding for a Commonwealth-supported place will follow the students to the institution and course in which they enrol. We are yet to see how this will work. If the funding attached to a Commonwealth-supported place falls short of the cost of tuition, it is unlikely that universities will rush into recruitment. But if it does, then the implications for the social sciences are profound.

Similarly, if the Bradley report's recommendation for differentiating universities according to their research performance is accepted, then there would be significant implications for social science disciplines in those universities that would be restricted to a teaching role. Ever since Dawkins, it has been taken as axiomatic that research must be concentrated and selective. Whenever arguments are produced to justify the axiom, they point to the high overhead cost of laboratories, support staff and facilities, arguments that have little to do with methods and patterns of social science research, and fail to consider the distinctive relationship between teaching and research in many of these disciplines.

So far the Minister of Innovation, Industry, Science and Research has yet to make clear his view of this recommendation. We do know that the assessment of research performance, Excellence in Research for Australia, will guide his discussion of 'compacts' with the universities. We also have his announcement of an intention that public funding should cover the full cost of research, and this is particularly welcome.

Meanwhile the first 'trial' round of ERA proceeds. It is to be based on a number of indicators. Indicators of quality will include the quality of the 'outlet', citation analysis and grant income. Indicators of volume will be the number of publications and research income, adjusted for the size of the research group. Indicators of application will be based on commercialisation and uptake.

The guiding principle of ERA is for a common methodology to allow comparison, but it was recognised from the outset that many of these indicators do not fit well with

research activity in the non-laboratory disciplines. One of the first discipline 'clusters' to undergo the trial is Humanities and Creative Arts, which includes a number of the disciplines represented in our Academy, notably history, law, linguistics and philosophy. Their patterns of non-journal publication are not amenable to citation analysis; the ranking of their journals has limited validity and proved in any case to be fraught with difficulty. They do not conform to the indicators of application. The same applies to some other social science disciplines that will be assessed subsequently

For this reason the Australian Research Council developed some additional measures. One of them is 'peer review', an abstraction that means reading and evaluating a sample of the publications. Another was a set of 'esteem factors' such as membership of editorial boards, contributions to prestigious works of reference and membership of an Academy.

Earlier this year the Minister decided that the trial round would not use the esteem factors. He did so in response from complaints from universities that it would be difficult to assemble such information at short notice. This was surprising: such is the regimen of accountability that it is difficult to imagine any university has not requested and received information about the achievements of its distinguished researchers.

Along with Ian Donaldson, the president of the Academy of the Humanities, I wrote to the minister expressing our disappointment and concern that the esteem factors will not be used this year. We did so for several reasons. First, it will dismay and discourage academics in some fields, notably the performing and creative arts, who felt that esteem would provide some recognition of their patterns of activity.

Second, the absence of this component could have damaging consequences for university decisions. In the light of the first, 'trial' assessment, they will be making decisions about where to direct their support to maximise outcomes in the next, 'real' assessment. This will have such major consequences for their standing and future support, but the information they use will be incomplete.

Third, if esteem factors are not to be considered, then adequate assessment of quality in many of the humanities and social sciences will depend on peer assessment. The present intention is for a limited consideration of some of the nominated publications, which are to be no more than twenty per cent of the total. The restricted size of the assessment panel and the restricted budget with which the ARC has to conduct ERA makes it difficult to do more, yet without esteem factors more will be necessary.

Such is the state of play as I write this report, and I hope that by the time *Dialogue* appears, these concerns will be resolved. The Minister has been particularly mindful of the importance of the humanities and social sciences, notable in his determination to incorporate them in every aspect of research policy.

We appreciate that all the more at a time when the language of higher education policy is placing increasing emphasis on a narrow range of national objectives. Bradley's terms of reference highlighted the contribution 'to innovation and productivity gains' and the production of 'professionals for both national and local labour market needs'. Its recommendation for a new regulatory agency, a natural corollary of the extension of the market in educational services, is a far cry from the generous and facilitative role once played by the Universities Commission.

There is more than a suspicion of the instrumental view of education that exercised Peter Karmel, along the managerial approach he deplored. We run the risk of losing sight of the distinctive character of the university and its distinctive mission, the conservation, transmission and extension of knowledge.

Stuart Macintyre

'Australia's' Oceans?

The Oceans Around Us: Borders and sustenance

Charlotte Epstein

A vast reservoir of resources; that space which connects us to the rest of the world; that which bounds us as a sovereign country; a space to be both exploited and protected : the oceans around us hold so many, sometimes contradictory meanings in the Australian political geographic imaginary. Perhaps, on some level, this has something to do with the sway that water holds over the human mind that French philosopher Gaston Bachelard sought to explore in his 1942 Essay, *Water and Dreams: Essay on the Imagination of Matter*. Perhaps also, waters are always involved in creational myths, whether in the Bible, the Koran, or, more indigenous to this land, that of the rainbow serpent. Or perhaps it has something more specific to do with being located in the 'New World', invariably founded by an act of crossing perilous and unknown oceans, whether on the back of whale, as in one of the Maori myths, or on board the *Mayflower*, or as a member of Cook's crew in 1770.

But there is something even more idiosyncratic about Australia's relationship to its surrounding waters, that strikes newcomers to these shores, such as myself, and that is the extent to which Australia has *remained* outward-turned. In the United States, the development of the nation was tied to turning inward and to the gradual shifting of the Western frontier under the impulse of the railway, cattle and oil industries. While no such divide cuts across the land here, a glance at a map of Australia reveals human settlements still hugging the shores and something of an imaginary line shadowing its coastline. Every major Australian city is also a port. Moreover, grappling with the oceans features as an important dimension of the everyday life of this nation of seafarers and swimmers. The country's record in water sports - which alone persistently upholds Australia's outstanding ranking alongside countries with five or ten times its population - at Olympic gatherings, seems only to confirm the significance of the oceans to the Australian psyche.

In this essay I seek to unravel various strands of our relationship to these waters in order to explore some of the ways in which the oceans around us have centrally shaped the political geography of modern Australia. I begin by considering the dual nature of the oceans as a space to be simultaneously exploited and protected. The oceans sustain us; both directly, through the resources they yield to the Australian economy, and indirectly, as the medium to be traversed by the bounty of earthly resources we carry out to the rest of the world. We want, as a result, to both exploit and protect them - therein lies our fundamental ambivalence. The oceans also mark the limits of the Australian land. In the second part of the essay I thus consider the political nature of the oceans as borders and the ways in which the themes of sovereignty, territoriality and property play out in this relationship to the oceans. Finally, as the markers of the borders around us, the oceans feature as a space to be protected for the purpose of protecting us. In the last part of the essay I consider the oceans as a security space and raise questions around what exactly is being secured.

I examine how Australia is being constructed by being constituted as an object of protection to be defended against an external 'them'.

The oceans as productive and connecting spaces

We see the oceans around us as that immense space offered to exploitation, both directly, as a vast reservoir of resources in its own right, and indirectly, as that which connects us to the rest of the world, thereby enabling further exploitation of the resources that lie inland. These twin perceptions are not new; historically the oceans have always been central to the integration of the Antipodes into the global capitalist system and thus to the rise of modern Australia. In the heyday of whaling in the 18th and early 19th century, when whales constituted a key oil resource for the world, the bountiful waters of Australia (and New Zealand) became a key attraction for British, American and, to a lesser extent, French whalers competing with one another for the whales of the world and, by the same token, to assert their naval supremacy over its waterways. Some of these whaling ships became themselves vehicles of colonisation at this precise historical juncture – the birth of modern capitalism – when state and capitalist interests became ever more deeply entwined. Indeed two of Phillip's own fleet, the *Lady Penrhyn* and the *Prince of Wales*, were whalers subcontracted by the British Crown in 1786 as 'privateers' to carry its first load of convicts to Australia.[1] These whaling ships offer a prism reflecting these two facets of our enduring perceptions of the oceans-as-sustenance, that is, both as a connecting space and as a productive space. I consider each of these in turn.

In a sense the growing importance of the oceans around us simply mirrors the expansion of the capitalist system within which modern Australia took shape, first as the Empire's farmland and granary and then as a key provider of primary resources in the world economy. To put it succinctly, a globalising world is a world that trades ever more and where the waterways and ports of the globe are strategic sites of economic activity. To gauge the scale of the acceleration of the flows of commodities across the oceans, according to the World Trade Organization, the volume of world trade increased steadily by 8.5 per cent annually over the first half of the decade (until 2007), and exports expanded at a rate 2.7 per cent faster than the real Gross Domestic Product.[2] Moreover, these flows of goods are particularly important to an outward-facing island economy that has developed mainly around the export of its primary resources and the import of manufactured goods. The cars, the household and consumer wares that we import all need to cross those oceans; as do the outward-bound coal, wheat, lamb and minerals. In sum, the movements that have shaped the Australian economy centrally revolve around the oceans.

In this globalising world, these oceans do not merely connect us the rest of the world; they yield key resources to the economy. Food exports, for one, constitute a pillar of Australia's place in global trade: in food exports, Australia ranks as the world's eighth largest exporter; against an overall ranking of twenty-seventh exporting economy in the world. Moreover the value of food exports has more than doubled over the last two decades, from US$7,937 million in 1990 to US$17,574 million in 2007.[3] Amongst all types of food production, Australian fisheries, for their part, constitute the fifth largest industry, contributing A$2.2 billion to the economy annually.[4] The nine million square kilometres expanse of Australian fisheries – the third largest in the world – thus constitute a productive space indeed.

To plunder or to protect?

Alongside this imperative to produce, our relationship to the oceans has also more recently been shaped by the creeping realisation that the resources they contain may

not be endlessly available to human exploitation – that their availability in fact depends on the way we go about exploiting, or indeed, conserving them. This paradigm shift took root in the late 1960s and early 1970s, a decisive period when Western societies first encountered the earth's limits (an experience that took many forms, from feeling the effects of the first oil shortages, to those of excessive urbanisation, to reacting to the development of nuclear weapons). As a result the way we relate today to our natural resources at large, and to the oceans more specifically, is underwritten by a tension between these two enduring and sometimes incompatible paradigms that I call the exploitation paradigm and the preservation paradigm.

This tension in turn raises interesting questions about how we, as a society, come to make choices about which resources are to be exploited and which protected; and whether these are in fact the right choices with regard to the imperative to protect diminishing resources. Here again whaling offers an interesting prism. It presents the most radical case of a complete turn-about where the very same resource, in but a few years, went from being perceived as a key strategic resource, vital to the economy and natural security interests, to being a magical, intelligent creature that must be saved from (foreign) whalers. In my recent book, *The Power of Words in International Relations: Birth of an Anti-Whaling Discourse*, I document both the centrality of whaling to Western economies and the curious amnesia that has crystallised around it by which we actively forget the extent of our contribution to the plundering of whale stocks, blaming all the harder those that continue to whale. One needs to conjure up images of pipes, piano keys, cigarette holders, earrings, brooches, lipsticks, creams, candles, soaps, perfumes, umbrellas, corsets, etc to gauge the extent to which whale parts were ubiquitous throughout our economies in the first half of the 20th century. Australia, for its part, was one of the last Western whaling nations to staunchly defend the state's right to whale, hosting the 1978 meeting of the International Whaling Commission in those terms. In one of the fastest turns-about in the history of whaling, in fewer than two years Australia had become the flagship anti-whaling country, having passed in 1980 the first law that place whales beyond the remit of exploitation.[5]

Whale oil has captured the attention of resource economists as the perfect example of a Hubbart's curve and the only type of energy resource off which we have weaned ourselves entirely, underlining the human ability to adapt to a changing environment. [6] For my part, however, I have found, much less optimistically, that our shift in attitude towards the whales had little to do with an adaptive response to the actual state of the resource and what is required to preserve it. Otherwise we would have heeded the calls from the scientists to curb our destructive activities that were being voiced as early as the 1930s, when the Blue whale was first found to be endangered. Yet we readily ignored these calls for another four decades. Similarly, if the state of the resource was what we had our eyes upon, when making choices about which resources to exploit and which to protect, then the current recovery of certain whale populations, such as humpbacks, would have us tone down our opposition to the possibility of some controlled, sustainable whaling. This highly protective posture we adopt vis-à-vis the whales invariably raises questions as to why we cannot seem to muster such levels of concern towards all the other oceanic resources under duress as a result of our exploitative excesses (various shark species, for example) – or why indeed we cannot seem to come to terms with the need to ask hard questions about the exploitative paradigm itself, and the infinite growth model upon which it is premised.

If adapting to our degrading environment is what we are seeking to do – and given the state of our oceans, there is no doubt that we must – then that is exactly what we

should be doing, rather than deflecting the broader issue onto the protection of one chosen resource that *we* no longer rely upon economically. With regard to the whales, what I found was that this stalwart opposition to whaling is owed essentially to a political phenomenon; the perpetuation of an anti-whaling discourse that feeds upon itself, increasingly disconnected from the actual state of the resource. In other words, the choices we make about which resources to protect say much more about us – our point scoring and blame shifting – than about the conservation requirements of the resource in question.

Sovereignty, territory, property

The oceans are also of course, quite simply, what surround us, marking the outer limits of what constitutes properly 'Australian territory'. Another key set of themes that are being played out in our relationship to the oceans around us is the negotiation of a distinctly Australian sovereignty. Sovereignty is a territorial concept.[7] It is also, for all the practical efforts to pin it down, a decidedly slippery one; both a key institution underpinning modern political life and the contemporary international state system, and yet what political theorist WB Gallie termed an 'essentially contested concept', that is, one whose meaning is not fixed, but is constantly being reshaped through political practice.

The making of sovereignty is an ongoing process, and it is invariably bound up with questions of what constitutes the space of the nation, not in a real but in a symbolic sense. This is where Australia is so interesting, because it is one of the few cases where the hiatus between these two types of spaces – real and symbolic – appears at its clearest. Indeed, the limits of Australian territory would appear on the surface to be quite straightforward. This is after all the only continent that is also a single country, an island of land uninterrupted by any human-made border. And yet, despite such apparently clear-cut physical limits, the limits of Australian territory are constantly being re-negotiated by a complex array of boundary-drawing practices involving the rules of international law and border protection policies that take place upon the oceans. Before considering some of these I want to briefly outline the ways in which some of the problématiques of an Australian sovereignty have centrally taken shape in the relationship to the oceans around us.

The first of these has to do with being a settler society. Modern Australia is a nation that has been built through successive waves of people *coming to* it by crossing the seas around it. This incoming flow of people goes to the heart of Australia's history, and remains one of the central issues around which are played out questions regarding what it means to be Australian, a point to which I will return in the third part of this essay. The second has to do with Australia's origins as a post-colonial society, one, moreover, whose sovereignty is not so clearly demarcated from that of its former coloniser, whose Queen it shares. Australian public land is, after all, still Crown land, and the head of state lives on the other side of the world. This may explain why the geographical separateness between Australian and British lands may not suffice, in terms of providing a territorial basis for grounding an Australian sovereignty. Or rather, it explains why that physical discreteness may need to be overwritten by a symbolic process of *wrenching away from* to mark the land down-under as a self-contained territory and thus the adequate container for a distinctly Australian sovereignty.

Alongside coming to and wrenching away from, the third sovereignty-related problématique entering into our relationship to the oceans involves notions of property, or rather, particular dynamics of *appropriating.* This holds particular resonance in the Australian context, given the central role played by *terra nullius* in the colonisation of a

land simply taken over by means of having been proclaimed as belonging to no one; but it is also a more generic movement pertaining to the dynamics of sovereignty. Modern sovereignty always involves, in some way or another, an act of appropriation of land to found a territory, a key pillar of modern statehood. However this does not occur only as a founding act; rather, what it points to is a key driver of modern sovereignty that continues to shape, in subtle ways, some of the practices of the state.

With the exception of Antarctica, the earth has been entirely divided up amongst contending sovereignties and there is no more dry land left to claim. The oceans (and outer space to a lesser extent) have, as a result, become an important locus where this carving out of 'territory' still occurs. Yet the oceans are not so easily parcelled out, not merely because of the practical difficulties of drawing a line across the fickle medium of water but because, at least since Hugo Grotius articulated his doctrine of *Mare Librum* in the 17th century, the oceans of the world have been taken to be free spaces by the maritime nations – often the very same ones who were simultaneously parcelling out the land amongst themselves in the new colonies. Since then, with the progressive deployment and consolidation of sovereignty throughout the modern Westphalian system, the relations of states to their surrounding oceans has been marked by an ongoing tension between respecting the communality of the waters under the customary doctrine of *res communis* and the process of appropriation wrought by the dynamics of sovereignty. These tensions play out in the waters around Australia, surfacing, for example, in the management of Australian fisheries. The permit system by which catches are allocated appears from this perspective as an interesting negotiation between these two dimensions, the communal and the private. While the waters (including internal waters) are owned in common (belonging to the Commonwealth and the States), the resources extracted from them are appropriated for individual gain.

Ocean grabbing

Despite, or rather *because of* Australia's fixed terrestrial limits, the ongoing re-drawing of territorial boundaries occurs upon the surrounding waters.[8] Consider the space of the Australian fisheries; it been marked over the last three decades by a movement of outward expansion and consolidation. Here again this has taken place as a balancing of the requirements of *res communis* and the restraints placed upon sovereignty by international law on the one hand, with increasingly assertive sovereignty practices on the other. In her book *Boats to Burn: Bajo Fishing Activity in the Australian Fishing Zone*, anthropologist Natasha Stacey recounts how, in the early 1950s, Indonesian fishers could catch fish unimpeded anywhere off the Australian coast beyond 3 nautical miles from the shore, in accordance with the cannon-shot rule of naval custom. The next two decades saw a progressive toughening of the Australian stance, such that, by the early 1970s, responding to the incursions of Indonesian fishermen looking for trochus shellfish had become a priority in the government's maritime policies.[9] This hardening of claims over the surrounding waters took place against an international backdrop of progressive consolidation of the United Nations Law of the Seas (UNCLOS), which Australia ultimately mobilised towards deploying its sovereignty. In 1979, three years ahead of the finalisation of UNCLOS, Australia (who was not alone in doing so) unilaterally extended its fishing zone to a 200 miles radius beyond its coastline, using the Exclusive Economic Zone (EEZ) rule that was being codified (under article 56). This in turn secured the institutional basis for a hardening of the claims over this space through toughening maritime policies, which continued apace throughout the subsequent decades, culminating in the almost half a billion A$ committed by the Howard government in 2007 to police these waters, in a context,

furthermore, where the case for strong border protection policies was made all the easier by the 'war on terror'. This was accompanied by an increasing number of Indonesian fishers prosecuted for taking fish in 'Australian waters'.

Yet in mobilising the EEZ rule Australia was also strategically exploiting an ambiguity in international maritime law. The EEZ rule does not, strictly speaking, define 'Australian Waters'. These are laid out by another UNCLOS rule, the 12 nm rule (which itself is an extension of the 'canon shot rule'). What the EEZ stakes out, then, is a somewhat ambiguous zone lying between the territory of a state proper (its territorial waters) and the unclaimable space of high seas. Within that space the state is considered to own exclusive rights of exploitation and conservation; however the question of sovereignty is technically suspended rather than resolved (the article does not pronounce upon it). This may make no practical difference in terms of the governance over that area, but it is of symbolic importance with regards to a type of sovereignty that is now trying itself out upon the surrounding waters. In such a context, what the government policies achieved was to establish these oceans as 'Australian waters', thereby eliminating *de facto* what remained an ambiguity under the letter of international law, namely, the exact status of Australia's Exclusive Economic Zone.

The Southern Oceans, 'our' whales?

Another sea space where similar dynamics surface is the Southern Oceans and the politics of contestation currently taking place over Japanese whaling. Antarctica is the only piece of land that belongs to no-one, politically an 'a-territory', the various and overlapping claims of sovereignty put forward by many countries – including Australia – having been suspended in 1959 by the signature of the Antarctic Treaty. Historically, as I have documented, the laying of claims over Antarctica had been a messy and haphazard process involving diplomatic games between rival naval nations and indeed pure chance for the various captains coming from all over the world, vying with one another to be the first to spot the next piece of uncharted land. However, an important purpose of such claims was that with control over the land came control over the surrounding waters. Thus Australia's self-proclaimed Australian Antarctic Territory (put forward prior to the Treaty) significantly expanded that part of the Southern Oceans that came under its command. Exactly how the claims over the *waters* are affected by the suspension of sovereignty claims in the 1959 Treaty remains unclear; however Article 4 does specify that no new claim can be asserted while the Antarctic Treaty is in force. Moreover, the concept of EEZ upon which such claims over the water would rest, as well as Australia's establishment of its own exclusive economic zone, both postdate the Treaty. The extent to which these Antarctic waters can thus be considered 'Australian' under international law remains uncertain.

Currently, the argument put forward for taking action against the Japanese whalers is that they are taking whales in 'our' waters. The legal basis for that argument is that Australia has proclaimed a 'whale sanctuary' over all its EEZ waters, and these have been taken to include the 200 nm area surrounding the Australian Antarctic Territory.[10] Japan does not recognise these waters as constituting Australian waters, since, as it would no doubt argue in front of the International Court of Justice (ICJ), should Australia initiate legal proceedings against it (as has been suggested), Australia's claims of sovereignty over the area of land that it uses as the basis for claiming these waters have been suspended under the terms of the Antarctic Treaty. How the ICJ would actually interpret the Treaty and whether it would uphold Australia's claims remains a matter of speculation at this stage. My point here however is that an indirect but very significant pay-off – if Japan should suspend whaling activities in these waters - would be to obtain tacit recognition by another sovereign country that these waters do in fact constitute Australian waters. With mutual recognition constituting a cornerstone of the operation of sovereignty in the international system (a point

to which I return in the next section), this would decisively secure these waters as 'ours'. In other words, what was initially devised as a conservation measure (the designation of a whale sanctuary) also falls nicely within this broader logic of expansion of 'Australian territory' over the oceans around us.

The oceans as borders: protecting *qua* producing the Australian nation

In December 2006 Defence Minister Brendon Nelson rose in parliament to defend the Howard government's budgetary commitments to unprecedented levels of border protection upon the surrounding seas in the following terms:

> It's very important that anybody who comes to this country seeking to steal **our** fish, breach **our** sovereignty knows that they will be met with a very strong, disciplined Australian navy.[11]

In the same speech, he established the threefold purpose of these policies: to protect 'our oil and gas resources'; and prevent 'illegal arrivals' and 'illegal fishing'. In so doing he placed upon the same level protecting 'our' resources and protecting ourselves against the flood of immigrants that are threatening to break loose upon our shores from the North; thereby tapping into a recurrent trope in the Australian national security imaginary, our 'invasion anxiety' as aptly termed by Anthony Burke.[12] Interestingly, moreover, Nelson explicitly referred to the concept EEZ, only to twist the acronym in a new direction, calling it the 'economic exclusion zone' (instead of 'Exclusive Economic Zone'). More than a slip of the tongue, his statement is a profoundly political move that speaks to this subterranean, longterm trend towards asserting ever more strongly this function of the borders as that which effects the exclusion between an 'inside' and an 'outside' of the nation.

To understand what is at play here it is useful to turn to the field of Critical Security Studies. This field has cast an important new light upon the practices of national security, that is, the array of governmental measures developed to secure the nation, including these border protection policies increasingly deployed upon the oceans around us. What these scholars draw out is that to secure the nation is also to constitute it; these movements are two sides of the same coin. For the nation is never acquired once and for all, it is always in the making, a process that goes to the heart of politics itself. The production of national territory through the drawing of sovereign boundaries is thus intimately linked to the ongoing production, reproduction, and transformation of the national identity itself. This intimate link between security and the national identity thus lies at the core of Critical Security Studies. With regards to the oceans-as-borders these lenses are useful in two ways, first in illuminating the nature of borders as a key institution of national security, and second in revealing some of the practices of inclusion and exclusion that are involved in drawing the contours around the Australian nation.

The borders as institutions of national security

Much more than simple physical limits, borders constitute a key pillar of the national security edifice of the modern state. In fact the borders constantly being redrawn upon the waters around us offer an apt illustration of Speech Act theory's understanding of what constitutes an institution, in the vein of Ludwig Wittgentstein, John Austin and John Searle.[13] Unlike physical fact, institutional facts exist only as a matter of convention, that is, in the minds and practices of the social actors; even while they bear out very real, physical effects – perhaps no better felt than by the Indonesian fisher who encounters an Australian border patrol vessel. This difference between the natural and the social fact plays out in the relationship between that visible line of Australia's coastline and the sets of invisible lines shadowing this first, hard, line that

are constantly been drawn and redrawn across the surrounding oceans to assert an 'Australian territory'.

That institutions exist only as a matter of convention, upheld by the beliefs and practices of the social actors, also signifies that they *cease to exist* once they are no longer recognised by these actors, or in cases that involve actors who have not been socialised into such conventions. Take, for example, a Bajo catching fish in the waters off the North-Western Australian coast one day in 1982 like many others, just as his forefathers have done before him, unaware that, the year before, Australia had proclaimed these waters to be its own. He cannot see the limit of the Australian EEZ drawn across the oceans the way he can see the shoreline (the physical fact): in his mind, that border (the institutional fact) simply does not exist. Of course, in the encounter between the fisher and the Australian navy patrol that might ensue, this would make no difference to the practical purpose of enforcing the border, given the power differential between the two actors. But what it does mean is that border enforcement is about much more than the management of guns and navy boats. Its key purpose is to re-mark the line, and thereby reassert the existence of the institution it embodies. It also reveals how the reproduction of that institution centrally relies upon a process of socialisation. That is, what the deployment of guns and boats aims to obtain, ultimately, is recognition from the other actors involved in the same space that this unilaterally proclaimed institution does in fact exist; which in turn requires these actors to have been socialised into its rules. Securing this recognition is essential to perpetuating the institution as a whole. These are the same dynamics at play in the operation of sovereignty, which similarly relies upon mutual recognition by the actors involved. In fact, sovereignty points to the relevant social Other in this situation, the only actor whose non-recognition would effectively threaten the existence of the institution itself, namely, another sovereign state. Indeed, the biggest threat that Australia could face, and not just in terms of protecting its resources, would be for one of its neighbours – say, Indonesia – to suddenly decide that these unilaterally proclaimed borders mean nothing. This is why both countries have taken great pains to develop a complex set of agreements that effectively serve to lock in their mutual recognition of each other's borders.[14]

Borders as lines of exclusion/inclusion

What exactly is being protected? 'Our' fish (or our whales), or ourselves; or both? The lines that are being redrawn upon the oceans around us to etch the contours of Australian territory are not just geographical but symbolic lines. They serve to establish what 'Australia' is, by demarcating it against what it is not, or rather who it is not; or better still, who is not it. At play in these line drawing practices are the dynamics of inclusion and exclusion that go to the heart of the making of national identities. Borders serve to delineate the space of 'us' – the inside – against an outside space of 'them'. The borders by which territory is enclosed, and the space of the nation thus produced, become the boundaries of a national 'self' differentiated from a foreign 'other'. To put it differently, we establish who we are by establishing who we are not: exclusion is a key mechanism of identity construction.[15]

To return to Brendan Nelson's statement, to establish these fish as 'ours' is intended to signify that they do not belong to 'them'. It is intended, in other words, to implicitly draw a line between 'us' and 'them', with 'them', here, standing for the Indonesian fishers (the immediate reference that springs to mind against a backdrop of media saturated with reports on the increasing capture of Indonesian fishers) or the foreigner more largely. The use of the possessive achieves two key political goals. First, at the level of identity making, it marks the interface between the inside and the outside of the nation

as the strategic site for the construction of an Australian identity. Indeed the possessive can only be understood by reference to an international context: the use of 'us' holds little meaning in the domestic context where the fish are allocated into a 'mine' or 'thine' through the permit system. Thus the possessive serves to conjure the international context. It establishes this interface between the national and the international as the locus where the binary opposition between an Australian-us and a foreign-them is found.

Second, at the policy-making level, in placing upon the same level the protection of 'our' fish and 'our' sovereignty, the government is performing what the Copenhagen School has called an 'act of securitisation', whereby an issue which is not explicitly linked to the core security concerns of the state, here an economic resource, is successfully reframed as a matter of national security. This in turn unlocks a whole new range of resources for addressing national security that would not be available if the public, or the opposition, did not buy this line and saw the issue merely as an economic matter.

Our relationship to the oceans around us hold up a mirror reflecting who we are. We protect the oceans around us because they separate us from and connect us to the rest of the world, and because the resources they contain are dear to us. However not all their resources are equally precious to us, it seems; some are more precious than others; nor are these necessarily the most damaged ones. Our relationship to the oceans around us thus raises interesting questions about what gets to be exploited, and what protected. Or indeed *who* falls under the mantle of protection, and who does not.

The oceans around us constitute a key site where a distinctive Australian sovereignty is being carved out, through the drawing of the ever sharper contours of an Australian territory. These also constitute boundaries of inclusion and exclusion, through which a distinctive Australian identity is fashioned. Both those diminishing resources, and the people that fall beyond these lines we draw to protect ourselves, cast dark shadows upon the way we relate to the oceans around us.

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[1] For a development of this history, see my (2008). *The Power of Words in International Relations: Birth of an Anti-Whaling Discourse*, Cambridge, MA: the MIT Press.

[2] WTO (2008). *International Trade Statistics*, Geneva: WTO Publications:1.

[3] *Ibid:* 57.

[4] http://www.afma.gov.au/fisheries/industry/default.htm, accessed 02/03/09.

[5] Or at least of 'consumptive uses', activities such as whale-watching being considered as 'non consumptive' forms of use.

[6] The Hubbart curve is a model used to predict future oil productions and at the centre of the peak oil thesis (which states that fossil fuel productions has peaked and is now on a downward curve).

[7] The two attributes of sovereignty under International Law, as codified by the 1933 Montevideo Convention on the Rights and Duties of States (Article 1), are the possession of a territory and a population.

[8] See also Balint, Ruth (2007). '*Mare Nullius* or the Making of White Ocean Policy', in Perera, Suvendrini (ed) *Our Patch: Enacting Australian Sovereignty, Post-2001*, Network Books Symposia Series.

[9] Australian National Audit Office (2001). Report No 384, 'Review of Coastwatch. Joint Committee of Public Accounts and Audits', Australian Government Publishing Service, Canberra, August : 4.

[10] For a map of this whale sanctuary, see http://www.environment.gov.au/coasts/species/cetaceans/sanctuary.html, accessed 02/03/09.

[11] http://www.brendannelson.com.au/Pages/Article.aspx?ID=511 , accessed 04/03/09, emphasis added.

[12] Cf Burke, A (2008). *Fear of Security: Australia's Invasion Anxiety*, Cambridge: Cambridge University Press. Thus the Japanese incursions during the Second World War, which occurred mainly by sea, with the Japanese coming as close as the internal waters of Sydney Harbour, remains an important reference point upon which this anxiety feeds.

[13] Cf notably Austin, John (1962). *How To Do Things with Words*, Oxford: Clarendon; and Searle, John (1995). *The Construction of Social Reality*, New York: Free Press.

[14] These agreements include the 1974 'Memorandum of Understanding between the Government of Australia and the Government of the Republic of Indonesia Regarding the Operations of Indonesian Traditional Fishermen in Areas of the Australian Exclusive Fishing Zone and Continental Shelf' and the '1981 Memorandum of Understanding on a Provisional Fisheries Surveillance and Enforcement Arrangement', which largely favoured Australia sovereignty claims, amended by (the still as yet unratified) 1997 Australia-Indonesian Maritime Delimitation Treaty.

[15] For a broader development on this point, cf Epstein (2008) *op cit*.

The Blue Mud Bay Case: Refractions through saltwater country

Frances Morphy and Howard Morphy

Introduction

Under the *Aboriginal Lands Rights (Northern Territory) Act 1976* (ALRA) Aboriginal freehold land has always extended down to the low water mark. In a historic majority decision on 30 July 2008, the High Court of Australia ruled on appeal in the Blue Mud Bay case[1] that, in effect, the ALRA also applies to the column of water above the intertidal zone. While the Northern Territory's *Fisheries Act 1988* applies to all the coastal waters of the Territory, it is now no longer sufficient for someone to hold a license under that Act if they wish to enter or to fish in the intertidal zone. They must also have permission from the land trust in question - the Northern Land Council. This ruling applies to some 80 per cent of the Northern Territory's coastline, and not surprisingly the major parties - the Northern Territory government, the Northern Land Council and recreational and commercial fishing interests - have agreed to a one-year moratorium while more longterm arrangements are negotiated.

We were expert witnesses at the original hearing in north east Arnhem Land in 2005, having worked with the nine Yolngu[2] clans of the Blue Mud Bay area for the previous five years to prepare the supporting documentation for the case. We have written elsewhere in some detail on the nature of Yolngu sea tenure[3] and on the court proceedings[4] viewed as an arena where one system of law - the Yolngu system - is forced into commensurability with the legal system of the encapsulating settler state in order to be rendered recognisable. Here we focus on a related topic, in keeping with the theme of this issue of *Dialogue*. We contrast settler Australian and Yolngu ways of conceptualising and giving meaning to the bodies of salt water that settler Australians call 'seas' and 'oceans'. We explore elements of the Yolngu worldview in order to unsettle the foundations of the settler 'political geographic imaginary' (in Epstein's phraseology, this volume) surrounding concepts such as 'ocean' and 'border'.

Without such an unsettling, settler Australia cannot begin to comprehend what it is truly asking of Australia's Indigenous peoples when it demands that they pursue their land and sea rights within the framework of settler law. Nor can it begin to understand the resilience and persistence of Indigenous worldviews in the face of the encapsulating power of the settler state.

In a number of 'Western' domains of knowledge, the boundary between land and sea is problematised - in particular in the natural and environmental sciences. Coastal ecology requires a dynamic perspective on the interrelationship between land and sea. But the holistic nature of the Yolngu worldview means that environmental factors are integral to the ways in which Yolngu also conceptualise relationships in the social and legal domains. The dynamic and fuzzy nature of the ecological and environmental boundary between land and sea is reflected in their system of country ownership.[5] Ancestral 'tracks' and estate areas cut across the coastal boundary, reflecting the ecological reality. The Blue Mud Bay native title case to an extent brought that holism back into the ALRA - or perhaps, from a Yolngu perspective, shifted the arbitrary boundary a little further away from the shore.

Scale and substance

The first point of contrast between the Yolngu worldview and the settler Australian political geographic imaginary is one of scale. Settler Australians brought with them to

Australia's shores the global concepts 'continent' and 'ocean', forged during the period of the colonial expansion of the Western powers. In the modern settler imaginary, Australia is the 'island continent' bordered on all sides by ocean. These are highly abstract and general conceptualisations that say nothing about the material qualities of the places where 'continent' and 'ocean' meet. Other contributions to this volume interrogate in more detail the meaning and significance of 'ocean' for settler Australian society. We simply draw attention to two general features of the settler political geographic imaginary: its articulation in terms of binary oppositions and its insistence on fixed and immutable boundaries between opposed terms. These features of the settler imaginary - the global perspective, abstraction from the material and oppositional, bounded binary terms - are reflected in the mapping conventions of Western colonising societies. As Marcus Barber notes, a map is 'a view from an omniscient height'.[6] The boundary between land and sea is represented as a solid, fixed line.

In one sense, the 'problem' that the Blue Mud Bay case addressed was entirely a product of this settler imaginary, in which bodies of water are construed as static rather than dynamic. The intertidal zone, which in physical terms is sometimes 'land' and sometimes 'water', has to be assigned to one or the other in law, in order to preserve the binary opposition between the two terms. By the end of this paper it should become clear why the Yolngu found this a somewhat bizarre state of affairs.

In contrast to the omniscient, abstracted and globalising perspective of the settler state, the Yolngu world view is grounded in and founded on a profound knowledge of the physical qualities of the locale in which they live out their lives. Barber captures vividly just how these qualities diverge from the idealised abstraction of the settler view:

> In the wet season, the 'rivers' flow kilometres offshore, carrying freshwater, silt and debris from the land out into the deep sea, whilst in the dry season the salt pushes into the rivers and comes up from beneath until it is found many kilometres inland. There is no distinction between seawater and saline groundwater, for they are one and the same, saltwater. Coastal swamps, floodplains, and mangroves are places where land, sea and river merge … Water erodes a distinction fundamental to the presentation of a map, as the clear black line dividing sea blue from land brown becomes a zone sometimes kilometres wide.[7]

However, we do not want to characterise the Yolngu world view as purely 'local' as opposed to the settler 'global', for the Yolngu world view extends to encompass more than the local in significant ways. For example, the founding ancestors of a set of Dhuwa moiety clans, the Djan'kawu Sisters, came to north east Arnhem Land across the sea from Buralku, the Dhuwa moiety land of the dead, in the east. And for several hundreds of years the Arnhem Land coast was visited seasonally by fleets of praus carrying trepang fishermen from South Sulawesi. Moreover, many Yolngu travelled widely outside the immediate area of their clan estates. There was, therefore, a consciousness of a world outside the local well before the arrival of settler Australians onto the scene. Yolngu had a sense of the vastness of the world beyond their shores and a view that the land and sea were interdependent creations.

Binaries need to be placed in the context of their interrelationships in systems of thought. Yolngu, too, model aspects of the world in terms of binaries: the world is divided into two moieties - Dhuwa and Yirritja. The binary of moiety is integral to the Yolngu system of social organisation. A person belongs to the moiety of their father

and Dhuwa people marry Yirritja people and vice versa. The moieties partly structure the relationship between people and land, since patrilineal clans are the owners of estates. These estates inherited from the ancestral past divide the land and sea into Dhuwa and Yirritja. The opposition between Dhuwa and Yirritja is applied to the universe as a whole. It has the effect of making the universe congruent with social life and social life in harmony with the rhythms and processes of the natural world. Together the moieties encompass everything - ancestral creator beings, people, flora, fauna, and land and sea estates. But whereas often in the settler Australian imaginary binary terms are construed as oppositional, in Yolngu thought they are construed as complementary, or mutually constitutive. Dhuwa and Yirritja cannot survive alone, since Dhuwa children must have Yirritja mothers, and vice versa. In the conception of the natural world Yirritja and Dhuwa waters although generally separate are often adjacent. In some places they flow above or beneath each other and occasionally at their edges intermingle and mix.

In context the binaries associated with Western ontologies and epistemologies are often relational. But in the settler 'political geographic imaginary' dualisms between terms such as 'settled' and 'unsettled', or 'ocean' and 'land' often create sharp oppositions. And such distinctions can be seen to operate in the legal arena where the necessity to draw boundaries between things to create certainty often cuts across a more complex reality. In a cross-cultural context where two worldviews meet, legal binaries make commensurability hard to achieve.

Boundaries and flows

These two ways of constructing binaries - the absolute and the permeable - lead to two very different ways of imagining the space in-between. In the settler political geographic imaginary, this space is constructed as a fixed boundary, and flows across boundaries are thereby rendered problematic unless controlled.[8] In the case of water, boundaries are even imagined in the midst of flux, as in the distinction between 'territorial' and 'international' waters. As recent history has shown, such boundaries, once imagined and then legislated into being, have real consequences for those who transgress them. Taking the global perspective, waters are marshalled into named areas called 'oceans' if they are very large and land-encompassing or 'seas' if they are smaller or partly encompassed by land. The abstracted preoccupation with shape, size and spatial relationship to land is further elaborated through terms such as 'gulf', 'bay', 'strait', 'bight', and so on.

These terms of the Western political geographic imaginary allow space to be described in a delimited way and converted into fixed and defined areas that can be subdivided and owned. There is another settler imaginary that might be termed the 'environmental imaginary' where flows and flux are allowed conceptual space. Terms that belong in this imaginary include 'stream' as in 'the Gulf Stream' and 'current' (and, possibly, 'intertidal zone'). These refer to properties of the natural world that it is harder to imagine as being owned - it is easier to claim a bay than the current that flows into it.[9] And until very recently this entire imaginary has been construed in binary opposition to the political geographic imaginary. We are presently witnessing the struggle to integrate the two within a single framework.[10]

In their system of ownership Yolngu sometimes create boundaries that cut across flows. For example a river may flow through the estates of several clans, so that stretches of the river are owned by different groups. There is always an ancestral explanation for the change of ownership and it is often congruent with a change in topology, such as a change in the direction of flow or in the characteristics of the water.

However, even when a river is divided along its length into stretches associated with ancestral beings of different moieties, the waters from each moiety flow on out into the sea. The waters of the two moieties are said to remain separate, with one flowing over the top of the other. The rivers carry memories of ancestral events that occurred upstream that may often appear as signs in the water out to sea.

The Yolngu worldview is at once more grounded in the material properties of locale and more integrated. There is no Yolngu word that translates as ocean or sea, no binary opposition 'sea' versus 'land', nor, as noted by Barber, is there a word that translates as 'sea' in its meaning of 'seawater'. Instead we find *monuk* (salty, bitter) and *raypiny* (fresh, palatable), and as a mediating term between these binaries, *galimindirrk* (brackish); all these are potential qualities of *gapu* (water) as it moves in relation to the surface of the earth and the skies above through the seasonal cycle. In Yolngu thought, the space in-between those 'things' that English speakers define as 'land' and 'sea' is a permeable zone which is potentially a site of creativity, production, fertility and dynamic change.

This view extends to social spaces in-between. Whereas the settler impulse is to draw boundaries between 'Us' and 'Other', particularly when the 'other' persists in being different, the Yolngu impulse is to engage productively - to incorporate and integrate aspects of the other into the Yolngu domain, and to offer aspects of Yolngu understandings of the world in return, in the interests of peaceful and respectful co-existence. Instances of such attempts abound - the creation of the Elcho Island Memorial, the Yirrkala Church Panels and the Yirrkala Bark Petition,[11] the highly successful annual Garma Festival, and engagement in the Blue Mud Bay case itself. It is deeply ironic that the settler imaginary construes the 'traditional' Aboriginal world as static and unchanging and views all evidence of change, therefore, as movement towards 'inauthenticity'.

In the Yolngu view of spaces in-between, the fluidity of water has the potential to function as a powerful metaphor for change, renewal and flux. And this is precisely its role in the Yolngu social imaginary and in those of many Indigenous Australian coastal and riverine peoples.[12] Yolngu have names for bodies of saltwater, just as they have names for estate areas on land. But what these names mean, and the kinds of entities that they designate, are profoundly different from settler constructs such as 'the Gulf of Carpentaria' or 'Myoola Bay'. One of the most difficult tasks in preparing the materials for the Blue Mud Case was constructing the 'site map' - that is attempting to overlay Yolngu land and sea country onto the settler Australian map of the region.

Ontology and ownership

At first glance, the settler Australian misconception that a 'truly' Aboriginal culture is unchanging is understandable, since this is how, at one level, Yolngu represent it themselves. For example Yolngu witnesses in the Blue Mud Bay case often contrasted settler and Yolngu ways of being in statements such as: 'We're living in two worlds today, for example. Your world is chang[ing] every day or every month or every year. My law and my story, it can't change.'[13] People also said things like: 'The law been there for ever. It was given from our ancestors to our grandfathers to our father to me.'[14]

However, these statements are no different in kind from those that could be made by a Christian with reference to God who, like the ancestral creator beings of the Yolngu cosmology, is conceived of as eternal and immutable. Yolngu acknowledge that change happens on the surface - indeed as we have suggested, they often embrace it imaginatively and productively. But they view the principles and laws laid down by the

creator ancestral beings as an eternal template that underpins their stewardship of their country. If Yolngu cease to play their proper role they will, literally, cease to be Yolngu. They will have 'lost their culture' as they put it. We begin this discussion of ownership with what Yolngu consider to be ontologically prior, that which underlies the surface of the everyday.

The area of the Blue Mud Bay claim covers all or part of the estates of a group of patriclans - four of one moiety and five of the other - that are closely linked to one another through marriage and through their ancestral inheritance. The Dhuwa moiety clans of the area are Marrakulu, Gupa Djapu, Dhudi Djapu and Djarrwark, and the Yirritja moiety clans are Madarrpa, Dhalwangu, Munyuku, Manggalili and Yarrwidi Gumatj.

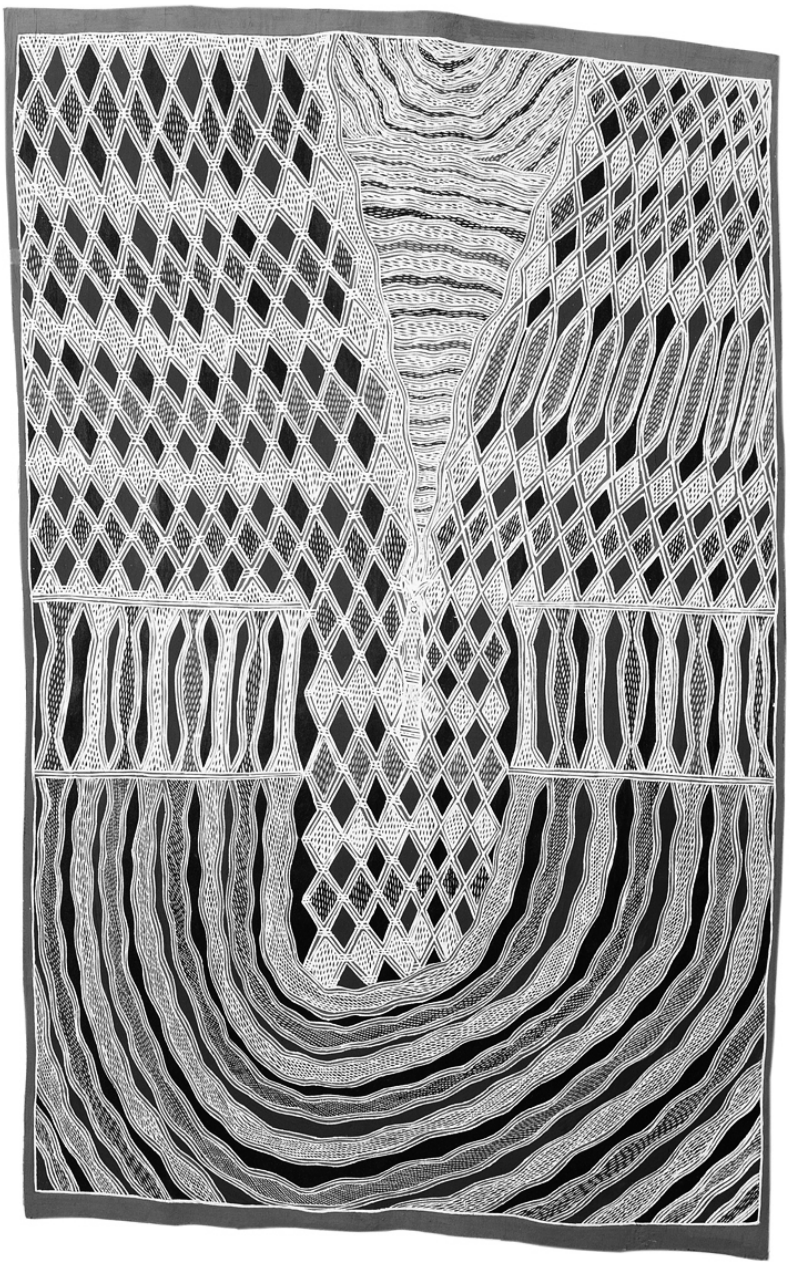
One cannot pose the question to a Yolngu person: '*Why* is the world divided into Dhuwa and Yirritja?' It just is, and always has been; that is how the world was created. As creator beings travelled the country they claimed places as their own by creating their features, naming them, and peopling them with the first Yolngu. In these journeys, Dhuwa and Yirritja beings kept themselves separate and avoided the surface of places belonging to the other moiety. They might sometimes tunnel under or leap over, but they would rarely trespass on the surface, unless inadvertently and with usually drastic consequences.

The 'boundary' between land and sea was far more permeable.[15] Bäru (crocodile), a Yirritja moiety ancestor whose journeys link the Madarrpa clan with Yarrwidi Gumatj and other clans to the north, quarrelled with his wife. In revenge she set his bark hut on fire as he was sleeping inside. With burning embers on his back he plunged into the sea at Yathikpa,[16] and created the reef at Nimbarrki. The plentiful sea grasses there are the flames still burning beneath the sea. Mäna (shark), a Dhuwa moiety ancestor whose journeys link the Gupa and Dhudi Djapu clans, was harpooned in coastal waters off Dhawutjpuy.[17] Fatally injured, he tore through the water northwards, until he hit the margins of the Garangarri floodplain. In his death throes he gouged the channel called Wurrwurrwuy through the wetlands and finally came to rest, exhausted, at a billabong called Dhuruputjpi in the course of the river that flows into the wetlands.[18] He lies beneath the waters there, with the harpoon still piercing him. The ancestral harpoon rope is manifest as Bunhdhamarr, a raised bank that runs for some kilometres along the river, from the raised margin of the wetland as far as Dhuruputjpi. Many of the major creation myths of both Dhuwa and Yirritja clans involve such journeys and transformations.

The journeys of the creator beings created a complex pattern of estate ownership. Clan estates in this region are dispersed, comprising parcels of land and/or sea distributed widely across the region. These 'estate areas' are often associated with the activities of different creator beings. Some particular kinds of areas are in joint ownership - we will return to this below. Let us take Madarrpa as an example. We have already mentioned Bäru, a major ancestral being whose creative acts link Madarrpa to the various Gumatj clans. Bäru is associated with a series of more or less contiguous major sites in the Madarrpa clan estate - Yathikpa, Nimbarrki, and the crocodile nesting place at Garrangali, on the seaward side of the Garangarri floodplain. Through spirit conception, Madarrpa clan members are animated by Bäru and so share his characteristics.

Figure 1

Burrut'tji, 2002. Artist Djambawa Marawili (b 1953). Queensland Art Gallery, Brisbane. Copyright the artist. Reproduced with the permission of Buku-Larrnggay Mulka Art Centre, Yirrkala.



The painting represents the coming together of the floodwaters of three Yirritja moiety clans. The bar across the centre of the painting represents the coastline at the head of Jalma bay. The linear pattern inside it belongs to the Yirritja moiety Salt-water Ma̲darrpa and represents the stakes of an ancestral fish trap. The diamond pattern to the top left represents the floodwaters of the Baykurrtji River to the west in the country of the Yirritja fresh-water Ma̲darrpa clan. The segment to the top right represents the waters of the Yirritja Dha̲lwangu clan flowing from Gä̲nga̲n to the north. The swollen figure that divides them represents an underground tunnel through which the floodwaters flow beneath Dhuwa moiety country before coming out in the river mouth. The tunnel is the home, the body, of the ancestral snake Burru̲ttji. The snake's head can be seen emerging. As the fresh water plume expands into the bay it can be seen to be pushing aside the swirling deep salt water of Mungurru.

A second major creator being for Madarrpa country is Mundukul', also known as Burruttji (yellow water python). Madarrpa have a small estate area called Mälnga in the bay to the east, comprising a tidal creek that was created by Mundukul'.[19] They have a second, larger estate area in the bay to the west that they own jointly with Dhalwangu, comprising the estuary of Baraltja[20] and the associated floodplain, called Yakutja. Inland to the north, up off the floodplain, is the Dhalwangu estate area of Gapuwiyakpuy, a billabong on a river-course that drains into Yakutja.[21] Mundukul' plunged underground here, creating a subterranean channel that comes out close to Baraltja. In the dry season, the waters at Gapuwiyakpuy taste brackish because saltwater seeps inland through this 'tunnel'. In the wet season, freshwater pours through the river system above the floodplains and then off the land and out into the bay through the coastal creeks, creating vast plumes of fresh water on top of the salt. This Yirritja flow of fresh floodwater is called Gularri, and in the bay, where salt and freshwater mix to form brackish Yirritja water it becomes Widiyarr. In paintings associated with Baraltja in the wet season, Mundukul' is depicted as Widiyarr, with his huge head jutting out of the mouth of Baraltja into the bay (see Figure 1). The tropical storms of the wet season are caused by Mundukul' and other ancestral snakes as they stand and tower into the sky, manifest in rainbows, spitting water into the air as they communicate with each other. Thunder and lightning are the visual and aural signs of snakes 'talking to each other'. In this myth complex, the properties of water, as it behaves through the seasonal cycle, are taken up and elaborated metaphorically to reflect on processes of regeneration, and on the nature of knowledge, how it is communicated, and how it serves to connect people to each other.

The third major ancestral story for Madarrpa concerns beings who mostly maintain a human-like form.[22] They are turtle hunters whose hunting area is the deeper waters of the three inner bays of the claim area and Blue Mud Bay proper beyond. Associated with them are groups of spirit women who live and fish along the coast, and who mourn the hunters when their canoes are overwhelmed and their bodies washed to shore. These waters are called Mungurru, and belong jointly to the three Yirritja clans of the area - Manggalili, Madarrpa and Dhalwangu - whose major land estate areas are found on the peninsulas that rim these bays, and who each have a version of the turtle hunter and spirit women mythology. Associated with the Madarrpa turtle hunters are a group of spirit women who live and move along the shore near the present-day homeland settlement of Yilpara. Just near Yilpara itself is found a ground sculpture called Yingapungapu made in ancestral times by the women. All three clans have an ancestral Yingapungapu on their clan estates, and humanly constructed copies feature in the mortuary rituals of all three. This myth complex is heavily imbued with metaphors concerning the nature of death and mourning, what happens beyond death, and the structure of gender relations in Yolngu society.[23]

It should now be evident why it is so difficult to map the complexity and dynamism of this worldview onto the two-dimensional, static field of the Western map. The Yolngu worldview, grounded as it is in the lived experience of its locale, focuses on flux and movement, and on the potentialities, both physical and metaphorical, that movement releases. Mungurru is not 'sea' and it is not 'a sea'. It is not conceptualised as a bounded and fixed geographical space. It moves in and out with the tides, interacting with other named bodies of water belonging to other groups. In the wet season it mingles with the freshwater pouring off the land and is transformed by it into Widiyarr, while in the dry season it infiltrates the land. Its associated mythology encompasses ancestral actors and sites on the land as well as in the 'sea'.

People on the surface of country

In the Yolngu system of kinship and bestowal, two other clans besides his own are important to a man.[24] One is a clan of the opposite moiety - his *ngändi* (mother's) clan - and the other is a clan of the same moiety - his *märi* (mother's mother's) clan. The preferred marriage in the Yolngu system is between a man and his mother's mother's brother's daughter's daughter. The majority of marriages take place between members of clans of the same region, so that over time clans as a whole are viewed as being in a kin relationship to one another. Thus Manggalili is *märi* to Madarrpa and Dhalwangu, and *ngändi* to Dhudi Djapu. Dhudi Djapu is *märi* to Gupa Djapu, and *ngändi* to Madarrpa, and so on. Water once again serves as a metaphor for these connections. The three Yirritja clans (Manggalili, Madarrpa and Dhalwangu) hold Mungurru in common, while the two Djapu clans hold in common the Dhuwa moiety Balamumu saltwaters associated with the travels of Mäna (shark). In the wet season, the Gularri waters that rush down from the inland Manggalili estate of Wayawu meet the Dhudi Djapu water at Dhuruputjpi, and then flow on top of the Dhudi Djapu waters to the margins of the wetland. There they plunge under the wetlands that are inundated with Dhuwa moiety waters, to re-emerge as freshwater springs on the coastal margin.

The holism of the Yolngu worldview creates connections between natural processes, geographical features and the systems of social organisation and religious practices that enable people to live in and relate to the environment into which they are born. It sets up a process of collaboration etched into the landscape that has allowed them to reproduce themselves in place over countless generations.

Marcus Barber characterises the basic question of his thesis as: 'What does it mean to live in a world of water?'[25] He comments that it is 'important not to overstate the differences from a worldview more familiar to the Western academy',[26] but notes that different aspects of Yolngu 'aqueography' would be dispersed among a series of academic disciplines - meteorology, hydrology and oceanography:

> Yet the whole would rarely appear in such accounts, each vision is only partial. When the whole cycle is integrated and presented, it is still a further leap to then use such a deep knowledge of water flows as a basis for understanding and representing important social forms.[27]

It is the complex integration of the metaphysical with the physical and of both with the social that gives the Yolngu worldview its resilience and its power to sustain the Yolngu sense of their identity. In conclusion we ask the question: what was the effect of the Blue Mud Bay court process and of the final decision on this worldview? What did it mean to the Yolngu?

Conclusion: the refractions and fractures remain

The subtitle of this paper, 'refractions through saltwater country', suggests that the Yolngu and settler Australian society view the material phenomenon of bodies of saltwater through very different cultural lenses. In Blue Mud Bay, settler Australians 'see the sea'[28] - a political geographic zone, notionally bounded and distinct from land, whereas Yolngu see their saltwater country.

Before the Blue Mud Bay case, Yolngu had secure tenure and control over their 'land' country under ALRA, but were powerless under settler law to control access to their 'sea' country. Significantly, many sacred places are in what settler Australia calls the 'intertidal zone'. While the issue of whether the intertidal zone is 'land' or 'sea' under the ALRA remained unresolved, Yolngu were unable to prevent commercial

barramundi fishermen from setting their nets at places like Baraltja. They experienced a fracturing of their power to look after their sacred places that were not 'on land'.

The preparation for litigation was time-consuming and for those who were called as witnesses the court process was gruelling, but the Yolngu of Blue Mud Bay thought it worth the effort. They did not consider that the underlying sovereignty of their ancestral law was compromised by allowing it to be tested in the arena of settler law,[29] although initially they contested the necessity for it.[30] In the everyday world of power relations between themselves and the encompassing settler society, they stood to regain a measure of control over their saltwater estates. In their view, the decision of the High Court reflected the justice of their case. It reconciles mundane power under settler law with their responsibilities under Yolngu law.

But only for the intertidal zone. Beyond that, the ALRA ceases to apply, and the Yolngu have recourse only to the provisions of the *Native Title Act* (1993) which grants them certain non-exclusive rights. The settler Australian political geographic imaginary continues to produce and enact boundaries that fracture Yolngu control over Yolngu country. So long as it continues to do so, Yolngu are unlikely to embrace settler law fully as 'their' law, although technically it is their law as citizens of Australia.

The continuing lack of integration between the settler political geographic and environmental imaginaries has consequences for Blue Mud Bay Yolngu that go beyond the case of their saltwater country. It threatens the existence of their communities on the land. We are seeing increasing support for the formation of Indigenous Protected Areas and for ranger programs in remote Australia, a recognition - in the environmental imaginary - that people like the Yolngu, living on their country, have a valuable contribution to make to the conservation of the continent's biodiversity. But at the same time, in the political geographic imaginary, small settlements on country are being classified as 'unviable', and are beginning to be starved of support. Yolngu are being 'encouraged' to leave their clan estates to recentralise in the hub communities - the ex-missions that they walked off in the early 1970s. As one paradox is resolved, it is replaced by another.

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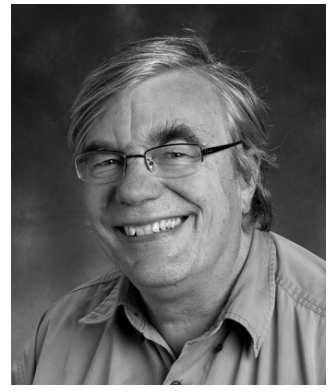

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[1] The initial determination of the Blue Mud Bay case can be found at *Gawirrin Gumana v Northern Territory of Australia (No 2)* [2005] FCA 1425. The determination of the Full Federal Court hearing may be found at *Gumana v Northern Territory of Australia* [2007] FCAFC 23. The High Court's determination may be found at *Northern Territory of Australia v Arnhem Land Aboriginal Land Trust* [2008] HCA 29.

[2] The Yolngu-speaking people of north east Arnhem Land numbered just over 6000 in the 2006 Census. Their land and sea estates stretch from Cape Stewart in the west to the Gulf of Carpentaria in the east and as far south as the Walker River - a land area roughly the size of Wales. They are one of the most intensively studied Aboriginal peoples in Australia; for a listing of the most significant anthropological monographs see Morphy, F (2009). 'Enacting sovereignty in a colonized space: the Yolngu of Blue Mud Bay meet the native title process', in Fay, D and James, D (eds), *The Rights and Wrongs of Land Restitution: 'Restoring What Was Ours'*, Routledge-Cavendish, Abingdon: 120, fn 1. For a brief history of the colonisation of their region, which did not effectively begin until the 1920s, see Morphy, F (2008). 'Whose governance, for whose good? The Laynhapuy Homelands Association and the neo-assimilationist turn in Indigenous policy', in Hunt, J, Smith, D, Garling, S and Sanders, W (eds), *Contested Governance: Culture, Power and Institutions in Indigenous Australia*, CAEPR Research Monograph No 29, ANU E Press, Canberra: 113–51. Prior to the Blue Mud Bay case the Yolngu had other significant encounters with the settler legal system, most notably in the case of *Milirrpum v Nabalco and the Commonwealth of Australia* [1971] 17 FLR 141. Blackburn J's finding in this case that Australian law could not recognise Yolngu rights in their in their clan estates as property rights led to the passing of the *Lands Rights (Northern Territory) Act 1976* (Cwlth).

[3] Morphy, H and Morphy, F (2006). 'Tasting the waters: discriminating identities in the waters of Blue Mud Bay', *Journal of Material Culture*, 11, 1/2: 67-85.

[4] Morphy, F (2007). 'Performing law: the Yolngu of Blue Mud Bay meet the native title process', in Smith, BR and Morphy, F (eds), *Effects of Native Title*: *Recognition, Translation, Coexistence*, CAEPR Research Monograph No 27, ANU E Press, Canberra: 31-57; Morphy, F (2009) *op cit*: 99-122.

[5] We use 'country', as the Yolngu do, to refer to both 'land' and 'sea' estates.

[6] Barber, M (2005). Where the Clouds Stand: Australian Aboriginal Relationships to Water, Place and the Marine Environment in Blue Mud Bay, Northern Territory, PhD Thesis, The Australian National University, Canberra: 7.

[7] *Ibid*: 9.

[8] For an elaboration of ideas concerning boundedness in the context of settler and Indigenous social imaginaries see Morphy, F (2007). 'Uncontained subjects: "population" and "household" in remote Aboriginal Australia', *Journal of Population Research*, 24, 2: 163-84; Morphy, F (2008) *op cit*: 144-6.

[9] See Strang, Veronica (2008). 'Owning Water: elusive forms and alternate appropriations' paper presented at the ASA conference 'Ownership and Appropriation, Auckland December.

[10] See, for example, Brig, M and Graham, M (2009). 'Take a page out of own book - whitefellas must change to survive', *Sydney Morning Herald*, 2 March, available at http://www.smh.com.au/opinion/take-a-page-out-of-own-book--whitefellas-must-change-to-survive-20090301-8lh4.html?page=-1 (accessed 2 March 2009).

[11] The original work on the Elcho Island Memorial is Berndt, RM (1962). *An Adjustment Movement in Arnhem Land*, Mouton, Paris. For a discussion of how Yolngu have attempted to use art, including the Memorial, the Church Panels and the Bark Petition, as a means of communicating with settler Australians see Morphy, H (2007). *Becoming Art: Exploring Cross-Cultural Categories*, Berg, Oxford: 62-66.

[12] See for example Strang, V (2002). 'Life Down Under: water and identity in an Aboriginal cultural landscape', *Goldsmiths College Anthropology Research Papers, No 7*, Goldsmiths College: London.

[13] Blue Mud Bay court transcript: 284.02-04.

[14] Blue Mud Bay court transcript: 128.01-03.

[15] In the paragraphs that follow, the endnotes carry a parallel text about how settler Australia has named this region. Matthew Flinders' *Investigator* sailed along the western shore of the Gulf of Carpentaria in January and February 1803, and many of the names for bays and for features of the landscape visible from the sea such as peninsulas and hills date from this voyage.

[16] On the eastern shore of what settler Australia calls Grindall Bay.

[17] On the western shore of what settler Australia calls Grindall Bay.

[18] A river that settler Australia calls the Durabudboi River—but Dhuruputjpi is the name for just this billabong and its surrounds.

[19] On the eastern shore of what settler Australia calls Myoola Bay.

[20] Baraltja is at the mouth of the northern anabranch of what settler Australians call the Koolatong River.

[21] Settler Australians call this the Ludtanba River. In settler terms the 'Ludtanba' is a tributary of the 'Koolatong'. Luthunba is the name of a major sacred area created by Mäna (shark) at the mouth of what settler Australians call the southern anabranch of the Koolatong River, many kilometres to the south, in the country of a southern Dhuwa moiety clan.

[22] Many - more localised - ancestral beings people the Madarrpa countryscape. There is no space to discuss them here.

[23] For an extensive analysis of this myth complex see Morphy, H (1991). *Ancestral Connections: Art and an Aboriginal System of Knowledge*, University of Chicago Press, Chicago; Morphy, H (2007). 'Anthropological theory and the multiple determinacy of the present', in Parkin, D and Ulijaszek, S (eds) *Holistic Anthropology: Emergence and Convergence*, Berghahn, Oxford: 148–81; Morphy, H (2008). '"Joyous maggots": The symbolism of Yolngu mortuary rituals', in Hinkson, M and Beckett, J (eds) *Appreciation of Difference: WEH Stanner and Aboriginal Australia*, Aboriginal Studies Press, Canberra: 137-51.

[24] There is an extensive literature on the Yolngu kinship system, one of the most complex in Aboriginal Australia. Here we gloss over much of this complexity. For a more complete sketch of the system see Morphy, F (2008) *op cit*: 122-27.

[25] Barber, *op cit*: 7.

[26] *Ibid*.

[27] *Ibid*.

[28] A reference to the immortal words of Irving Berlin, a version of which (slightly amended from the original) was taught to one of us by our father:
We joined the Navy to see the world
And what did we see?
We saw the sea
We saw the Pacific and the Atlantic
But the Atlantic isn't romantic
And the Pacific isn't terrific
Like it's cracked up to be

[29] See Morphy, F (2009) *op cit*: 114.

[30] *Ibid*: 103.

Regulating Fishing in Australia:
From mullet size limits to international hot pursuits

Warwick Gullett

Introduction

Fisheries laws simply regulate human interactions with fish. Yet it is an enormous challenge to get them right. The central problem with which fishing laws need to deal is that technological advancements continually enable people (especially commercial fishers) to increase their ability to catch fish. This may be coupled with an increasing number of people fishing, or perhaps a relatively stable number of people fishing but changing their practice such as intensively fishing in one location. Human activities affecting fish are ever changing and, as a result, so too are fisheries laws. Past fishery collapses (such as cod stocks off the east coast of Canada in the early 1990s and orange roughy off the south-east coast of Australia in the mid-1980s) stand as a warning for what can happen if fishing is not properly regulated.

However, avoiding the collapse of stocks of target species is not the only objective for fisheries management. Although fisheries collapses do need to be avoided, if fisheries laws are too heavily skewed towards conservation, then fishing for a variety of purposes – commercial, leisure or cultural – may be severely curtailed or even stopped. Fisheries laws therefore need to strike a delicate balance between conservation and exploitation.

Since colonial times, the regulation of fishing in Australia has been achieved by developing rules in stand-alone fisheries legislation. While this remains the case, with the current principal federal fisheries legislation running close to 100 pages[1] (excluding all the detailed regulations issued under it), and state fisheries legislation sometimes even longer,[2] the shift to ecosystem-based fisheries management (discussed by Haward in this volume) has resulted in the emergence of environmental legislation as another body of regulation affecting fishing. This is most obviously evident in the requirements in the federal *Environment Protection and Biodiversity Conservation Act 1999* (Cth) for environmental assessments of fisheries management arrangements, as well as in the rules to protect threatened species and habitats and in the ability to declare marine parks. Other fields of law – from constitutional to criminal– also have relevance for fishing. Fisheries law is actually a complex of inter-related regimes.

Determining an appropriate level of fishing for a target species is a difficult enough task for fisheries managers, but the difficulty of devising rules for fishing is compounded when the focus is not just on the resilience of target species to a certain amount of fishing, but also on wider impacts of such fishing. For example, even if quotas are determined and strictly adhered to for a high value species that is easily caught in isolation from other fish, such as Southern bluefin tuna, questions arise as to the effect of this catch on other species which either prey on them or are preyed upon by them. No definitive answers can ever be determined for these questions, and it makes sense that a margin of precaution is used when setting catch limits. Wider issues that also need to be considered are the effects of particular fishing gear on marine habitats, such as trawl gear on benthic communities.

What this means is that, in addition to the difficulty of striking a balance between conservation and exploitation, numerous factors are at play which affect conservation values and exploitation needs, including the vocalised interests of different groups of fishers and other users of aquatic environments. This means that the creation of particular fisheries laws, be it a reduction in quota for commercial scallop fishers,

allowing dugong to be hunted by Indigenous people, or the introduction of licence fees for recreational saltwater fishing, can seriously upset people, and also result in litigation.

One of the more difficult challenges is to reduce conflict between the three categories of fishers (commercial, recreational and Indigenous). This conflict is sourced in different beliefs about their entitlements to fish in circumstances where there is increasing competition for fish.[3]

Some people perceive a palpable policy shift to support recreational fishing at the expense of commercial fishing.[4] In comparison with commercial fishing, recreational fishing supports more economic activity per fish caught – indeed, there can be great expenditure of time and effort for few or no fish! But this is not to deny that recreational fishing results in substantial amounts of catch (although catch amounts are more difficult to verify than for commercial fishing) and there is a demonstrated need for recreational fishing to be regulated. Recreational fishing is an increasingly popular pastime in Australia, particularly in coastal areas but also in lakes and rivers. Recreational fishing has become a significant income earner for many coastal towns, especially on the populated east coast, through visitor accommodation, gear and bait supplies, and fishing charters and tours. The growth in recreational fishing stands in contrast to the general decline in the last decade in the commercial fishing sector. Many commercial fishers have been encouraged to leave the industry through licence buy out processes and many others have found that they are no longer allowed to fish in some of their traditional fishing spots near their home ports.

The recognition and support for traditional Indigenous fishing is another controversial issue. The identification of Indigenous fishing rights within native title determinations, and the separate creation of traditional fishing rights within fishing or environmental legislation, or even under land rights legislation, has emerged as one of the most challenging areas for fisheries regulation, especially in cases where otherwise protected species such as turtles and dugong are permitted to be taken (see Morphy and Morphy in this volume).

The way in which fishing is regulated is that access to fisheries resources is controlled and only specified methods of fishing are permitted. Fisheries law has traditionally focused on 'input' controls which regulate the amount of fishing effort (eg, issuing a limited number of commercial fishing boat licences). There is now a shift to 'output' controls which, for example, place a limit on the number of fish that may be caught. Fisheries laws are numerous and varied, ranging from the setting of a minimum size limit for Yellow-eye mullet in Tasmania to complex law enforcement rights and procedures under international law which enable the chasing down and apprehension in international waters of foreign fishers suspected of unlawful fishing in Australian waters.

This article overviews the diverse nature of Australian fishing laws by focusing on two key facets of it: where they operate, and the challenges of guarding Australian fish from foreign poachers.

Which laws are where? Jurisdictional complexities and doubts about location

Fisheries laws extend from remote inland waters, including those which flow over private land, to 200 nautical miles (nm) from the coast.[5] In some more limited respects, Australian fishing laws also apply to Australians and Australian boats even beyond 200 nm on the high seas and even in waters of foreign countries, such as the prohibition on driftnet fishing.[6] A challenge for Australian fishers is to know which laws apply where.

This is because Australia comprises multiple fisheries jurisdictions and there is also uncertainty about the exact geographic reach of some laws.

Complicated constitutional arrangements

A federation requires a sharing of legislative responsibilities between the federal parliament and the parliaments of the sub-national jurisdictions. One of the important issues the drafters of the Australian constitution needed to decide in the 1890s was that of whether the Commonwealth or the states should have responsibility to regulate marine fishing, or whether there should be shared responsibility.

In 1890, Sir Henry Parkes (Premier of New South Wales and strident federalist) argued that a single federal jurisdiction would best. He said that 'the splendid sea-fisheries which Australia possesses' could

> under one law, one system of regulation and management, be developed to an extent which is never likely to be ascertained otherwise.

Such an arrangement would be quite different from the extant situation. The colonies had regulated marine fishing from their earliest days of self-government.[7] By the 1880s, most colonies had comprehensive fisheries laws.[8] These laws extended to a distance of three miles offshore. This three mile-wide area was assumed to be the 'territorial waters' of the colonies. It was also assumed that the colonies were not able to regulate activities outside their territory. Both of these assumptions would prove to be wrong.

The idea of having a single national jurisdiction was also advocated by our soon-to-be first Prime Minister, Edmund Barton, due to its practical simplicity. During the final constitution convention debates in Melbourne in 1898, he argued that a single jurisdiction would avoid the problem of fishing laws changing at three miles offshore. If this were to happen, he said,

> the unlucky fisherman who does not always know whether he is 2½ or 3 miles away will get into the pickle instead of his fish.

Unfortunately for Barton (as well as for generations of fishers), none of the other constitution convention delegates supported his proposal for a single marine fisheries jurisdiction. It was unthinkable that that the colonies, upon becoming states, would be denied the ability to regulate fishing in the three mile area because they had enjoyed, and had exercised, this legislative jurisdiction for generations. Further, it was not envisaged that there would be any inconsistencies between Commonwealth and state laws because it was assumed that the Commonwealth laws commencing at three miles offshore would simply harmonise with the adjacent state's laws within three miles.[9]

The final result was that the Australian constitution, in the curiously-worded s 51(x), authorises the Australian parliament to legislate with respect to 'Fisheries in Australian waters beyond territorial limits'.

Federal fisheries legislation, enacted from the 1950s, actually proceeded to differ from state laws operating inside three miles, with the result that many fishers have indeed found themselves 'in the pickle'. However, some constitutional lawyers have dined rather well off this particular pickle due to the emergence of further problems. There was growing doubt about the true operation of s 51(x), especially about where the 'territorial limits' lay. Was it three miles offshore, or was it at the low water mark?[10] The issue was brought to a head following the Whitlam Labor Government's enactment of the *Seas and Submerged Lands Act 1973* (Cth) which boldly asserted Commonwealth sovereignty in waters and the seabed beyond the low water mark. All states

immediately launched a legal challenge, arguing that the Commonwealth had no power to do what it had done.

The High Court reached its decision in the *Seas and Submerged Lands case* in 1975.[11] A majority of the court determined that the states' limit was at the low water mark. This was a landmark ruling. If the limit of the states was at the low water mark, rather than three miles offshore, then more than a century of combined colonial and state law expressed to operate in this area might be invalid, potentially leaving the area almost lawless. To counter this concern, the High Court also expressed its view that the states did in fact possess the ability the regulate matters outside their territory, thereby negating the long-held view that the states lacked extraterritorial legislative competence. In a fuller judgment in 1976, when this issue was squarely before it, the High Court formulated its nexus test.[12] Provided there is a 'sufficient connection' between the subject matter being regulated and the state in question, a state could regulate matters outside of its territory. This legislative competence would later be found to enable South Australia to regulate lobster fishing to a distance of 200 nm[13] but was insufficient to enable Western Australia to enact law concerning an historic shipwreck lying a little more than two miles offshore.[14]

The significance of the High Court's decisions is that, rather than having a situation intended by the drafters of the constitution whereby there would be two *separate* fisheries jurisdictions (the states having power only to three miles, whereupon the federal parliament has power) we now have a situation where we have two *overlapping* jurisdictions whereby the federal parliament has power to regulate fishing vast distances beyond the low water mark and the states can regulate fishing possibly beyond 200 nm offshore, provided there is a sufficient connection between the type of fishing and the state concerned. However, state fishing laws will be invalid if they are inconsistent with Commonwealth laws operating in the same area.[15]

Yet this is not the end of the matter. The decision in the *Seas and Submerged Lands case* was delivered just four days after the Fraser Coalition Government came to power. It immediately commenced an ambitious and untested process to 'sidestep' the High Court's decision.[16]

Utilising the previously unused s 51 (xxxviii) reference power in the constitution, in 1980 the Fraser Government ushered in a remarkable package of legislation (with mirror legislation enacted by the states) which essentially gave back to the states the three mile area that had been 'lost' to them. This was known as the Offshore Constitutional Settlement (OCS), although it did not actually change the constitutional position identified by the High Court.[17]

The OCS, which covered a number of fields including offshore petroleum, crimes at sea and shipping and navigation, enabled the states and the Northern Territory to exercise the power they traditionally enjoyed over the sea and seabed from the low water mark to three miles offshore. The OCS regime for fisheries took a more pragmatic approach. It enabled the creation of single fisheries jurisdictions depending on the nature of a particular fishery. For example, if a fishery was adjacent to one state, it could be managed by that state even if the fishery extended beyond three miles. However, a fishery which was adjacent to two or more states would be managed by the Commonwealth. The states have also maintained jurisdiction over recreational fishing, to a distance of 200 nm or possibly beyond.[18]

The OCS anticipated that regimes for particular fisheries would be determined in agreements between states and the Commonwealth – cooperative federalism at its finest. The status quo would continue for fisheries not brought under a specific

agreement. This would mean that some fisheries would be managed by states within three miles but by the Commonwealth beyond this point. Surprisingly, some agreements appear to undermine the one-jurisdiction ideal behind the OCS. For example, in 1986 an agreement was reached between the Commonwealth, Victoria and Tasmania concerning the Bass Strait Scallop Fishery. The result was that the Commonwealth maintained responsibility for the central portion of Bass Strait, with both Victoria and Tasmania having responsibility within 20 miles of their shores. An even more complex arrangement was reached between the Commonwealth and New South Wales in 1991. In areas north of Sydney, New South Wales retained control over most of the commercial fisheries beyond three miles to a new distance determined by the 4,000 metre depth contour (a very squiggly line Iocated between 50 and 80 miles offshore). Thus the geographic extent of certain fisheries laws depend not upon a specified distance from shore but upon the depth of the water.

The overlapping nature of the law means that, for example, at one point 20 miles offshore of New South Wales, recreational fishing and commercial fishing for species such as Australian salmon are governed by New South Wales law, yet commercial tuna fishing is regulated by the Commonwealth.

As a final note on the fisheries power in the constitution, it appears that it is now redundant. This is because the expansive 'geographic externality' view of the s 51(xxix) external affairs power in the constitution currently favoured by the High Court means that this power can be used to support almost any Commonwealth law that operates in areas outside Australia. This means that the Commonwealth has almost unfettered ability to regulate fishing below the low water mark. The reach of the Commonwealth's power is not limited by the vague expression 'Australian waters' found in the fisheries power. Sufficient authority for the Commonwealth to regulate any marine fishing, no matter what distance from Australia, is found in the external affairs power.

Location

All laws need to be enforceable for them to be effective. A complication for many fisheries laws is that they need to be enforceable at remote locations where surveillance of fishing is difficult, be it ensuring that freshwater anglers in remote lakes do not use undersized fish as bait, or that recreational fishing is not conducted from any foreign ship (including commercial vessels such as bulk carriers) whenever they are transiting, or at an anchor, in Australian waters. Two issues arise here: how do the regulations specify the geographic range of particular laws, and how can fishers (or enforcement officers) know exactly where they are?

How are geographic boundaries of fisheries laws defined?

All laws regulating fishing need to operate in defined geographic areas. For commercial fishing, for example, the outer limit of the laws may be specified by coordinates (to the nearest second of latitude and longitude[19]) or by a certain distance from a permanent feature – such as the coast. These coordinates can be placed on charts and issued to fishers who, if in possession of GPS (global positioning system) technology, can fairly accurately determine where they are.[20] However, determining the exact location of the reference point from which the laws extend may be difficult, such as the exact location of the high water mark.

Fisheries laws operating in estuaries may have their outer limit defined as imaginary lines drawn between coastal features, such as headlands. This is the case, for example, in New South Wales, where an imaginary line is drawn across a coastal indentation between the 'extremity' of two features. In some cases, the legal definition

of a boundary may not equate with common understandings. For example, in 2004 in the Northern Territory, three barramundi fishers were convicted of fishing in an area not authorised by their licences, namely at a location landwards of a 'river mouth'.[21] The prosecution established that they were fishing more than 500 metres landwards of this point. Although dictionaries typically define rivers to be natural streams of water flowing in a definite course or channel (and thus exclude tidal waters), the regulation in question adopted a broader definition of 'river' to include 'tidal arms'. This meant that the river mouth, for the purpose of this regulation, was an imaginary line drawn contiguous with the mean low water mark at both sides of the coastal indentation. Such a line is of course exceedingly difficult to identify at any time of the day other than at the point of the low tide, especially in areas in northern Australia where there are high tidal ranges and gently sloping shores. It may also be kilometres seaward of where the dictionary definition would locate the river mouth.

Definitional problems also occur with respect to inland fishing regulations, such as locating the seaward extremity of freshwater. This is usually expressed to be the extent of tidal influence, but may also be expressed more helpfully as areas downstream of a fixed feature such as a bridge, or between two clearly identifiable points, such as where an imaginary straight line is drawn between white posts located on opposite banks. The exact geographic reach of other laws cannot be known until individual cases are litigated, such as determining at what point a person will have committed the offence of possessing prohibited fishing equipment while 'adjacent' to water.

Guarding against illegal foreign fishing

Australian fisheries laws not only need to regulate fishing by Australians, they also need to ensure that foreigners do not illegally fish in Australian waters.

Prior to the acceptance under customary international law in the late 1970s of the extended fisheries jurisdiction concept (subsequently codified in the United Nations Convention on the Law of the Sea 1982 (LOSC) as the Exclusive Economic Zone (EEZ)), coastal states could only exclude foreign fishers from the (then) three mile wide area of their territorial sea. The territorial sea was extended to 12 miles following the entry into force of LOSC in 1994. Beyond this point, to a maximum distance where this is possible of 200 nm from the coast, coastal states have preferential fishing rights in their EEZ. Since the mid-1990s, no foreign fishing has been permitted in the Australian EEZ, with the limited exception of Indonesian traditional fishing in a designated area near Ashmore Reef in the Timor Sea and some traditional fishing by PNG residents in some areas of the Torres Strait.

Nevertheless, Australia faces the constant threat of illegal fishing by foreign fishers in its waters. These threats have different characteristics depending on the area in which the fishing occurs and the type of fishing concerned, yet they all share similar characteristics in terms of the legal measures Australia can use to deter and apprehend foreign fishers. The main areas where threats exist are in the north and south.[22]

Northern waters

By far the most instances of illegal foreign fishing occur in Australia's northern waters. These are almost without exception by Indonesian fishers, often targeting shark (for their fins only). There have been hundreds of incursions in the last decade, although it appears that the bolstering of Australia's surveillance and enforcement operations is at least partially responsible for a decline in incursions since 2004.

A complication in some of Australia's northern waters is that, due to technical boundary issues, the outer limit of Australia's fishing zone does not always coincide with the

outer limit of its jurisdiction over the seabed resources of its continental shelf, which may extend further than its fisheries jurisdiction. This has resulted in a situation where Indonesian fishers are allowed to fish for free-swimming fish above Australia's continental shelf where this is outside Australia's fishing zone, but they are not allowed to take seabed resources, such as trepang (sea cucumber) and trochus (sea snail) shells.[23]

Part of Australia's response to the logistical challenges of holding large numbers of arrested persons in remote northern regions has been to amend regulations so that detained foreign fishers can be treated on the same basis and under the same conditions as illegal immigrants. This is despite the fact that most of the 'fisheries' detainees have not actually chosen to enter Australia's immigration zone, but rather were brought within the zone by Australian officers after being arrested.[24] It should be borne in mind that, under international law, foreigners (including fishers) enjoy complete freedom of navigation in Australia's EEZ (subject to requirements such as not fishing, and ensuring that fishing equipment is stowed), and also enjoy the right of innocent passage within Australia's territorial sea.

Southern waters

More high-tech illegal fishing has occurred since the mid-1990s in remote Australian waters in the sub-Antarctic, such as around Heard and McDonald Islands (over 4,000 km south west of Perth) and Macquarie Island (over 1,000 km south of Tasmania). The main target species here is the prized Patagonian toothfish. Such fishing tends to be from large commercial vessels registered in 'flag of convenience' countries (eg, Belize, Cambodia and Panama) which exert little or no influence over their operations. The sub-Antarctic waters provide rich pickings. In just a few weeks of fishing, the value of fish caught may exceed the capital value of the vessel from which they were taken.

Australia has arrested a number of vessels in this area. Two arrests followed remarkable 'hot pursuits'. These were the Togo-registered *South Tomi* in 2001 and the Uruguayan-registered *Viarsa 1* in 2003. The *South Tomi* was arrested after the longest hot pursuit in history (14 days, 3,300 nm). This was eclipsed by the arrest of the *Viarsa 1* following a hot pursuit of 21 days covering 3,900 nm.[25] The arrest of both vessels was effected only after assistance was rendered by South Africa.[26]

The Fisheries Minister at the time, Senator Ian Macdonald, proudly declared that these seizures were a warning to the pirates and poachers who invade Australia's waters to fish illegally 'that Australia will pursue them to the end of the earth to stamp out this illegal activity'. However, the fact that the vessels were able to flee and not be brought to heel without the assistance of other countries actually served to highlight the inadequacies of Australia's law enforcement capabilities in the region. This has since been rectified, in part by the use of the ice-strengthened and armed 105 metre *Oceanic Viking* to regularly patrol those waters, as well as massive increases in penalties and the use of satellite surveillance.[27]

What happens to the boats?

As in many other countries, Australian law stipulates that a foreign vessel used for a fisheries offence in Australia is forfeited to Australia. However, unlike any other country, Australian law provides that the forfeiture takes place at the moment of the commission of the acts constituting the offence, rather than when a conviction is recorded (which is normally many months later).[28] The remarkable aspect of this law is that it means that Australia could avoid the obligations it has under international law with respect to the rights of a foreign vessel which it suspects had previously been used to fish illegally in Australian waters, such as not conducting a hot pursuit of it in

accordance with international rules. This is because, by virtue of Australian law, the legal title to the vessel would have passed to Australia some time earlier and thus Australia would simply be seizing its own vessel. This provision, for example, legitimised the seizure in 2005 of a Cambodian vessel on the high seas.[29] While this law would not withstand a challenge in a relevant international court (such as the International Tribunal for the Law of the Sea), it has withstood a constitutional challenge[30] and is unassailable as a matter of Australian law. Although the operation of this law patently is inconsistent with international law, it also is a reflection of the difficulty of modernising the rules of international law, especially in circumstances such as this where the problem of large scale illegal foreign fishing only emerged after the international rules on enforcement actions against foreign vessels were settled.

The operation of the automatic forfeiture provision means that all vessels seized by Australia on suspicion of being used for illegal foreign fishing are dealt with by Australia as it sees fit. The large vessels apprehended in southern waters may be sold (following a tender process), or sunk as dive wrecks. The much smaller wooden vessels seized in northern waters typically are burned (for safety or quarantine reasons).[31]

Conclusion

Australian fisheries laws will become ever more detailed and complex. The romantic idea of the 'freedom to fish', where fishers can get away from it all, is now just an historic notion. Even recreational fishing in near shore areas is something for which, in Victoria and New South Wales, you must first get a licence.[32] In 2008, the High Court even sounded the death knell for the public right to fish, an ancient common law right sourced in the Magna Carta.[33] The ever increasing detail of fisheries laws means that fishers (recreational, Indigenous and especially commercial) should thoroughly acquaint themselves with the relevant rules before venturing out to fish. But simply going to the local office of your fisheries department and asking what laws you need to know will not save you if you are given incomplete information and, as a result of that, you inadvertently commit an offence. This was the case in 2004 for an unlucky Western Australian rock lobster fisherman, who, the High Court confirmed, must be convicted for his offence due to the fundamental rule that ignorance of the law is no excuse.[34]

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[1] *Fisheries Management Act 1991* (Cth).

[2] Eg, *Fisheries Management Act 1994* (NSW).

[3] There has been a concerted effort in some jurisdictions to formalise the allocation of fishing entitlements to these sectors in order to reduce conflict. See, eg, Western Australia's 2004 'Integrated Fisheries Management' policy.

[4] The most obvious piece of evidence for this is the recent closure of many near shore areas to commercial fishing. This includes a large area adjacent to Perth and 30 New South Wales estuaries, including Botany Bay, which are now 'recreational fishing havens'. In some other areas, commercial fishing is restricted rather than prohibited. For example, commercial fishing in Port Phillip Bay, Victoria is now limited to eels and bait, and commercial fishing is restricted to particular zones within the three mile wide, 100 km long Batemans Marine Park on the south coast of New South Wales (although all trawling and longline fishing is prohibited throughout the park). Other areas may be closed to commercial fishing but for reasons other than prioritising recreational fishing or conserving biodiversity. For example, the closure in 2006 of Sydney Harbour to commercial fishing was prompted by increased levels of dioxins in fish and crustaceans, especially in areas west of the Sydney Harbour Bridge.

[5] This is the outer limit of Australia's Exclusive Economic Zone.

[6] *Fisheries Management Act 1991* (Cth) s 13.

[7] *Oyster Fishery Act 1853* (Tas), *Oyster Fisheries Act 1853* (SA), *An Act for the Protection of the Fisheries of Victoria 1859* (Vic), *Fisheries Act 1865* (NSW).

[8] Eg, *Fisheries Act 1873* (Vic), *Fisheries Act 1881* (NSW).

[9] This was indeed the practice from 1885 when the Imperial Parliament established the quasi-federal organisation called the 'Federal Council of Australasia'. The council enacted two pieces of fisheries legislation in the late 1880s which simply extended the operation of Queensland and Western Australian pearl shell and sea cucumber legislation beyond three miles.

[10] Attention was given to the issue following the publication in 1958 of an influential article by DP O'Connell in the *British Year Book of International Law*. He argued that the low water mark was the limit of the states' territory, based on the 1876 case of *R v Keyn*. This view was debated at the time, most notably by Enid Campbell in an article in the *Tasmania Law Review* in 1960.

[11] *New South Wales v Commonwealth* (1975) 135 CLR 337.

[12] *Pearce v Florenca* (1976) 135 CLR 507.

[13] *Port MacDonnell Professional Fishermen's Association Inc v South Australia* (1989) 168 CLR 340.

[14] *Robinson v Western Australian Museum* (1977) 138 CLR 283.

[15] Section 109 of the Australian Constitution provides that 'When a law of a State is inconsistent with a law of the Commonwealth, the latter shall prevail, and the former shall, to the extent of the inconsistency, be invalid.' For the application of s 109 to fisheries, see *Raptis and Son v South Australia* (1977) 138 CLR 346 and *Radar Holdings Pty Ltd v State of Western Australia* [2004] WASC 251.

[16] Haward, M (1989). 'The Australian Offshore Constitutional Settlement', *Marine Policy*, 13, 4: 334-348.

[17] The OCS comprises 14 pieces of legislation. The most important are the *Coastal Waters (State Powers) Act 1980* (Cth) and the *Coastal Waters (State Title) Act 1980* (Cth). The legislation came into effect in 1983.

[18] All states other than Queensland declare that their recreational fisheries laws extend to any waters to which their legislative powers extend for those activities. Queensland recreational fishing laws are declared to extend only to 200 nm.

[19] A second of latitude is approximately 30 metres. Seconds of longitude vary depending on the distance from the equator. In Tasmania, a second of longitude is approximately 20 metres.

[20] Note, however, that different jurisdictions use different datum, such as the World Geodetic System, Australian Geodetic Datum or the Australian Map Grid. Persons with GPS

technology may need to convert between the datum used in their GPS to the datum used for the regulation. This is because identical coordinates referenced to different datums will actually be different points on the surface of the earth. Conversely, the exact same location on the surface of the earth will have different coordinates where different datums are used.

[21] *Perry v Simlesa* (2004) 142 A Crim R 282.

[22] A lesser threat exists in Australia's eastern waters. These are home to some high value pelagic fish, including various species of tuna. Waters immediately adjacent to Australia's EEZ off its east coast, including the area around Lord Howe Island, are regularly fished by longline vessels, such as from Japan and Taiwan. There have been relatively few instances of suspected or illegal foreign fishing in this area in the last decade.

[23] Due to complications about these arrangements, in 2008 there were a number of aquittals of Indonesian fishermen prosecuted for illegal fishing in these areas. Eg, *Gap v Hansen; Arifin v Hansen* [2008] NTSC 34.

[24] Nevertheless, there have been quite a few cases where such fishers come ashore in Australia, such as in remote areas in the Gulf of Carpentaria, in order to get fresh water and other supplies. Such landings of course raise immigration concerns as well as quarantine issues.

[25] It should be noted that in 2005 all of the five *Viarsa 1* crew members charged with fisheries offences were acquitted in a jury trial in the Western Australian District Court.

[26] In the case of the *Viarsa 1*, assistance was also rendered by a United Kingdom vessel.

[27] See Gullett, W and Schofield, C (2007). 'Pushing the Limits of the Law of the Sea Convention: Australian and French Cooperative Surveillance and Enforcement in the Southern Ocean', *International Journal of Marine and Coastal Law*, 22, 4: 545-583.

[28] *Fisheries Management Act 1991* (Cth) s 106A.

[29] No hot pursuit was undertaken and the flag state only authorised Australia to board and inspect the vessel, but not to seize it: *R v Amoedo* [2006] NSWDC 187.

[30] *Olbers v Commonwealth (No 4)* (2004) 136 FCR 67; *Olbers v Commonwealth* [2005] HCA Trans 228.

[31] See generally Stacey, N (2007). *Boats to Burn: Bajo Fishing Activity in the Australian Fishing Zone*, ANU EPress.

[32] There are some exceptions, such as children and aged persons, although the exemptions in New South Wales and Victoria are not identical. More limited saltwater recreational fishing licences are required in Western Australia and Tasmania.

[33] *Northern Territory of Australia v Arnhem Land Aboriginal Land Trust* (2008) 82 ALJR 1099.

[34] *Ostrowski v Palmer* (2004) 218 CLR 493. See Gullett, W (2004) 'Relying on Fishy Advice: The Ostrowski Decision', *Environmental and Planning Law Journal*, 21, 4: 245-248.

State, Market and Community: Managing Australia's Fisheries

Marcus Haward

Introduction

Australia has a significant maritime domain, the fourth largest maritime jurisdiction in the world, with an Exclusive Economic Zone (EEZ) and Extended Continental Shelf (ECS) of 13.6 million square kilometres (nearly twice the area of the continental land mass)[1] from tropical to Antarctic waters. Australian fisheries are traditionally small-scale operations, and Australian fisheries are small relative to major fishing powers, yet they remain important to the Australian economy. The Australian industry is diverse, encompassing small owner-operator 'bay and inlet' fisheries through to offshore and 'distant water' operations, the latter operating in the Southern, Pacific and Indian Oceans. The diversity of operations, and the often widely differing interests that develop as a result, are important factors in shaping policy.

The Australian public is becoming increasingly aware of this nation's responsibility for management of the fishery resources. Of 96 Australian fisheries, 16 are either overfished or fully fished, 28 not and the state of 52 species uncertain.[2] The large number of species with 'uncertain' status in the most recent assessment is a concern.[3] In most cases though public attention is drawn to these issues by the scarcity of fish, high prices in markets or retail outlets or publicity and conflict surrounding closures or restrictions in different fisheries. These outcomes are the public face of fisheries management. The less public face of fisheries management – institutional arrangements, the impact of legislative and regulatory obligations on government officials (and increasingly on industry), the relationship between science and management and industry government relations – is given little public or scholarly attention.[4]

Australian fisheries management is widely recognised for the strengths of its world-class science, strong administrative arrangements and innovative use of management tools and techniques. Notwithstanding these factors, fisheries management is fraught with challenges and uncertainties and often conflict ridden. Uncertainties arise in stock assessments due to inherent challenges in measuring recruitment as well as accurately determining fishing mortality, besides the difficulties in determining causes of changes in stock abundance. Conflicts include those that are directly fishery based – those between regulators and the regulated, or between commercial fishers and recreational interests. Other conflicts such as those arising from the challenges of accommodating different values and interests, for example those of Australian Indigenous peoples, or those of the environmental movement can be important. The increasing level of external scrutiny (from non governmental organisations or government agencies outside the fisheries portfolio) over Australian fisheries is another factor in shaping the politics around fisheries management.[5]

The policy context for Australian fisheries management: state, market and community

Regulation is the most common form of government (state) action in fisheries. Regulatory failure in fisheries, as elsewhere, has encouraged development of alternative instruments and approaches, most clearly in the use of market-based approaches or economic instruments. These market-based tools are diverse and include transferable quotas in fisheries, fees and charges for resource users, and the external certification of products and processes. More broadly based community forms of governance – fisheries co-management for example – are also important and have

been promoted as alternative means to address regulatory failure. It is important to note that neither market nor community governance, while promoted as means to overcome such failure efficiently, are a complete replacement for regulation, indeed effective market or community approaches are based on appropriate legislative and regulatory instruments. Australian fisheries management systems, while increasingly supporting cooperative management arrangements with fisheries, have regulatory-based compliance mechanisms.

Common pool resources have traditionally relied on formal rules – usually through legislation or regulatory instruments – to resolve the possibility of increased effort leading to a 'tragedy of the commons'. More recently, market type instruments have been introduced with the development of rights-based fisheries management. The use of tradeable rights and the creation of quasi-market approaches by such 'trades' in fisheries management has provided an alternative paradigm for both fishers and fisheries managers. In its extreme form this paradigm tackles the 'tragedy of the commons' by creating private property regimes, based on what have been termed 'privatarian' approaches to common pool resources. The development of individual transferable quotas (ITQs) creates quasi-property rights, provides an opportunity to utilise market mechanisms and allows the market to determine the value of the quota or its component 'units'.

Management of Australian fisheries involves both the Commonwealth and state and Northern Territory governments (see Gullett this volume), under the interestingly named Offshore Constitutional Settlement (OCS) that established complementary legislation – the State Powers and State Titles Acts – enacted by both the Commonwealth and the states/Northern Territory. These instruments formalised the states and the Northern Territory managing fisheries from low water mark to three-nautical miles offshore.[6] This division of responsibility is then varied by OCS arrangements that, for example can enable a state to manage a fishery from low water mark to the edge of Australia's fisheries jurisdiction, or conversely for the Commonwealth to manage a fishery within this jurisdiction. These arrangements are usually contained in various fisheries laws or regulations in Australia.[7] The question of jurisdiction is one of a number of factors that influence the management of Australia's fisheries. The interaction between these factors contributes to a particularly complex, yet relatively under-examined, policy environment. 'Management'– actions undertaken by the state to develop and/or implement measures to regulate the fishery – is itself an important element, overlaying the 'conservation' of stocks; 'community' interest; and the 'economic' performance of fishers and the fishery. At the same time a decentralised and diverse industry has often found it difficult to organise and maintain effective industry representation, particularly at the national level. These elements help shape fisheries management and reinforce the importance of recognising the interaction between state, market and community in Australian fisheries.

Reforms enacted in the early 1990s provided the basis of major legislative and administrative change governing Australian (particularly Commonwealth) fisheries.

These arrangements, contained within the *Fisheries Administration Act 1991* and the *Fisheries Management Act 1991*, established the Australian Fisheries Management Authority (AFMA) on 3 February 1992. AFMA, initially a statutory authority, was re-established (following the government's implementation of the recommendations of the Uhrig Review on statutory authorities in 2004) in 2008 as a commission, charged with management of Commonwealth fisheries. AFMA is committed to developing partnerships in managing fisheries, most notably through formalising industry input into management through Management Advisory Committees (MACs) within

Commonwealth fisheries. The MACs serve several purposes; they provide a means for 'co-management' of the fishery, increase transparency of decision-making and increase the efficiency and effectiveness of industry-government relations. Over time the MAC model has broadened to include other stakeholders such as environmental groups. While the MACs have broadened the range of stakeholder representation they have been criticised for their industry orientation. The MAC structure is replicated (sometimes in slightly different forms) in fisheries under state jurisdiction. MACs are supported by Resource Assessment Groups (RAGs) made up of scientists, fishery managers and industry, providing a forum for discussion of stock assessments including input of independent scientific advice. RAGs report to the MACs but also directly to the AFMA Commission so that it can see the scientific advice on which decisions are made.[8]

The reforms of administrative arrangements in the 1990s led to major changes in management tools and instruments. Shifts from input controls (limiting licenses, boats or gear, or season) to output controls (total allowable catch – TAC – and spell out - ITQs) marked a revolution in fisheries management, and underlined the shift towards economic instruments. It has been Australian government policy that ITQs be the preferred management tool in its fisheries since 1990, with many state fisheries also adopting quota management systems. While such systems are seen to be efficient and effective in controlling fishing effort, determining (and where necessary adjusting) an appropriate TAC, from which the ITQ is allocated, is a critical task. Economic instruments have also increased in salience through policy to recover costs of management from participants in fisheries through licence fees and levies. Industry has been responsible for payments of 100 per cent of attributed costs of management of Commonwealth fisheries from 1994-95.

Community, as the third element of the policy framework, can be more problematic.

Defining and identifying 'community' becomes a critical element, as the concept is subject to many definitions and uses – from the substantive to the symbolic. Australian fisheries embody these complexities. Fishing is clearly an activity that defines and sustains a community – a major national study indicates that at least 3.36 million Australians over five undertook at least one fishing trip in the year prior to the study, a participation rate of almost 20 per cent.[9] Community can also be defined in the sense of shared interests and values, giving rise to different fishing 'communities', and in doing so provides a rich area of exploration. These communities may reinforce, or cut across, existing cleavages. Traditional fishing activities by Australia's Indigenous peoples, for example, raise important management issues including access to resources, and may provide direct conflicts with commercial or recreational fishing interests, particularly in relation to allocation of access rights and catches.

Ecologically sustainable development and ecosystem-based fisheries management: promise and practice

Improving the sustainability of Australian fisheries is mandated by legislative requirements that focus on principles of Ecologically Sustainable Development (ESD). ESD developed as the Australian government's response to the challenges posed by the Brundtland Commission's report *Our Common Future* in 1987.

ESD – an Australian variant of the Brundtland Commission's definition of sustainable development – aims to provide a framework in which economic and resources-use decision-making is integrated with social and ecological or environmental concerns; commonly known as the 'triple bottom line'. Key operational principles underpinning the use of sustainable development as a driver for fisheries management at

international and national levels developed from outcomes of the United Nations Conference on Environment and Development (UNCED), particularly the Rio Declaration, held in 1992, and the World Summit on Sustainable Development (WSSD) in 2002. These principles include the precautionary approach, intergenerational equity, polluter pays, public participation, and Indigenous rights. Agenda 21 Chapter 17, dealing with oceans and coasts (including a coastal state's territorial waters and EEZ), provided an ambitious action plan which emphasised the requirement for 'new approaches to marine and coastal area management and development at the national, subregional, regional, and global levels, approaches that are integrated in content and are precautionary and anticipatory in ambit.'

While the direct implementation of Agenda 21 has been patchy around the world,[10] it has encouraged an increased focus on the precautionary and ecosystem-based approaches to management. In Australia, too, legislative reforms and development and implementation of initiatives such as Australia's Oceans Policy, have reinforced requirements for fisheries policy and management to orient towards an ecosystem-based approach.

The reach of Commonwealth environmental legislation on fisheries management has been one of the more significant change drivers affecting Australian fisheries policy and management. This is illustrated by the introduction of 'strategic assessment' of fisheries managed under Commonwealth legislation and state export fisheries, by the Department of Environment, Water, Heritage and the Arts (DEWHA). This process involves the assessment of fisheries, consideration of fishing impacts on protected marine species and export approval under the *Environment Protection and Biodiversity Conservation Act 1999* (EPBC Act).[11] This assessment of fisheries is made against a standard set by indicators that follow a similar form to the 'principles and criteria' established by the Marine Stewardship Council (see below).

The strategic assessments for Australian fisheries, together with greater intervention by the Australian government through a 'Ministerial Direction' have focused attention on stock rebuilding, the cessation of overfishing and recovery of overfished stocks. The Ministerial Direction followed by a A$220 million structural adjustment package to address overfishing, including A$150 million for a buyout of fishing concessions, provided for the first time a means of reducing actual and latent capacity and effort in fisheries where there has been overfishing. The *Securing our Fishing Future* package[12] was announced in November 2005, and flagged the announcement of the Ministerial Direction in December 2005.

The Ministerial Direction was blunt: 'the Australian Government considers that decisive action is needed immediately to halt overfishing and to create the conditions that will give overfished stocks a chance to recover to an acceptable level in the near future.'[13] Most importantly the Ministerial Direction was a statement of the acceptable level of risk the government was willing to take in the utilisation of Commonwealth fisheries resources.

The Direction emphasised the need to take a more strategic approach to management of Commonwealth fisheries, including developing a harvest strategy for Commonwealth fisheries that addressed biomass targets in management.

The Ministerial direction noted, *inter alia*, that:

1. … AFMA must take immediate action in all Commonwealth fisheries to:

   a. cease overfishing and recover overfished stocks to levels that will ensure long term sustainability and productivity;

b. avoid further species from becoming overfished in the short and long term; and

c. manage the broader environmental impacts of fishing, including on threatened species or those otherwise protected under the Environment Protection and Biodiversity Conservation Act 1999.

2. AFMA must take a more strategic, science-based approach to setting total allowable catch and/or effort levels in Commonwealth fisheries, consistent with a world's best practice Commonwealth Harvest Strategy Policy that has the objectives of managing fish stocks sustainably and profitably, putting an end to overfishing, and ensuring that currently overfished stocks are rebuilt within reasonable timeframes.[14]

The development of a harvest strategy, explicitly identifying 'target' and 'limit' reference points related to biomass, is also a significant development. A harvest strategy includes a process for monitoring and conducting assessments of the fishery – both biological and economic – and includes rules that control intensity of fishing effort, linked back to biological and economic conditions of the fishery. While traditional approaches to fishery management focus on the first element, a harvest strategy approach directly links the first element to the second, with the 'harvest control rules' being established as part of a formal management procedure.[15] Moving to arrangements that set limits and targets provides a more 'precautionary' approach but may also re-invigorate debates between fishers, scientists and managers, particularly if the introduction of the harvest strategy leads to a decrease in the total allowable catch of the fishery. AFMA is responsible for implementing the harvest strategy framework, introduced in 2008 and to be reviewed in 2009.

The Australian fishing industry has generally accepted the need to improve its environmental credentials. Australian fishers have been active in development of environmentally friendly fishing gear including work on turtle-exclusion devices (TEDs) in prawn fisheries, and the development of mitigation devices and practices to avoid incidental by-catch of seabirds such as albatross and petrels in long-line fisheries.

Ecosystem based fisheries management (EBFM) moved away from a focus on target stock to incorporate impacts of fishing on the marine environment. This approach includes a focus on the predator – prey relationships of the target stock and attempts to incorporate these relationships in stock assessment models and catch limits. In addition EBFM addresses issues of by-product and by-catch species (species secondary to the target species landed in the fishing operations). By-product species are generally those that can be sold or marketed, while by-catch refers to those species (fish and non-fish) that are incidental to the fishing operation and as a result are discarded. By-catch species can include threatened, endangered and protected non-fish species (eg, turtles in prawn fisheries, seabirds in long-line fisheries).

Implementation of EBFM poses challenges. While ESD has been a core policy parameter for many years,[16] implementing all elements of a triple bottom line approach is difficult. AFMA has faced criticism that it has focused on the economic performance of fisheries over environment or broader social considerations. Commitment to EBFM has seen legislative requirements towards ESD reinforced, and development of new approaches, through for example harvest strategies, to emphasise ecological sustainability. Core elements of an EBFM approach such as biomass target and limit reference points are major initiatives but translating these initiatives into practice is complex. Regulatory instruments are important here, but community-based and market approaches are increasingly salient. Public support for sustainable fisheries is high,

and demands for independent assessments of such sustainability, as measured through consumer support for eco-labelling, has increased.

Certification and eco-labelling: Australia and the Marine Stewardship Council initiative

Certification engages with and expands fisheries 'politics'. External scrutiny of fisheries invites a range of responses from support to scepticism and/or opposition, and this in turn creates its own politics. Analysis of certification in Australian fisheries highlights these dynamics, and the critical impacts of key institutions and stakeholders in shaping debate. At the same time this underlines the importance of non-governmental actors in developing and implementing market–based tools such as certification. Despite Australian industry's commitment to improving its environmental performance, activities and development of management arrangements directed at reductions in by-catch, development of external third party certification, or even self- referencing systems has been relatively slow.

It is important to recognise that certification can involve a number of different approaches. These include the use of place and location, the familiar first party 'appellation controlé' – name or place of origin, through to third party labels separate from the producer or marketer. In addition certification may be narrow or broad, addressing single points of a product life cycle, or processes certified under the widely used Environment Management Systems (EMS) standard from the International Organization for Standardization (ISO).[17]

The Marine Stewardship Council (MSC) is an initiative to certify the sustainable performance of fisheries on a global scale and developed through a shared vision and objective for the long-term viability of fish stocks between a major environmental non-government organisation and a major corporate entity, given impetus by concern over the state of the world capture fisheries. It was established in 1996 through the joint efforts of the environmental non-governmental organisation the World Wide Fund for Nature (WWF) and Unilever, one of the world's largest consumer product conglomerates. The MSC's two founding and supporting organisations no longer finance the organisation which is now supported by the funding from donations from foundations, charities and other donors, as well as generating income through its label.

The MSC, as an independent authority, has created a standard (the 'principles and criteria' – see following) for the certification of sustainable fisheries. The heart of the MSC process is the certification of 'sustainable fisheries' as defined by meeting a standard set by what are termed the Principles and Criteria for Sustainable Fishing and linking this certification to a label that influences consumer behaviour.

The generic Principles and Criteria cover target and ecological considerations as well as management and governance issues. The Principles and Criteria are sub-divided into 23 specific criteria that form the basis of indicators and scoring guides. The Principles include:

Principle 1:

A fishery must be conducted in a manner that does not lead to over-fishing or depletion of the exploited populations and, for those populations that are depleted, the fishery must be conducted in a manner that demonstrably leads to their recovery.

Principle 2:

> Fishing operations should allow for the maintenance of the structure, productivity, function and diversity of the ecosystem (including habitat and associated dependent and ecologically related species) on which the fishery depends.
>
> Principle 3:
>
> The fishery is subject to an effective management system that respects local, national and international laws and standards and incorporates institutional and operational frameworks that require use of the resource to be responsible and sustainable.[18]

While Australian governments have been reluctant to formally endorse the MSC as a standard, due in part to the problems that such endorsement may have in relation to World Trade Organisation rules relating to trade in fisheries products,[19] and the implications of a standard set by a non-government body, the initiative has had a significant impact within Australia. As noted, MSC principles and criteria have influenced the format of the Australian Government's Strategic Assessment applied to Australian fisheries, although, the extent to which this assessment has set a rigorous standard has been questioned.

Australia's engagement with the MSC is significant in other dimensions. Australians have been active in key MSC institutions. Murray France, an Australian industry leader, was foundation, and longstanding, member of the MSC Board. Keith Sainsbury, a fisheries scientist formerly with Australian premier government science institution CSIRO, is currently Vice Chair of the MSC Board and Chair of MSC Technical Advisory Board and an AFMA Commissioner. Annie Jarrett, a member of MSC Board and Co–chair of the MSC Stakeholder Council is also the Executive Officer of the Northern Prawn Fishery Management Advisory Committee (NORMAC) and chief executive officer of the Northern Prawn Fishery Industry Council. Australian fisheries scientists have served on certification panels or have provided technical advice and support to the MSC certification process. Tony Smith, a fisheries scientist at CSIRO, for example, had a major role in the assessment of the Western Rock Lobster fishery. Alistair Hobday, also with CSIRO and formerly with University of Tasmania, has worked on risk assessment models central to the application of the MSC standard to data-poor fisheries.

Australia is also the location of a MSC regional office and Duncan Leadbitter as local representative has been active in promoting eco-labelling and the MSC throughout Australasia and the Asia-Pacific, leading to an increased presence of MSC in Japan. One important and direct result was the first certification of MSC fisheries in Japan, with the important impact of extending the reach of the MSC into one of the world's major fisheries markets. At the same time this work of the MSC's Asia-Pacific group, based initially in Australia, has done much to extend MSC presence and reduce the perception of the Euro-centric orientation of the organisation.

It is important to note that the MSC does not directly perform the certification. To remain independent, the MSC accredits a qualified certification organisation and trains them in the methodology. In the formal assessment, the certification team translates the Principles and Criteria into a set of indicators and scoring guides based on the conditions in the client fishery. As an accreditation body, the MSC must be impartial and independent. Its principles and criteria can be applied to any fishery with the size, scale, type, location, intensity of the fishery, the resources, and ecosystem effects considered in every certification. This includes the fisheries of developed and developing nations and an approach that does not discriminate towards market access.

Despite the early support for the MSC standard in the Western Rock Lobster fishery, driven clearly by support from Murray France, the MSC experience in Australian is mixed. Australia has (as of March 2009) three MSC certified fisheries – Western Rock Lobster; Australian Mackerel Ice Fish; and the South Australian Lakes and Coorong fishery.

Australian industry undertook the first fishery assessment under the MSC process with the certification of the Western Rock Lobster Fishery in 2001.The MSC certification process and outcome for the western rock lobster fishery was important for two reasons. As noted above it was the first test case for the MSC assessment methodology and much was learned in the process as applied to a large and commercially significant fishery.[20] The second factor was the use of MSC certification as further support for market access into Europe that had proved challenging to Australian producers.

With the downturn in exports to Asian markets in the aftermath of the Asian economic meltdown in the late 1990s, producers looked to Europe for markets. The emphasis on food safety and quality for seafood has meant the European markets have been active in asserting standards such as Hazard Analysis Critical Control Points (HACCP) on food safety, so environmental certification provides additional market leverage.[21] The opportunity to use MSC certification and the product label as a marketing tool, or at least helping leverage improved market access, is a significant driver in both the western rock lobster and ice fish cases.

Both fisheries, too, were supported by commercial interests that were well aware of constraints and opportunities in export markets, particularly the consumer sentiments in Europe. Key proponents for certification of these fisheries were supporters of the MSC. The western rock lobster fishery had spent considerable effort in developing market access into Europe, and into Asia. MSC certification could be seen as crucial to ensure access to Europe. The Lakes and Coorong fishery, on the other hand, is a very different case; a small diversified community based fishery, but with participants that had a high awareness of, and support for, measures that would enable them to show sustainability of the fishery.[22]

Although these certifications are significant achievements, the MSC initiative has met with some scepticism from within the Australian fisheries sector, some fisheries managers, parts of the fishing industry, and environmental organisations other than WWF.[23] This scepticism has arisen in part due to a lack of clarity and transparency within the assessment process, and the cost of the process (borne by the proponent). For many fishers, benefits from certification are not clear, particularly if they are operating in domestic Australian markets where consumer pressure for certified fisheries may not be as strong as in Europe or North America. Australian fishers have noted that they have been subjected to an increased level of environmental scrutiny from the Australian government's 'strategic assessment' processes.

The cost of MSC certification and the lack of direct and tangible benefits from this certification have led to alternative, industry driven approaches, such as the Southern Rock Lobster Clean Green program. The Tasmanian Rock Lobster Fisherman's Association (TRLFA), for example, has rejected the MSC approach. The TRLFA argues that the EPBC strategic assessment and re-assessment program on a five yearly cycle is an effective arrangement, as it is linked to export licenses.[24] In contrast, the experience of the Lakes and Coorong fishery indicates that support for internal industry driven EMS type certification and MSC are not mutually exclusive, although,

unlike the Southern Rock Lobster industry, the former group moved from EMS to MSC certification.

The introduction of strategic assessments may have hindered rather than helped the take-up of the MSC in Australian fisheries. There is no doubt that eco-labelling is a growing trend but although there has been a significant increase in spread of the MSC label globally, it lacks visibility in the Australian market. Consumer behaviour, responding to, and seeking access to, wider and more detailed producer information, is apparent in key markets. Individual and corporate consumers want some assurance that the world's fisheries are being managed sustainably.

It is likely, too, that labelling will increase in the domestic market with consumer demands providing a major driver for market behaviour. At present Australian domestic markets appear to be driven by safety and quality of seafood, with considerable recent efforts made to standardise names of fish sold in Australia. It is likely, as environmental campaigns continue to address the sustainability of Australian fisheries, consumers will demand that markets respond. There are good economic opportunities for Australian operators to cater for markets with eco-labelled fish, especially for fish caught by selective gear and practices, as well as for fish that originate from healthy stocks.

Conclusion

Australian fisheries and associated processing activities are important rural and regional industries, sustaining a number of communities around the Australian coastline. Management of Australian fisheries attempts to balance economic, social and ecological criteria and ensure sustainability of operations. A key element of management is the provision of sound fisheries science, and appropriate policy instruments and tools. These instruments and tools include regulation (traditional state action) but also include market and community-based approaches. Certification and eco-labelling are examples of market-based approaches that complement and extend traditional management measures. While eco-labels provide consumers with readily accessible information on sustainability, the external assessment of fisheries relies upon data from, but also provides feedback to, management organisations that in turn improve management performance.

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1 Symonds, P Alcock, M and French C (2009). 'Setting Australia's Limits: Understanding Australia's Marine Jurisdiction *AUSGEO News* 93: 5.

2 Larcombe, JL and Begg, G (2008). *Fishery Status Report 2007*. Bureau of Rural Sciences, Canberra.

3 *Ibid.*

4 See Haward, M (1995). 'The Commonwealth in Australian Fisheries Management: 1955-1995', *The Australasian Journal of Natural Resources Law and Policy,* 2, 2: 313-325.

5 Pickworth, J, Schirmer, J and Casey, AM (2006). *Social Fabric of Australian Fishing: A Case Study in South Australia.* Fisheries Research and Development Corporation/Bureau of Rural Sciences, Canberra.

6 Haward, M (1989). 'The Australian Offshore Constitutional Settlement', *Marine Policy* 13, 4: 334- 348.

7 Gullett, W (2008). *Fisheries Law in Australia.* LexisNexis Butterworths, Chatswood NSW.

8 Fisheries Research and Development Corporation (2008). *Co-Management: Managing Australia's Fisheries Through Partnership and Delegation*. Report of The FRDC's National Working Group for The Fisheries Co-Management Initiative – Project No. 2006/068. FRDC, Canberra.

9 Henry, GW and Lyle, JM (2003) *The National Recreational and Indigenous Fishing Survey*. FRDC Project No. 99/158. Department of Agriculture, Fisheries and Forestry, Canberra: 47. See also McPhee, D (2008). *Fisheries Management in Australia*. The Federation Press, Sydney: 46.

10 Haward, M and Vince, J (2008). *Oceans Governance in the Twenty-first Century: Managing the Blue Planet*. Edward Elgar Publishing Ltd, Cheltenham UK and Northampton MA USA.

11 *Environment Protection and Biodiversity Conservation Act 1999* Parts 10, 13 and 13A.

12 Larcombe and Begg (2008) *op cit*: 7-8.

13 *Commonwealth of Australia Gazette* No 234 20 December 2005.

14 *Ibid*.

15 Smith, ADM, *et al* (2008). 'Experience in Implementing Harvest Strategies in Australia's South-Eastern Fisheries', *Fisheries Research*, doi:10.1016/j.fishres.2008.06.006.

16 See *Fisheries Management Act 1991*.

17 Potts, T and Haward, M (2007). 'International Trade, Ecolabelling, and Sustainable Fisheries – Recent Concepts and Practices', *Environment, Development and Sustainability,* 9: 91-106.

18 *Ibid*.

19 *Ibid*.

20 Phillips, B, Ward, T and Chaffee, C (2003). 'Case Study 1: The Western Rock Lobster: A Fishery and its Assessment' in Phillips, B, Ward, T and Chaffee, C (eds). *Eco-labelling in Fisheries: What is it all About?* Blackwell Science, Oxford: 94-102.

21 Bache, S, Haward, M and Dovers, S (2001). *Economic, Trade and Environmental Instruments: Their Impact on Australian Fisheries Policy and Management.* Centre for Maritime Policy University of Wollongong, Wollongong.

22 Fisheries Research and Development Corporation (2008). 'SA Fishery Credentials Recognised' *Fish*, 16, 3: 20.

23 Potts and Haward (2007) *op cit*.

24 *Mercury on Saturday*. 1 March 2008: 26.

Conflict between International Treaties: Failing to mitigate the effects of introduced marine species

ML Campbell, A Grage, CJT Mabin and CL Hewitt

Introduction

Humans have changed the face of the earth - we have intentionally altered the locations of species in order to achieve food and economic security (eg, aquaculture of the freshwater fish *Tilapia* and the marine algae *Kappaphycus*) while also appealing to our cultural and aesthetic values (eg, the introduction of gorse to New Zealand and Australia). We have accidentally spread pathogens and diseases beyond their natural ranges[1] and we have improved our technologies (such as shipping) to such an extent that we can transit our planet in shorter and shorter time-frames.[2] All of these activities have occurred over many hundreds of years[3] and have led in one way or another, to an increasing number of species being introduced beyond their natural ranges. Such introductions are now considered one of the top five threats to native biological diversity.[4,]

This paper examines how humans have impacted upon the marine environment through the introduction of species beyond their native ranges. Introduced species impact upon native biodiversity, spread diseases and pathogens, and have had economic and social impacts in their 'new' ecosystems. Because of the range and extent of introduced species impacts, numerous methods to mitigate the effects of introduced species have been developed and implemented. Within this paper we will examine how two international legal instruments, the *Convention on Biological Diversity*, *1992* (CBD) and the World Trade Organization's *General Agreement on Tariffs and Trade 1994* (GATT), in particular its associated *Agreement on the Application of Sanitary and Phytosanitary Measures* (SPS), deal with introduced species. In this context, the paper focuses on the potential for conflict that may arise with the application of these international legal instruments, thus causing a failure to effectively mitigate for the effects of introduced species.

What are introduced species?

Introduced species (also called non-indigenous, exotic or alien) are those species that have been recognisably transported (directly or indirectly) by the agency of humans to a new biological region from where they did not previously exist. In a terrestrial context, we define as 'naturalised' those introduced species that: i) have established self-supporting populations, ii) been present for a prolonged period of time, iii) have subsequently dispersed, and, iv) are considered to have become incorporated into the native ecosystem.[5] However, this terminology is not typically used in a marine context. Instead, introduced species that have been present for a long period of time are often referred to as historic introductions.[6] Introduced species that have deleterious affects in their new ecosystems are often referred to as 'weeds' or 'pests', though use of these terms are often politically motivated. The term invasive species is not synonymous with introduced species: invasive species can be introduced or native species that have traits that are unwanted by humans. Cryptogenic species are those species that we cannot determine whether they are native or introduced. As such, this is a catch-all category for species that have hidden origins. The management and control (including eradication) of introduced marine species is termed marine biosecurity.

Why should we care about introduced species?

It has been argued that increasing biodiversity is a good thing. We are constantly fighting to stop the loss of biodiversity, so surely adding one more species locally must

be good? [7] Globalisation of the world is leading to human, culture, services, and information interconnectedness[8], but also to the biotic homogenisation of the marine, terrestrial and freshwater species.[9] It has been argued that the current approach to introductions is xenophobic.[10] However, homogenisation is resulting in economic losses that are equivalent to approximately 5 per cent of the world economy (ie, trillions of dollars are being lost) and we are expending millions trying to understand, prevent, control, eradicate and mitigate introduced species, especially pest species. [11]

What is bad about introduced species? Human mediated transfers of species occur at a much faster rate than natural dispersal,[12] which has biological and ecological implications for the introduced species and the receiving ecosystem. For example, introduced species have fewer predators, pathogens and diseases than native species[13], making them more capable of out-competing native species. Introduced species also lack co-evolutionary ties with the receiving community species[14], and hence they can easily expand beyond their realised niche. Introduced species can predate upon native species, hybridise with natives (to the detriment of the natives) and compromise natural ecosystem services such as clogging waterways (eg, *Spartina* sp[15]), or damaging fisheries (eg, Nile perch[16]). All of these impacts ultimately reduce biodiversity, not increase it.[17] Consequently, introduced species are a widely recognised problem.

In a marine context, introductions can be categorised into those that are introduced intentionally (imported species) and those that are introduced unintentionally (not imported; hitchhikers, accidental transfers). Examples of intentionally introduced species include species that are used for human food (eg, abalone in Chile[18]), animal feeds (eg, microalgae[19]), bait (eg, pilchards in Australia[20]), the aquarium trade (eg, *Caulerpa*[21]), research (eg, *Botrylloides sandiegensis*[22]), and teaching (eg, *Gymnodinium catenatum*). Unintentional examples include species that arrive via hull fouling or hull boring (eg, the ascidian *Styela clava*), species that have survived in ballast water (eg, the sea star *Asterias amurensis*), pathogens that have hitchhiked with bait (eg, the pilchard herpes virus), and species that have hitchhiked with aquaculture species (eg, the crab *Petrolisthes elongatus* associated with oysters). Intentional introductions are more easily managed as countries can legislate to control what species and how it enters their jurisdictional area. For example, a species may be deemed to be a high risk and hence can only be imported to a country if it is maintained in a quarantine facility.[23]

How do humans transport introduction species?

In the marine environment, introduced species are moved from one place to another via various transport methods termed vectors. Examples of vectors include shipping (ballast water, dry and semi-dry ballast, hull fouling, hull boring, sea chests etc), trade (procurement of species via trade and their subsequent shipment), and tourism (eg, hitchhiking species that attached to tourists' equipment). The route which the species takes to arrive in an introduced locale is referred to as the pathway. A pathway can be convoluted and hence epidemiological analyses are used to determine pathways for species arrivals. For example, a ship may travel from port A to port B and along the journey visit a number of intermediate ports taking on and releasing ballast water, which retains a mix of species from the various ports. When the ship finally arrives at its destination port, the pathway has not taken a direct route and subsequently the destination port is exposed to the original port of call species but also to the species picked up at the numerous ports that were visited on route. To expand upon this, ports do not trade in isolation (ie, port A to port B transfer is overly simplified); thus,

potentially the available species in a trading port is a mix of all the species from all the different ports that trade with that one port.

To aid in the control of introductions countries have developed quarantine regulations, import health standards and legislation that prevents the unregulated entry of species.[24] These regulations target known species that are being intentionally introduced to a region[25,] (ie, species that are being imported) but do little to aid with unintentional species that are introduced due to poor regulation of a pathway (transfer route) or vector (transport mechanism).[26]

In an effort to redress such concerns, international law has sought to deal with introduced species in a manner that will aid their management, and if required their eradication. The CBD and GATT (including the SPS), each deal with introduced species in a manner that meets their specific agendas and, from this perspective, are discussed in further detail below. It could be said that the 'precautionary principle' is applicable to the operation of both these treaties, however, because each treaty has a different agenda and because each takes a different approach to the application of the precautionary principle, the potential for conflict exists.

Precaution: what does it mean?

The precautionary principle has been applied in the interests of environmental protection since the 1970s.[27] Various explanations of the principle have been provided, including the commonly referred to statement of the principle found in Principle 15 of the Rio Declaration on Environment and Development. As an example, this statement provides that in situations presenting with the threat of 'serious or irreversible damage, scientific uncertainty must not be used as a basis for 'postponing cost-effective measures to prevent environmental degradation'. [28]

Whilst international environmental principles, such as the Rio Declaration, assist in illustrating the precautionary principle, unless the precautionary principle is expressly incorporated into an international treaty, there can be difficulties in requiring its application ie, 'a precautionary approach'.[29] This is because of a number of factors, including the 'soft law' status of guiding principles within the international legal framework, and in the particular case of the precautionary principle, the ongoing debate as to whether or not it has achieved the status of customary international law and can therefore be automatically applied.[30]

In response to this, a number of international treaties and declarations have incorporated versions of the principle into their texts to help facilitate an approach.[31]

Within discussions about the application of the precautionary principle, the terms 'precautionary principle' and 'precautionary approach' are often used. The distinction between use of these two terms generally lies with the term 'approach' being used to describe the principle's application.[32] The World Commission on the Ethics of Scientific Knowledge and Technology, comments on this by acknowledging that there is discussion on the meaning of the two expressions, but that in general the term 'principle' is associated with the philosophical basis of the precaution concept, and the term 'approach' is used in the context of 'its practical application'.[33] The wording of Principle 15 of the Rio Declaration provides a direct example of this distinction. Prior to the statement of the principle itself, the text also requires that the precautionary approach must be taken by a State in a manner commensurate with their ability to do so.[34] In furthering the understanding of the distinction between 'principle' and 'approach', it could be suggested that the wording in Principle 15, in allowing an approach that varies with the ability of a State to apply the principle, intentionally

provides an inherently extensive level of flexibility associated with the principle's application.

Moving away from the flexible approach associated with the 'soft law' version of the principle, it could also be argued that the manner in which the various versions of the principle have been expressed in a treaty, when read with the objectives of that treaty, can assist in indicating the degree of the approach to be taken in applying the principle.[35]

It should also be noted that the precautionary principle philosophy and precautionary approach to be taken, as intended by an international treaty, is also strongly influenced by the domestic legislation and policy requirements of a particular country in its implementation of a treaty.[36] In addition to this, the wording of the precautionary principle in a treaty will often lack definitive direction,[37] and it could be said that this allows a considerable amount of leeway for the way in which countries formalise the principle and approach in legislative requirements.

An example of the variation in the 'precautionary approach' is illustrated below in a discussion of the comparison between the application of the CBD and SPS documents. In this context it could be said that the differing approaches form part of the basis for the potential conflict between international treaties that seek to manage similar issues eg, introduced marine species.

The Convention on Biological Diversity and introduced species

As mentioned earlier, this paper seeks to highlight the potential for conflict between the goals of two international treaties, the CBD and GATT 1994/ SPS; in particular where there is an application of the precautionary principle, or the 'precautionary approach'.

The objectives of the *Convention on Biological Diversity, 1992* (CBD) include biodiversity conservation and its sustainable use.[38] Within the CBD, three articles focus on introduced species in the context of conserving global biodiversity:

- Article 3,which deals with transboundary movement: '…to ensure that activities within their jurisdiction or control do not cause damage to the environment of other States or areas beyond the limits of national jurisdiction';
- Article 8(h), which deals with the managerial component of biosecurity: 'to prevent the introduction of, control or eradicate those alien species which threaten ecosystems, habitats or species'; and
- Article 14, which deals with 'Impact Assessment and Minimizing Adverse impacts' and includes requirements for the accountability for and management of measures affecting biodiversity both within and beyond jurisdiction; including those relating to the consequential impacts of a State's programs and policies that are deemed likely to have significant adverse effects on biological diversity.

Although they are not identified in the CBD itself, the jurisdictional limits and general responsibilities of States for the marine environment, that allow a State to fulfill its CBD obligations relating to introduced marine species, are provided for by the *United Nations Law of the Sea Convention, 1982* (UNCLOS III). The marine jurisdictional requirements for invasive species and their management under the CBD are also supported in UNCLOS III by reference to the control of introduced marine species as a matter for marine environmental protection and regulation at Article 196. This Article in itself is important for the regulation of vectors ie, shipping. However, concerns about the lack of guidance on how to achieve the objective of this Article have been raised. [39] Similar concerns have also been raised about the strength and guidance of regulatory control associated with Article 8(h) of the CBD.

To overcome such concerns about the CBD's management of marine invasive species, it is suggested that the application of the precautionary principle and as such the strength of the approach taken is an important element in achieving the CBD's general objectives. Articles 8(h), 3 and 14, in reference to introduced species, are underpinned by the precautionary approach detailed in the CBD's preamble. The precautionary approach appears as such:

> Noting also that where there is a threat of significant reduction or loss of biological diversity, lack of full scientific certainty should not be used as a reason for postponing measures to avoid or minimize such a threat.

As discussed by Riley, Article 1 of the CBD Guidelines provides further support for the use of the precautionary principle. In doing so, the guidelines state that the precautionary principle sets 'an appropriate standard' for managing invasive species. Riley also discusses that the CBD, as an organisation, emphasises that the impetus for this relates to 'the unpredictability of the invasion process' as justification for prohibiting introductions, unless proven safe.[40]

The precautionary principle when considered with the CBD's requirement that the onus for assessment, management and control of activities related to trade of introduced species rests with the State proposing to undertake the activity[41,] (known in trade circles as the exporter), indicates that the burden of proof lies with the proponent of an activity.[42]

This in itself, and alongside the intrinsic values of the CBD, could suggest that the precautionary approach to be taken by those implementing the CBD requires a strong emphasis within decision-making.

In addition, the essence of this is that it presents a 'guilty until proven innocent by science' approach to the transboundary movement of organisms by the importing and exporting country.[43] Member countries of the CBD are obliged, under the Convention, to ensure that their trade activities adhere to the protection of biodiversity. Importers of introduced species need to heed Articles 8(h) and 14; while the weight of the onus is on exporters who need to observe all Articles 3, 8(h), and 14.

The World Trade Organisation and introduced species

The World Trade Organisation (WTO) was established to facilitate and promote a global increase in trade through liberalisation of world markets.[44] As market liberalisation stimulates trade, thereby increasing trade volumes, the opening of the world to free markets facilitates and increases trade activity.[45] As a consequence of this increased global trade activity, there has been a concomitant global increase in frequency of introduced species via trade, increasing the risk of harmful introductions to plant, animal and human health.[46]

This concern is dealt with in the text of the WTO and operational measures are solidified under the *General Agreement on Tariffs and Trade 1994* (GATT). While allowing a country to block trade, GATT ensures bans and restrictions on trade are not protectionist measures by a Member State under the guise of environmental protection.[47] It is serviced by three standard setting bodies in formation under the Agreement on the Application of Sanitary and Phytosanitary Measures (SPS). They include the International Plant Protection Convention (IPPC 1952, revised 1997), the World Animal Health Organisation (Office Internationale des Epizooites (OIE)) and Codex Alimentarius (food standards) (CA).

In particular, these mechanisms under the SPS prescribe the use of risk assessment methods in order to quantify possible negative effects of introduced species on these

three domains.[48] The right of an importing nation to protect itself against introduced species by blocking trade of certain items is made possible under these mechanisms. However, decisions based on these standardised risk assessments can be scrutinised and overruled by WTO organs, forcing a Member to comply with WTO rules and continue the trade of suspect introduced species. This approach could be said to represent the absence of the precautionary approach in the WTO,[49] as well as promote the stance of an 'innocent until proven guilty by scientific proof' approach to introduced species[50] and the importer.

That said, it has been acknowledged that the SPS and even parts of GATT embed a variation of the precautionary principle through 'gateway' provisions. The evidence for this has been discussed by Cheyne as being present within Articles 5.1 and 5.7 of the SPS, as well as the potential for its application through the GATT in Articles XX(b), XX(g) and, although considered with ambivalence, the chapeau of Article XX.[51]

Article 5.7 of the SPS incorporates a form of precautionary approach, in relation to 'Assessment of Risk and Determination of the Appropriate Level of Sanitary or Phytosanitary Protection' as follows:

> In cases where relevant scientific uncertainty is insufficient, a Member may provisionally adopt sanitary or phytosanitary measures on the basis of available pertinent information, including that from the relevant international organizations as well as from sanitary or phytosanitary measures applied by other members. In such circumstances, Members shall seek to obtain the additional information necessary for a more objective assessment of risk and review the sanitary or phytosanitary measure accordingly within a reasonable period of time.

However, Cheyne points out there has been division amongst commentators as to the extent that this Article and the other Articles within the GATT and SPS allow for the application of the precautionary principle. Cheyne also appears to conclude that the question as to the strength of the precautionary approach appears to remain somewhat uncertain due to the WTO Appellate Body's acknowledgement of its existence yet failure to embrace it as a part of international law, and refusal to allow it to cancel out the intended meaning of provisions, such as Article 5.7 and 3.3 of the SPS.[52]

Another aspect of the WTO that should be examined in the context of introduced species is the recognition by the Trade Related Intellectual Property Rights (TRIPS) Council of traditional knowledge during the Doha Declaration. This area is usually examined in the context of the rights of traditional owners to traditional medicines and the lack of shared benefits. As more private interests are claiming intellectual property rights (IPR) incentives in trade of this 'intellectual property'[53] further encourages the trade and dissemination of more exotic species, genetic materials, pathogens, disease and bacteria to other parts of the world, increasing the incidence of introduced species.

Ultimately the WTO, with SPS Agreement, has developed into an authority that attempts to liberalise trade, while attempting to reduce the risk that introduced species may harm human, animal and plant health, through trade blocking, while also administering an operational arm that removes impediments to trade restriction.[54] This operation alone can result in managerial friction.

The conundrum: marine biosecurity under CBD and WTO

Those operating in marine biosecurity realise the importance of the precautionary approach and are more inclined to adopt preventative measures to manage the problem. In addition to this, given the variable natures of introduced species, marine ecosystems and predicting impacts on the marine environment, marine biosecurity

measures seek to engage adaptable approaches, managing introduced species on a case by case basis. Under the agreement of the CBD, this is an adequate approach for the protection of biological diversity against introduced species. However, this approach can conflict with SPS instruments under the WTO.

Under the SPS Agreement, strict guidelines govern the reasoning for blocking trade in a species. In particular, an action to block trade cannot be based on protectionism, but must be based on a risk assessment (that has an endpoint of protection for humans or animals against food-borne diseases, and/or protection against pests and diseases) that has a sound scientific basis backed by strong evidence.[55,]

For example, *Australia – Salmon* is a case where Canada brought Australia before the WTO's Apellate Body (AB) to appeal Australia's actions. In this situation Australia attempted to block the importation from Canada of frozen and fresh salmon that were suspected of carrying pathogens. Australia believed these pathogens could pose a level of risk to native fish. In addition to the ruling, which resulted in Australia failing in their attempt to block the salmon importation, the AB noted that Australia's allowable level of protection (ALOP: also known as 'acceptable level of risk') was deemed higher in the case against Canadian salmon than with other similar products of import (fish and bait), and therefore deemed the risk assessment to be unsatisfactory and not based on science. [56] Of interest is that a WTO member can determine its own ALOP, but in this case Australia had not been consistent with its application of ALOP and had violated Article 5.1. According to Cheyne, in the *Australia – Salmon* case, the AB identified that the precautionary principle existed within the limits of the discretion associated with determining an ALOP.

However, this ruling is typical of the uncertainty of the SPS and illustrates the restrictions it can impose on a State that wishes to fulfil obligations of 'hard law' such as the CBD. In the alternative, however, it should also be noted that the CBD does not provide a forum in which the rights and obligations associated with other international treaties can be imposed upon, and therefore fails to abrogate trade restrictions that relate to invasive species issues.[57]

Developing countries have criticised the WTO approach to introduced species.[58] While the onus is on the importer to provide a risk assessment to protect the health of the receiving State's humans, animals or plants, the burden of proof and associated costs are borne by the importing countries. This places poorer countries in a difficult position as they generally do not have the frameworks or the funding capacity to carry out adequate risk assessments. Some of these countries have protested that the SPS measures in the OIE, IPPC and CA are designed primarily for developed countries that can afford these assessments and have access to technologies associated with them. In essence, these developing countries are more susceptible to damaging introduced species under WTO free trade because they benefit from liberalised trade regimes, that stimulate their economy, yet are unable to perform risk assessments to maintain their biosecurity.

Economic and social implications

Given the similar goals of societal wellbeing, both the CBD and WTO initiate different approaches when dealing with introduced species. WTO focuses on the benefits of global trade to economies and societies. In a marine context this has a focus on fisheries and aquaculture[59] and has short term goals at its heart. Alternatively, the CBD promotes the protection of global biodiversity via sustainable practices, with long term goals at heart. The CBD views the environment as a finite resource that needs to be shared equitably within and between generations for the benefit of humankind, and

preservation and responsible management of the environment are central to that aim. The impacts associated with the loss of biodiversity through harmful introduced species are a decrease in environmental services, which decreases employment in economic activities, reduces the quality of natural surroundings, and human resource opportunity costs in science and technology are foregone for the management of introduced species outbreaks. [60]

Conclusions

The inconsistency between WTO policy direction and the CBD can be attributed to the absence and presence, including strength and weakness, of vital driving principles. The main principle of note is the precautionary principle, which is a common thread, linking international environmental laws with environmental State laws in the pursuit of protecting the environment, and in the case of CBD, biodiversity. Based on the discussion above, it could be suggested that the precautionary approach taken by the WTO is somewhat weaker than that evident within the CBD, and the seemingly higher authority the WTO has over multilateral environmental agreements, seems to benefit the primary goal of the WTO, which is to facilitate increased trade which may impede the implementation of CBD operations. Based on the available information and simply stated, this conflict places an increased risk of harmful introduced species impacting on global biodiversity, economics and social wellbeing.

The potential for the WTO's SPS Agreement to foil efforts of a State to protect its environment from the harm of introduced species is counter-productive to the primary goals of the WTO. The economic harm associated with introduced species can and should be conducive to controls on trade and the SPS Agreement needs to incorporate a more integrated approach with multilateral environmental agreements such as the CBD.

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[1] Crosby, AW (2004). *Ecological Imperialism: the Biological Expansion of Europe, 900-1900,* Cambridge University Press; Cambridge.

[2] Carlton, JT, and Geller, JB (1993). 'Ecological roulette – the global transport of non-indigenous marine organisms', *Science* 261: 78-82.

[3] Crosby (2004) *op cit.*

[4] Lubchenco, J, Olson, AM, Brubaker, LB, Carpenter, SR, Holland, MM, Hubbell, SP, Levin, SA, MacMahon, JA, Matson, PA, Melillo, JM, Mooney, HA, Peterson, CH, Pulliam, HR, Real, LA, Regal, PJ, and Risser, PG (1991). 'The sustainable biosphere initiative: An ecological research agenda', *Ecology,* 72, 2: 371-412; Occhipinti-Ambrogi, A and Savini, D (2003). 'Biological invasions as a component of global change in stressed marine ecosystems', *Marine Pollution Bulletin,* 46, 5: 542-551.

[5] Richardson, DM, Pysek, P, Rejmanek, M, Barbour, MG, Panetta FD, and West, CJ (2000). 'Naturalization and invasion of alien plants: concepts and definitions', *Diversity and Distributions,* 6, 2: 93-107.

[6] Coles, SL, DeFelice, RC, Eldredge, LG, Carlton JT (1999). 'Historical and recent introductions of non-indigenous marine species into Pearl Harbor, Oahu, Hawaiian Islands', *Marine Biology,* 135, 1: 147-158.

[7] Perrings, C, Miler, K-G, Folke, C, Holling CS, Jansson, B-O (Eds) (1997). *Biodiversity Loss: Economic and Ecological Issues*. Cambridge University Press; Cambridge; Rosenzweig, ML (2001). 'The four questions: what does the introduction of exotic species do to diversity?' *Evolutionary Ecology Research,* 3: 361-367.

[8] Barber, BR (1995). *Jihad vs McWorld. How globalism and tribalism are reshaping the world*. Times Books; Toronto; Guillen, MF (2001). 'Is globalization civilizing, destructive or feeble? A critique of five key debates in the social science literature', *Annual Review of Sociology,* 27: 235-260.

[9] Rosenzweig (2001) *op cit*; Collins, MD, Vazquez, DP, and Sanders, NJ (2001). 'Species-area curves, homogenisation and the loss of global diversity', *Evolutionary Ecology Research,* 4: 457-464; Olden, JD, Poff, NL, Douglas, MR, Douglas, ME, and Fausch, KD (2004). 'Ecological and evolutionary consequences of biotic homogenization', *Trends in Ecology and Evolution*, 19, 1: 18-24.

[10] Simberloff, D (2003). 'Confronting introduced species: a form of xenophobia?' *Biological Invasions*, 5: 179-192.

[11] Pimentel, D, Lach, L, Zuniga, R and Morrison, D (2000). 'Environmental and economic costs of non-indigenous species in the United States', *Bioscience,* 50: 53–64.

[12] Carlton and Geller (1993) *op cit.*

[13] Torchin, ME, Lafferty, KD and Kuris, AM (2002). 'Parasites and marine invasions', *Parasitology,* 12: S137-S151; Torchin, ME, Lafferty, KD, Dobson, AP, McKenzie, VJ, Kuris, AM (2003). 'Introduced species and their missing parasites', *Nature,* 42: 628-630.

[14] Blossey, B and Nötzold, R (1995). 'Evolution of increased competitive ability in invasive non-indigenous plants: a hypothesis', *Journal of Ecology* 83: 887-889; Callaway, RM and Ridenour, WM (2004). 'Novel weapons: invasive success and the evolution of increased competitive ability', *Frontiers in Ecology and Environment,* 2, 8: 436-443.

[15] Waldner, LS (2008). 'Exploring the kudzu connection: Exploring the connection between land use and invasive species,' *Land Use Policy*, 25, 3: 399-409.

[16] Ogutu-Ohwayo, R (1990). 'The decline of the native fishes of lakes Victoria and Kyoga (East Africa) and the impact of introduced species. Especially the Nile perch, *Lates niloticus*, and the Nile tilapia, *Oreochromis miloticus*. *Environmental Biology of Fishes*, 27, 2: 81-96.

[17] Collins *et al* (2001) *op cit.*

[18] Flores-Aguilar, RA, Gutierrez, A, Ellwanger, A and Searcy-Bernal, R **(**2007). 'Development and current status of abalone aquaculture in Chile', *Journal of Shellfish Research,* 26: 705–711.

[19] Brown, MR, Jeffrey, SW, Volkman, JK, Dunstan, GA (1997). 'Nutritional properties of microalgae for mariculture', *Aquaculture*, 151, 1-4: 315-331.

[20] Murray, AG and O'Callaghan, M (2005). 'The numerical and programming methods used to implement models of the spread and impact of a major epidemic disease: pilchard herpesvirus, Australia 1995 and 1998/1999', *Environmental Modelling and Software,* 20, 5: 575-585.

[21] Semmens, BX, Buhle, ER, Salomon, AK, Pattengill-Semmens, CV (2004). 'A hotspot of non-native marine fishes: evidence for the aquarium trade as an invasive pathway', *Marine Ecology Progress Series,* 266: 239-244.

[22] Lafferty, KD and Kuris, AM (1996). 'Biological control of marine pests', *Ecology,* 77, 7: 1989-2000.

[23] Campbell, ML (in review). 'Assessing the marine biosecurity risk with the importation of cultured microalgae', *Risk Analysis*.

[24] For example see Australia's *Quarantine Act 1908* (Cth).

[25] Anon (2005). *Import Health Standard for the Importation into New Zealand of Ornamental Fish and Marine Invertebrates from All Countries*. Biosecurity New Zealand, Wellington. <http://www.biosecurity.govt.nz/files//imports/animals/standards/fisornic.all.pdf> accessed on 25/03/2009; Kahn SA, Wilson DW, Perera, RP, Hayder H and Gerrity SE (1999). *Import Risk Analysis on Live Ornamental Finfish*. AQIS, Canberra.

[26] Hewitt, CL and Campbell ML (2007). 'Mechanisms for the prevention of marine bioinvasions for better biosecurity', *Marine Pollution Bulletin*, 55: 395-401.

[27] Stein, PL (2000). 'Are decision-makers too cautious with the Precautionary Principle? ', *Environmental and Planning Law Journal,* 17, 1: 3-23; COMEST and UNESCO (2005). *The Precautionary Principle*, UNESCO, Paris.

[28] UNCED (1992). *Rio Declaration on Environment and Development*, United Nations Environment Programme at <http://www.unep.org/Documents.Multilingual/Default.asp?DocumentID=78&ArticleID=1163> accessed on 26/03/09.

[29] Cheyne, I (2007). 'Gateways to the Precautionary Principle in WTO Law' *Journal of Environmental Law*, 19, 2: 155-172 at 157.

[30] UNESCO (2005). *op cit* at 21-22; Cheyne (2007) *op cit* at 160; also see the discussion in Riley, S (2005). 'Invasive alien species and the protection of biodiversity: the role of quarantine laws in resolving inadequacies in the international legal regime', *Journal of Environmental Law,* 17, 3: 323–359.

[31] For example see the *London Declaration (Second International Conference on the Protection of the North Sea 1987)*, the *1992 United Nations Framework Convention on Climate Change*, the *1992 Convention on Biological Diversity*, *Agenda 21*, and the June 1990 Amendments to the *1987 Montreal Protocol on Substances that Deplete the Ozone Layer* as per Stein (2000) *op cit*. Over 60 treaties have incorporated the Precautionary Principle in some form – as per COMEST and UNESCO (2005) *op cit*.

[32] See manner of general discussion in Cheyne (2007) *op cit*, Stein (2000) *op cit*, and Riley (2005) *op cit*. Also see, for example, the definition of 'precautionary approach' provided by the European Environment Agency (an agency of the EU) in their 'Environmental Terminology and Discovery Service'. The definition being 'precautionary approach: A decision to take action, based on the possibility of significant environmental damage, even before there is conclusive, scientific evidence, that the damage will occur'. This definition can be found at <http://glossary.eea.europa.eu/EEAGlossary/search_html> accessed on 26/03/09.

[33] COMEST and UNESCO (2005) *op cit.*

[34] UNCED (1992) *op cit*, Principle 15.

[35] For example, see the general discussion in Cheyne (2007) *op cit*, about the application of the precautionary principle in the context of the WTO, GATT and SPS.

[36] For example, Australia, in adopting the concept of ESD within the Intergovernmental Agreement on the Environment 1992 at Section 3.5.1, amended the wording of the precautionary principle, through the use of the word 'should' instead of 'shall' so as to imply a discretionary directive instead of a mandatory directive. In turn, this has been reflected in the Australian Government's principal piece of legislation for environmental protection, the

Environment Protection Biodiversity Conservation Act 1999 (Cth) at Section 3A(b). The Intergovernmental Agreement on the Environment (1992) can be found at: Australian Government, Department of the Environment, Water, Heritage and the Arts, *Ecologically Sustainable Development: Intergovernmental Agreement on the Environment*, <http://www.environment.gov.au/esd/national/igae/index.html> accessed on 26/03/09.

[37] COMSET and UNESCO (2005) *op cit.*

[38] *Convention on Biological Diversity, 1992*, Article 1.

[39] Riley (2005) *op cit:* 332.

[40] *Ibid*: 333.

[41] *Convention on Biological Diversity, 1992* Article 8(h); Hewitt and Campbell (2007) *op cit*.

[42] In the context of litigation the burden of proof usually rests with the opponent. For a general discussion on the shift of the burden of proof because of the precautionary principle see: Bates, G (2006). *Environmental Law in Australia*, LexisNexis Butterworths (6th edition).

[43] Hewitt and Campbell (2007) *op cit*.

[44] Perrings, C, Williamson, M, Barbier, EB, Delfino, D, Dalmazzone, S, Shogren, J, Simmons, P, and Watkinson, A (2002).' Biological invasion risks and the public good: an economic perspective'. *Conservation Ecology,* 6, 1: 1. <http://www.consecol.org/vol6/iss1/art1> accessed on 20/03/209.

[45] US Interagency Task Force (1992) .*Review of US-Mexico Environmental Issues*. Office of the US Trade Representative, Washington, DC.

[46] Perrings *et al* (2002) *op cit*.

[47] Jenkins, P (1999). 'Trade and exotic species introductions', in Sandlund, OT, Schei, PJ, Viken, A (eds) *Invasive Species and Biodiversity Management*, Kluwer Academic Publishers, Netherlands: 229-235.

[48] Skjerve, E and Wasteson, Y (1999). 'Consequences of spreading of pathogens and genes through an increasing trade in foods', in Sandlund *et al op cit*: 259-267.

[49] Riley (2005) *op cit*.

[50] Hewitt and Campbell (2007) *op cit*.

[51] Gateway provisions in this context describe WTO provisions that allow for the introduction of 'non-trade concepts' as discussed by Cheyne (2007) *op cit*.

[52] Cheyne (2007) *ibid*.

[53] NFTC (2003). *Looking Behind the Curtain: The Growth of Trade Barriers that Ignore Sound Science*. National Foreign Trade Council, Inc. NW Washington, DC. <http://www.wto.org/english/forums_e/ngo_e/posp47_nftc_looking_behind_e.pdf> accessed on 20/03/09.

[54] National Research Council (United States) (2002). *Predicting invasions of nonindigenous plants and plant pests*. Washington, DC: National Academy Press.

[55] Pauwelyn, J (1999). 'The WTO agreement on sanitary and phytosanitary (SPS) measures as applied in the first three SPS disputes. EC – Hormones, Australia – Salmon and Japan – Varietals', *Journal of International Economic Law*, 1999: 641-664; Margolis, M, Shogren, JF, and Fischer, C (2005). 'How trade politics affect invasive species control', *Ecological Economics,* 52, 3: 305-313.

[56] *Australia – Salmon* WT/DS18/AB/R; Riley (2005) *op cit*; Pauwelyn (1999) *op cit.*

[57] Riley (2005) *op cit*.

[58] Gray, KR (2003). *Right to Food Principles vis à vis Rules Governing International Trade*. British Institute of International and Comparative Law. <http://www.cid.harvard.edu/cidtrade/Papers/gray.pdf> accessed on 20/03/09.

[59] Bax, N, Williamson, A, Aguerob, M, Gonzalez, E and Geeves, W (2003). 'Marine invasive alien species: a threat to global biodiversity', *Marine Policy,* 27: 313–323.

[60] Glowka, L (1994). *A Guide to the Convention on Biological Diversity*. IUCN; Gland.

Coastal Water Factories and Millennial 'Water Dreaming'

Dave Mercer

A common theme running through environmental history writings in Australia has always been the tension between the so-called 'colonial' and 'ecological' images of this country.[1] The former unashamedly celebrates human power and ingenuity in the face of adversity, and refers to the dominant, 'frontier' mentality, based around the narrative of 'conquering' and 'subduing' an alien environment. As Powell emphasises, this involves one overriding goal – 'to *alter*, not simply ignore or sportily challenge, Australia's environmental parameters' (emphasis added).[2] The state has always played a prominent role here, with Walker identifying four, distinct phases of 'statist developmentalism' in Australia.[3] By contrast, emphasising undeniable ecological constraints, the latter theme has long warned of the ultimate folly of this worldview. It has gained considerable legitimacy in recent times with the (re)discovery of the relevance of Indigenous knowledge and land management practices, exemplified in a recent study of Nyungar attitudes to water resources in the Perth coastal plain.[4] Other milestones have been the publication of such apocalyptic texts as Homer-Dixon's, *The Upside of Down,* Jared Diamond's, *Collapse,* and Mary White's, *Listen…Our Land is Crying,*[5] the subsequent rise to prominence of 'sustainability' in public discourse, and the growing recognition – often highlighted in rigorous, 'State of the Environment' reports - of the parlous state of many Australian ecosystems, not least in the coastal zone.

Water management

As recently as the 1960s fresh water was not widely viewed as a scarce resource in global terms. But with non-saline water comprising only 3 per cent of the planet's total water and with consumption having grown at twice the rate of population in the interim, this perception has now changed dramatically, and not just in relation to so-called 'developing' countries. In February, 2009, a report authored by the Pacific Institute at the request of the Investor Network on Climate Risk, starkly set out the growing risk that water scarcity is now posing for businesses and investors around the world. In the report, the Chairman of Nestlé, Peter Brabeck-Letmathe, is quoted as saying, 'I am convinced that, under present conditions and with the way water is being managed, we will run out of water long before we run out of fuel'.[6] The World Wildlife Fund's *Living Planet Report* now calculates each country's 'water footprint'. Averaged over the period, 1997-2001, the footprint of consumption globally was 1.24 million litres per person per annum. By comparison, Australia's average was 1.39 million litres.[7] Fifty countries were classified as experiencing year-round, 'moderate' to 'severe' water stress and are having to make radical adjustments. In the wake of the worst drought in fifty years, China, for example – unlike much of Australia - has recently decided to abandon its long-established emphasis on 'supply-side' solutions and to focus instead on a dramatic, 60 per cent cut in water consumption by 2020.[8] Given that water-saving policies are much cheaper to implement than the provision of additional supply, China's change of direction is a sensible one and, if successful, is far more ambitious than the modest consumption reduction targets being set by Australian State governments (eg, 24 per cent for southeast Queensland and 15 per cent for Melbourne).

Other, 'water deficit' countries are either importing water from their neighbours by tanker (Cyprus) or pipeline (Singapore) or are actively 'capturing' the headwaters of major rivers that flow into adjacent countries (Turkey). The new Chinese approach underscores an important point in relation to so-called water 'scarcity': more often than

not it is a failure of *governance* that has created current crises. This can involve such shortcomings as poor monitoring and regulation of consumption, serious underpricing, and lack of information and transparency about the quantities of 'virtual water' embedded in different products (eg, one A4 sheet of paper: 10,000ml; one cotton T-shirt: 41,000ml, etc). If widely mandated and applied, 'water labelling' has considerable potential to transform both water consumption and production practices around the world.[9]

Water management has always been a central issue in the settling of Australia and water has been viewed variously as a free good, an economic good, a scarce resource and a human right.[10] General Comment 15, released by the United Nations in November 2002 demonstrates clear support for the principle of access to adequate, clean water as a basic human right. For most of the period since European settlement water was regarded as a 'public' resource. But increasingly, from the early 1990s onwards, State governments have been gradually vacating the field and handing over responsibility to the private sector. New South Wales took an early lead by adopting the 'Build-Own-Operate' (BOO) strategy for Sydney's water filtration plants. As we shall see when discussing Victoria's proposed desalination plant, public-private partnerships may be fine in theory, but become problematic at times of serious economic recession such as now.

When we look back upon the history of water technologies and allocations in Australia we see some of the most dramatic examples in the world of engineers, farmers and politicians attempting to 'tame' nature, 'open up' the arid interior and dramatically alter natural hydrological systems. In part this 'boosterism' policy was an attempt to greatly increase Australia's population, even though many early, and indeed more recent environmentalists like Tim Flannery, have consistently argued that at 21 million people, Australia is already overpopulated, not least because of the limited water availability. Excessive and wasteful water consumption continues to be an ongoing problem, often exacerbated by competition for water between the States and a lack of integration within Statewide and regional water systems as well as poorly-maintained infrastructure. Approximately 70 per cent of the world's population gets by on less than 50 litres of water a day. By comparison, the average Australian household consumes 1100 litres, much of which (toilet flushing, garden watering, etc) could readily be substituted with grey water.

As Gleick has emphasised, the 'problem' of water in affluent countries like Australia or the United States is of a quite different order from that in much of the arid and semi-arid developing world.[11] Moreover, in States such as California or Victoria there is often fierce disagreement between different communities and constituencies as to the nature and severity of the 'problem' and favoured solutions. He identifies at least five such interest groups: primary producers, environmentalists, urban water users, environmental justice advocates, and academic and professional communities.

'Water dreaming'

Drawing on the narrative traditions outlined above, in a public lecture entitled '*The Water Dreamers'*, delivered at Melbourne University in mid-2008, the historian and radio broadcaster, Michael Cathcart, led his audience through the successive technological phases and 'dreams' that have characterised Australian 'solutions' to water management in the world's driest inhabited continent, since first European settlement.[12] Invariably, these have been grand-scale, 'nation-building', hydro-engineering projects such as the Snowy Mountains and Ord Schemes, irrigation in the Murray-Darling basin, long-distance water-transfer from Perth to Kalgoorlie, hydro-industrialisation in Tasmania, and so forth. What all these real and imagined schemes

have in common is a belief, strongly promoted in Brady's 1918 book, *Australia Unlimited,* that the engineering profession holds the key to 'taming' the Australian environment and gaining access to unlimited supplies of freshwater for energy production, irrigated agriculture and urban water supply.[13] In hindsight, what is extraordinary about so many of these grand schemes is their initially unrecognised (or ignored), cumulative environmental consequences and their ultimate failure to live up to their early economic promise. For example, the longstanding Tasmanian practice of damming practically every river in the State to produce electricity and thereby hoping to attract a range of industries to the island, eventually proved to be a policy almost completely without substance. It was finally brought crashing down through concerted citizen action in the 1980s' 'no dams' campaign.

Apart from the obvious exception provided by the construction of the 560 km pipeline from the coast to the eastern goldfields' region in Western Australia, just after federation, the vast majority of Australia's water engineering mega-projects were concentrated *inland.* The recent fashion for desalination – the main focus of this paper – has completely reversed this geographical orientation; for several States the coast is now centre-stage in the rush to drought-proof our major cities. As we shall see, for many this trend represents a significant 'threat' and is highly contested. Interestingly – like the other recent wave of intrusions in the form of industrial-scale wind farms, channel-deepening to accommodate the new generation of giant container vessels, and aquaculture enterprises – the spectre of desalination plants was never considered by the Resource Assessment Commission in the course of its exhaustive, national Coastal Zone Inquiry in the early 1990s.[14] A parallel review of Melbourne's future water supply needs summarily dismissed desalination as a 'prohibitively expensive option'.[15]

Some of the earlier 'dreams', such as the fanciful proposals by 'Jack' (Ion) Idriess[16] and John Job Crew Bradfield[17] to turn rivers inland to 'water the deserts', were never realised. But in general, Australian politicians of all political persuasions from Deakin onwards have shown themselves to be enthusiastically receptive to large-scale, 'technical-fix' solutions to water management issues, even in the face of strong and reasoned opposition. Griffith Taylor was openly denounced as 'heretical' for daring to question the *Australia Unlimited* narrative,[18] as was Bruce Davidson some years later for criticising the relentless push for more and more marginal land to be turned over to irrigation.[19] The latter use now accounts for around 70 per cent of all water consumed in Australia each year.

As with the contentious, on again/off again issue of nuclear power, history has shown us that it is not uncommon for shelved proposals such as a long-distance water pipeline from north-western Australia to Perth, or the transportation of icebergs to Australia from Antarctica, to resurface many years or decades later. With the continued drying out of southern Australia and south-east Queensland there is now renewed interest in the opening up of the last remaining agricultural 'frontier' – the better-watered north of the country. The controversial Ord 2 scheme, for example, is now under close scrutiny by the Western Australian and Commonwealth governments, even though the original Ord project has been fraught with numerous ongoing investment, marketing and pest/disease problems. Many scientists argue that Ord 2 should not proceed until we are much better informed as to the likely environmental consequences of the development.

The current 'crisis'

Large water supply projects typically take decades to plan and build and so do not fit comfortably with governments' much shorter electoral cycles. Victoria's Thomson

Reservoir, for example, which initially was predicted to 'drought-proof' Melbourne once and for all, took some twenty years to plan prior to the finalisation of the enormous dam wall in 1983. But that reservoir – which provides around 60 per cent of Melbourne's water – is now at less than 20 per cent capacity and vegetation in the catchments around two of the other nine reservoirs servicing Melbourne has been decimated by the unprecedented February 2009 bushfires. Potable water quality and quantity have both been seriously compromised by the possibility of toxic wastes being discharged into the reservoirs following the fires. The State's Water Minister has subsequently argued that this strengthens the case for the controversial Wonthaggi (South Gippsland) desalination plant, of which more below.[20]

We are now at a crucial stage in Australia's history where it is becoming increasingly clear that past State governments, in particular, have been caught completely off-guard by the rapid onset of climate disruption and have been negligent in planning for future water provision in a country that is becoming progressively hotter and drier, especially in the south. It should not be forgotten that worldwide, 2007 was the hottest year in a century and that Australia has exceeded its average annual temperature for 16 out of the last 18 years. Moreover, the first two months of 2009 were the hottest and driest start to a year on record, and last decade has been the driest and hottest since records began. And even though, globally, 2008 was the coldest year since 2000, it was still the fourteenth hottest year in a century. CSIRO modelling has predicted an annual average temperature increase across the continent of between 0.4 and 2 degrees by 2030 and 1-6 degrees by 2070, but these may well be low level estimates.[21] Indeed, all the indications are that the science underpinning the international climate change agreement forged in Bali in 2007 is now largely out of date and that – as demonstrated by the 'new generation', Victorian bushfires of February 2009 – catastrophic climate change is already underway.

Peter Spearritt has documented how seriously 'rattled' the Queensland government became during the dramatic water crisis in the southern part of that State in 2005 and 2006.[22] That crisis was triggered by the long, Millennium Drought, prior to which south-east Queensland householders were consuming around 300 litres of water per person, on a daily basis. Present indications are that this drought is far more serious than the 1898-1903 'Federation Drought' in terms of water supply. Thus far, south-east Queensland has registered a cumulative rainfall deficit of almost 1400 mm by comparison with a figure of 1278 mm in the earlier, 61-month dry period. In recent times, the State governments of Western Australia, South Australia, New South Wales and Victoria have also had to take rapid, remedial action, including imposing strict level 3a water restrictions. Hastily-produced government reports with titles like, *Securing Our Water* (Victoria, 2003), or *Water for Today, Water for Tomorrow* (Queensland, 2008) have been a feature of all States over the last few years and send the clear and consoling message that – invariably with desalination – everything is under control and our major cities will not run out of water. However, several unknowns bedevil forward planning. These include population growth, the precise impact of climate disturbance at the regional scale, and future capital development and operating costs (especially in relation to energy pricing).

Perth and Adelaide are perhaps the chief contenders for the most 'water-challenged' State capital cities in Australia. Indeed, in 2005, Tim Flannery raised the possibility of Perth having the distinction of becoming Australia's first 'ghost metropolis' as the city dried out and exhausted its remaining water supplies.[23] But now that Perth has an operational desalination plant, and that threat appears to have receded somewhat, arguably, the most critical situation is unfolding in Adelaide. At the time of writing that

city is some eighteen months' away from having the 'lifeline' of an operational desalination plant. But if the current, longterm drought persists through the coming winter, the intervening period could witness the onset of an unprecedented water crisis for Adelaide's residents and industries. The city – which is heavily dependent on the Murray River for its water supply - has certainly experienced serious longterm droughts before, notably around the time of federation and in the late 1930s. If, once again, it experienced a drought with the longevity of that in the 1930s, the present dry conditions would last until 2014. Aside from the worsening effects of climate change, the big difference now is that flows in the Murray have been massively depleted by upstream diversions for towns and irrigation projects. The highly-stressed river is also potentially vulnerable to toxic, algal bloom outbreaks. Indeed, at the time of writing (early April), there are multiple algal blooms along a 500 km stretch of the Murray River from Wodonga to Barham. The promised environmental flow of 400 gigalitres has not yet eventuated, and in 2008 the Victorian town of Mildura, just over the border from South Australia had (at 348 litres per person per day) the dubious distinction of topping the State in terms of water consumption. This was a year when the town had thirteen consecutive days above 35 degrees in March and the State's lowest level of winter rainfall. It is perhaps no surprise that in March 2009 the South Australian government signalled that it was planning a High Court challenge against the three upstream States for their 'theft' of water from the Murray. Victoria's 4 per cent 'cap' on the amount of water that can be traded out of that State's irrigation districts is a particular target of the legal threat which, if carried through, makes a mockery of the national water agreement. Both the NSW government and irrigators are also supportive of the challenge on the grounds that if Victoria holds fast to the 4 per cent cap this will mean that that State is unduly targeted for water purchases by the Commonwealth government. In the meantime, the South Australian government may well be forced to purchase water at high prices on the open market. - if indeed it can source supplies.

In the face of these problems, our major metropolitan centres continue to expand rapidly. At one stage, Queensland's (former) Premier Beattie made great play of the fact that, each week, a thousand people were deserting southern climes and relocating to south-east Queensland. The rate has subsequently declined but that particular region still attracts some 25,000 new migrants a year from New South Wales and Victoria. Similarly, it was estimated in 2002 that Melbourne would reach a population level of 4.5 million by 2030. Six years later it had become clear that that total would actually be reached ten years earlier. With around 25 per cent of all overseas migrants settling in Melbourne, the city's population has greatly exceeded the total that was projected when the Thomson Dam was initially designed. The ever-growing demand for water in a drying climate means that cities are being forced to look further and further afield for this scarce resource. The Thomson Reservoir, for instance, is 100 kms from Melbourne but sources its water even further away from the far side of the Great Dividing Range via a series of extensive tunnels. Inevitably, this water 'colonisation' process is fuelling escalating conflict with competing rural consumers, many of whom have been receiving vast allocations for such crops as rice and cotton at very low prices for many years.

The backlash against dams

As noted, notwithstanding the notoriously erratic rainfall and high evaporation and siltation rates, dams and their associated reservoirs traditionally have provided the favoured option for the provision of water for cities and farms in Australia. The rapidly-growing south-east Queensland region, for example, traditionally has relied on dams for 95 per cent of its water supply. The post-war period between 1950 and 1990 saw

the completion of almost 90 per cent of the country's water storage capacity. However, particularly since the publication (in 2000) of the landmark, World Commission on Dams' (WCD) overview of the serious problems associated with many such structures, a global backlash against dam construction and its negative consequences has rapidly gathered pace, not least in Australia.[24]

The release of this report coincided with publication of the results of a national audit of Australia's water resources which showed that 26 per cent of the areas evaluated were either 'close to or overused when compared with sustainable flow requirements'.[25] South-east Queensland's, controversial, 300,000 megalitre Paradise Dam, for example, was eventually completed in 2005, even though a much cheaper and less environmentally damaging option had been proposed by the Institute for Sustainable Futures. At the time of writing, there is an ongoing and unresolved conflict over the proposed construction of the 660,000-megalitre Traveston Crossing Dam on the Mary River in the Sunshine Coast hinterland of south-east Queensland. The former Premier Beattie proclaimed that this dam would be built, 'feasible or not', but opponents have consistently highlighted the exorbitant cost of the proposal, the unacceptable loss of valuable farmland at a time when 'food-miles' are becoming an important consideration in food production worldwide, and the likely extinction of the internationally significant Australian Lungfish.[26] Interestingly, the evidence from Queensland, in particular, is that domestic consumers are often remarkably willing to assume their civic duty and reduce their water consumption in a collective crisis. But what is increasingly puzzling to many is the current and planned escalation in the price of water charged by water retailers in Australia on the grounds that householders are being too conservation-minded and are not consuming enough water for the retail companies to sustain high profits! Price increases of as much as 97 per cent in some instances have been flagged to start from 1 July in Victoria but these have yet to be approved by the Essential Services Commission.[27]

'Water dreaming' – 21st century style

In the face of well-organised opposition to dam proposals, State governments (often with the active assistance of the Commonwealth) are now turning their attention to two alternative options. These are long-distance water transfers and desalination. Both are highly centralised supply-side 'solutions' in terms of their ownership and control, and both are also extremely expensive to implement. The current Victorian State government, for example, is strongly committed to both approaches. Construction has already started on a pipeline to transport 75 billion litres of water a year, 70kms to Melbourne from the Goulburn River, a major tributary of the already stressed Murray. But there are big question-marks around this project. Under the State's *Water Act* irrigators are entitled to at least 900 gigalitres from the Goulburn system prior to any other commitments for the water. But in 2007-08 only 603 gigalitres were in fact available. There is also the energy question. A cubic metre of water weighs a tonne and it takes a great deal of energy to force large amounts of water over hilly terrain. As we shall see, heated controversy also surrounds a proposal to construct a large, $3.1 billion, desalination plant on the coast in South Gippsland. Interestingly, across Australia, water recycling, the construction of new dams and reservoirs close to cities, a major reduction in irrigation farming, as well as regulations enforcing domestic and industrial users to install water tanks, are generally viewed as being much less acceptable. Information about the scale of *industrial* water use, in particular, has only recently been publicly aired. Only 200 companies, for example, account for 10 per cent of Melbourne's total water consumption. Six of these consume over 1 billion litres each and eighty-seven of them use over 100 million litres.

Whether we are talking about the provision of energy or water, the possible policy options are always the same: governments and private enterprise can follow either the **supply** or **demand management** pathways. The first, 'unlimited growth' alternative, involves constantly increasing the total supply to meet projected demand. There are serious problems with this approach. In particular, it sends the clear message that it is acceptable and appropriate for consumption to continue as before and that we can always rely upon new and expanded infrastructure coming on line to satisfy the escalating levels of demand. But such 'path dependency' has the effect of 'locking out', or marginalising, alternative solutions. In *Last Oasis* Sandra Postel situates desalination technology in the same category as mega-diversion water projects. She argues that 'desalination remains a solution of last resort' and that building such high-cost facilities merely has the effect of delaying 'the onset of the water efficiency revolution so urgently needed'.[28] Postel is by no means alone in her criticism of desalination. In Australia, Anna Hurlimann too agrees that desalination should only be the water supply solution of 'last resort', when all else has failed,[29] and Maude Barlow – a leading advocate in the international, water justice movement - has warned that 'desalination is more open to private sector participation than any other part of the water business'.[30] The second, 'steady state', or 'conservation', option focuses much more on the 'three R's' of reduction, reuse and recycling, so that the need for additional supply is either unnecessary or greatly reduced. Desalination, to which we now turn, sits firmly in the 'supply-side' category.

Desalination

Earlier, mention was made of another recent intrusion into the coastal zone in the form of industrial wind factories. The history of the aggressive marketing and – by degrees – gradual acceptance of this energy 'magic bullet' to reduce greenhouse gas emissions closely mirrors the decades-long public relations' campaign to promote mega-scale desalination plants worldwide as the 'Holy Grail' for the water crisis. First, from the 1920s and 1930s onwards we find a number of prototype working examples of desalination plants in such places as the Netherlands Antilles and Saudi Arabia. Then, in the early 1960s a major boost is provided by John F Kennedy when he proclaims that the technology 'can do more to raise men and women from lives of poverty than any other scientific advance'.[31] The commercial desalination of sea water first made its appearance around this time in the Arabian Gulf region, but in the United States and Australia, in particular, there was little interest in the technology by governments for many years until its sudden 'rediscovery', following persistent corporate lobbying in the 1990s. As recently as November 2006, Victoria's (then) Premier, Steve Bracks, openly dismissed the technology on the grounds that 'The energy consumption is enormous, the intrusion on the community is enormous and, of course, it's extraordinarily expensive'.[32]

Some of the Middle Eastern countries involved from an early stage now derive as much as 90 per cent of their water from this source and the Gulf region accounts for well over a half of total global capacity. North America and Europe, combined, account for an additional 30 per cent and Australia currently produces about 1 per cent of desalinated output. The main stated advantage of the technology is that it removes the uncertainty associated with reliance on erratic rainfall; it is a 'climate resilient' source of water. Put simply, desalination is an umbrella term for a range of techniques involved in the process of removing salt from sea water, brackish groundwater or surface water, either by distillation or membrane technologies (reverse osmosis) to make it useable either for irrigating crops, for specific industrial processes or for human consumption. Distillation is by far the most common practice; it involves the twin processes of boiling

and condensate collection. 'Desalination' is also sometimes used to refer to the removal of salts and minerals from the soil to increase its agricultural productivity.

In this paper the main focus is on the desalination of sea water to produce drinking water for domestic consumption in Australia. As with dams in the past, this has emerged recently as an extremely controversial issue in several States, most notably in Victoria, where a proposed coastal 'water factory' on an unspoiled stretch of surf beach, far from the centre of consumption, has been the subject of strong opposition on a number of grounds.[33] It is also worth mentioning in passing that desalination has also been proposed recently to rescue Australia's single most important vegetable-growing area at Werribee, on the coastal periphery of western Melbourne. Since 2004 the area has been using treated, recycled water to irrigate such crops as cauliflower, lettuce and broccoli for the two major supermarket chains. But as the drought has tightened its grip the water has become increasingly saline and this is having a serious impact on the quality of the produce.

It is always essential to discuss desalination from the perspective of a specific country, region, or indeed, site. Broad scale generalisations about the appropriateness of the technology for all countries or situations are not useful for the simple reason that in some places there are few other alternatives. Submarines and aircraft carriers, for example, routinely produce their drinking water through desalination (often using nuclear power), as do many island communities. The small, Penneshawe desalination plant on Kangaroo Island, South Australia, has been using the reverse osmosis technique to produce around 300 kilolitres of potable water each day since 1999. Increasingly, too, remote Aboriginal settlements are investigating the feasibility of using small, solar-powered desalination units to turn brackish ground water into fresh drinking water. Queensland alone has some 20 small desalination plants in such locations as the Torres Strait and Hamilton Island. They perform a valuable function in areas where there are few alternatives for fresh water and are clearly in a quite different category from the multi-million dollar mega-projects that are currently on the drawing board in many countries.

Saudi Arabia, of course, has extremely limited freshwater reserves, but abundant energy resources. It is no surprise then to learn that this particular country has around a quarter of the globe's installed desalination capacity and is also home to the world's largest desalination plant at Jebel Ali, with a potential annual output of 300 million cubic metres. To put this in perspective, the largest desalination plant in the United States – the trouble-plagued Tampa Bay facility in Florida - has only around 12 per cent the output of Jebel Ali.[34] Situated in one of the driest parts of the world, Dubai's 1.2 million residents consume 221,000 megalitres of water a day. Per capita, this is 40 per cent higher than Melburnians, for example, and the entire output is provided by desalination. Needless to add, such a high level of dependency on one source carries with it enormous risk for example from a terrorist attack, pollution from an offshore oil spill or from hazard events such as earthquakes or storm surges. This was brought to the world's attention during the 1991 Gulf War when oil slicks posed a very real threat to several desalination plants. Closer to home, the 80 km oil slick that washed up on Queensland's Bribie and Moreton Islands and the Sunshine coast in March 2009 was a stark reminder that Australia is not immune to this threat. Israel, too, has had an ambitious, Desalination Master Plan in place since 2000. A series of coastal plants to serve urban needs have been constructed and the objective is to scale up annual production to 750 million cubic metres over the coming decade.

A major problem with desalination is the amount of energy required, both in the production process and sometimes in transport thereafter. Riyadh, for example,

consumes desalinated water that has been pumped 320 km inland. The energy question is clearly a huge problem at a time when countries and corporations are being urged to reduce their carbon footprint. With Australia's already excessive level of per capita greenhouse gas emissions, it is disturbing that calculations of the impact of Sydney's proposed desalination factory point to the release of around 945,000 tonnes of carbon dioxide annually, or the equivalent of consuming two litres of petrol to produce 1000 litres of water.[35] A particularly controversial issue now is the opportunity that has been seized upon by proponents of the nuclear industry to power desalination plants with nuclear energy. The *International Journal of Nuclear Desalination* has now been in existence for five years and already, in Japan, eight desalination plants are coupled with nuclear power stations.

Energy consumption varies considerably depending upon the technique used (distillation or reverse osmosis), and the salt content and temperature of the water being treated. Distillation requires energy for heating and reverse osmosis requires it for forcing water through membranes under extremely high pressure. Desalination plants are also expensive to run and maintain, though there are scale considerations here. They also have a limited life-span. The city of Santa Barbara, in the United States, for example, made a decision in 2008 to decommission its desalination plant after eighteen years of operation on the grounds that there were more economic ways of providing water. The plant was originally constructed with US$34 million of public funds and, when operational, provided more than 50 per cent of Santa Barbara's needs. As a general rule, the larger the plant, the cheaper are the costs of production. A factory producing 100 megalitres a day has the capacity to deliver water for around $AU1 per kilolitre, but this could increase fourfold for a smaller facility operating in less favourable conditions. Over the last two decades the cost of producing water by the reverse osmosis technique has effectively halved because of technical advances, and most new plants employ this technology.

Another problem with desalination plants relates to the large volumes of highly concentrated brine and other contaminants that are emitted into the ocean. Depending upon the saltiness of the water being treated, the proportion of the original feed flow that is discharged can vary from as low as 20 per cent to as high as 70 per cent. Depending, too, upon the detailed configuration of the offshore terrain and the localised tidal and current regime, this can have a serious impact on marine ecosystems and has to be very carefully monitored and managed.[36]

Worldwide there are now around 15,000 desalination plants in operation. These vary enormously in size from small-scale, localised units to enormous plants like Jebel Ali. Total capacity worldwide from this process is now some 34 million cubic metres of water, enough to provide drinking water to about 160 million people at the minimum of 200 litres per person per day. Approximately 60 per cent of this derives from the conversion of seawater and 23 per cent from brackish water. The Millennium Development Goals (MDGs) aim to significantly improve access to clean and reliable drinking water for the world's very poor. A high proportion of these are among the 2.4 million people living in coastal regions, and if the costs come down further it is likely that desalination will play at least some part in addressing this problem.

Australia converts

Global Water Intelligence is the key mouthpiece and agenda-setting agency of international companies such as Veolia and Acciona involved in water privatisation and the desalination business. Its most recent report on Australia (September 2008) is effusive in its assessment of the potential market for this technology:

Very rapidly over the next decade, Australia will become one of the most important markets in the world for water scarcity solutions, and an opportunity for overseas investors…We forecast desalination capacity in Australia to rise from 628,000 cubic metres per day in 2008 to 4.2 million cubic metres per day in 2017…By 2017 Australia's water sector will be very different. It is likely to move towards the Israeli model where urban centres reduce their dependence on natural water resources to free these up for the agricultural sector.[37]

At the time of writing there is only one large-scale desalination plant operating in Australia. This is the Kwinana facility in Western Australia that began operations in 2007 and now supplies Perth with approximately 40 million gallons of drinking water a day, or 17 per cent of the city's current consumption. The stated rationale for the construction of the Kwinana facility (which uses 24 megawatts of electricity each year) was that the Perth region has experienced a dramatic, 21 per cent fall in rainfall over the last decade and is also experiencing a population explosion of 3 per cent per year (or 750 families a week). What was not acknowledged was the unprecedented level of unregulated and unmetered pumping of freshwater from underground aquifers that has also been occurring for decades in the Perth region.[38] The architects of the Kwinana scheme have partly addressed the 'excess energy' argument by sourcing some of the energy from 48 wind turbines. Peter Fisher's response to this is lukewarm: 'Unfortunately, at the rate we're seeing reverse-osmosis desalination introduced, wind farms will only succeed in slowing the shameful rate of growth in emissions'.[39]

Western Australia is also committed to the construction of a second plant to the south of Perth which will mean that by 2011, 30 per cent of that city's drinking water will come from the two plants. One proposal, currently being considered, is for Perth to have a total of six coastal desalination plants. Sydney, too, is now proceeding with the construction of a facility on industrial land at Kurnell that initially will produce 250 million litres of fresh water a day. Interestingly – as in Victoria - this follows a recent, dramatic reversal of NSW State government policy on desalination. BHP Billiton also wishes to build a desalination plant in the Upper Spencer Gulf for its Olympic Dam expansion program in South Australia and construction of Adelaide's first desalination facility has already started at Port Stanvac on the site of an old oil refinery. This $1.1 billion project has been fast-tracked by the State government and is now expected to be operational by 2011. Output is projected to be some 50 billion litres annually, around a quarter of Adelaide's needs. Also, following the worst rainfall figures for more than a century in South-east Queensland in 2006-07,that State is in the final stages of commissioning a new (45,600 megalitres per annum) desalination plant at Tugan on the Gold Coast though a start-up date has been delayed because of technical problems. As well, Queensland is actively considering another six sites further north. As noted, the Victorian government is also fast-tracking the approval process for construction of a plant in South Gippsland that would supply Melbourne with 150 billion litres of water a year (a third of its annual demand), again from 2011 onwards. As in NSW, this represents a dramatic reversal of previous government policy on this issue. The remainder of this article summarises the controversy that has dogged the South Gippsland proposal since it was first mooted. Many of the criticisms levelled at this particular development are applicable to other coastal desalination plants, both in Australia and elsewhere.

The South Gippsland Desalination Plant controversy

Over the last decade, the State of Victoria has experienced both a 20 per cent reduction in precipitation and a 30 per cent rise in the evaporation rate. Attention has also been drawn, earlier in the paper, to Melbourne's high level of population growth

and the newly-emergent set of problems associated with the 'Black Saturday' bushfires. On top of all this, the State government's heavily promoted 'Target 155' campaign (to cap individual water consumption at 155 litres per day) has manifestly failed to reach its target over the course of one of the hottest summers on record. The one, overriding justification that has been put forward by the government for the proposed 40-hectare plant at Williamsons Beach between Kilcunda and Wonthaggi (some 100 kms to the east of Melbourne) is that desalination is not dependent on unreliable rainfall and therefore guarantees water security into the future. In addition, the argument is put forward that such a facility means that there is no necessity to dam additional inland rivers for reservoirs. With a projected output of 150 gigalitres (expandable to 200) the proposed plant would be by far the largest in Australia. It is some ten times larger than Western Australia's Kwinana facility and has been touted as the single, biggest infrastructure project in Victoria's history.

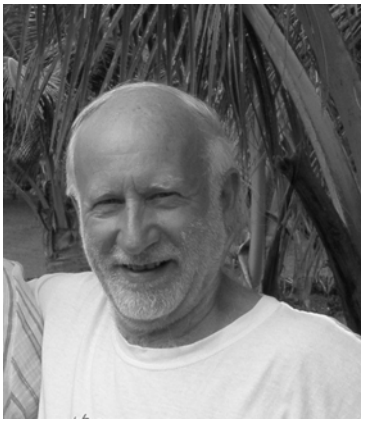
Oppositional groups such as 'Your Water Your Say' (YWYS), on the other hand, emphasise that large-scale desalination should always be a last resort in a country like Australia and that a much greater emphasis should be placed on longterm policies encouraging water recycling, demand management and the minimisation of wastage (especially stormwater) from existing infrastructure. Clearfell logging, for example, is currently taking place in some of Melbourne's water supply catchments. One assessment is that if the practice ceased this would add an extra 130 litres of water per household daily, or around 16 per cent of the city's current consumption. Given that desalination plants have only a relatively short life-span of around 25 years, it certainly makes sense to adopt policies that are of longterm benefit. It has been calculated that the money to be spent on the desalination facility could instead be used to equip 600,000 households with tanks and that this would yield more water than that produced from the proposed plant. An alternative, and much cheaper, proposal to pipe 550 gigalitres of water a year by gravity from Tasmania is also not favoured by the government.[40] Moreover, notwithstanding that the Victorian State government (through its Coastal Strategy) has stated its commitment to the preservation of the coastline from overdevelopment, the proposed Kilcunda development is in an area of extremely high conservation and recreational significance that, coincidentally, may be under threat from sea-level rise, storm surges and coastal subsidence.[41] As in Florida, there is a major concern that water and land use planning along the coast have not been coordinated to any degree and that the proposed facility will in fact encourage further residential development.[42] There are also many uncertainties surrounding the impact on the marine environment, tourism and recreation, of pumping 200 billion litres of high temperature, hyper-saline brine back into the ocean each year.[43] Thirty-thousand tonnes of sludge contaminated with iron will also be produced and stored on land.

Two other significant issues relate to **energy use** and **funding**. As noted, desalination consumes significant amounts of energy and therefore contributes to greenhouse gas emissions. While the minimum energy required is theoretically less than one kWh per cubic metre, actual consumption is frequently in the range of 3-15 kWh. Calculations point to the South Gippsland facility as generating around one million tonnes of carbon dioxide a year. As noted, even if this is 'offset' by renewable energy, there is still the concern that encouragement is being given to higher and higher levels of energy consumption. In terms of funding, two French consortia (Veolia and Degremont) were shortlisted in September 2008 to design, build and operate the plant, but at the time of writing (March 2009), because of the global credit squeeze, there are serious doubts as to where a funding shortfall of up to $2 billion is going to be made up. There has also been a substantial and unanticipated cost blow-out in the legal fees associated

with such things as contracts, landholder compensation, compulsory acquisition of properties, access rights, and the like. One possibility being canvassed is for Veolia – the company currently constructing the troubled Gold Coast plant - to link up with the multi-billion dollar construction workers' superannuation fund, Cbus, chaired by former Premier, Steve Bracks.[44]

As with the highly controversial (and currently shelved) Bald Hills wind farm close by in South Gippsland, the Kilcunda water factory project has exposed deep-seated divisions within the local community. On the one hand it provides some employment for local contractors. But on the other it has always been strongly opposed by the well-organised environmental and recreational group, YWYS. In 2008 the group attempted to stop work proceeding by making an application to the Federal Court challenging the Environment Minister's decisions under the Commonwealth's *Environment Protection and Biodiversity Conservation Act* (*Your Water Your Say Inc v Minister for the Environment, Heritage and the Arts [2008] FCA 670*). The challenge was ultimately dismissed by Judge Peter Heerey, and costs were awarded against YWYS, which was then forced to disband. In the same year costs were also awarded against the Blue Wedge Coalition in the Federal Court. This is the coalition of environmental interests that was actively opposing the Victorian government decision to allow channel-deepening to proceed in Port Phillip Bay.

What is abundantly clear at the present time along the Victorian coast is that large-scale infrastructure projects that are deemed by the State government to be in the national (or State) interest appear to have only the slimmest chance of being halted by the well-meaning actions of environmental groups with limited financial resources. If and when the financial details are negotiated and the successful bidder named later in 2009 Victorians will witness the construction of a water factory the size of the Melbourne Cricket Ground on an unspoiled stretch of coastline. Public access to the beach will no longer be possible and the water produced will of course be fully privatised. Less costly, less environmentally destructive and more decentralised/distributed solutions have been summarily dismissed by the current Victorian State government. This is the face of Australian/French water-dreaming, 21st century-style.



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1 Frawley, Kevin (1987). *Exploring Some Australian Images of Environment,* Working Paper 1987/1, Department of Geography and Oceanography, Australian Defence Force Academy, Canberra.

2 Powell, Joseph, M (2000). 'Snakes and cannons: water management and the geographical imagination in Australia', in Dovers, S (ed) *Environmental History and Policy: Still Settling Australia,* Oxford University Press, South Melbourne: 47-71.

3 Walker, KJ (1999). 'Statist developmentalism in Australia', in Walker, KJ and Crowley, K (eds) *Australian Environmental Policy 2: Studies in Decline+Devolution,* University of New South Wales Press, Kensington: 22-44.

4 McDonald, Edward, Coldrick, Bryn and Christensen, W (2008). ' The green frog and desalination: A Nyungar metaphor for the (mis-)management of water resources, Swan Coastal Plain, Western Australia, *Oceania,* 78: 62-75.

5 Homer-Dixon, Thomas (2006). *The Upside of Down,* Text Publishing, Melbourne; Diamond, Jared (2005). *Collapse: How Societies Choose to Fail or Survive,* Allen Lane, London; White, Mary (1997). *Listen…Our Land is Crying. Australia's Environment: Problems and Solutions,* Kangaroo Press, Kenthurst, NSW.

6 The Pacific Institute (2009). *Water Scarcity and Climate Change: Growing Risks for Businesses and Investors,* Oakland, California: 1.

7 World Wildlife Fund (2008). *Living Planet Report,* Gland, Switzerland; Hoekstra, AY and Chapagain, AK (2006). 'Water footprints of nations: Water use by people as a function of their consumption pattern', *Water Resources Management,* 21, 1: 35-48.

8 Pearce, Fred (2009). 'China drought forces huge water cutbacks', *New Scientist,* 201, 2696: 6.

9 Rogers, P *et al* (eds) (2006). *Water Crisis: Myth or Reality?,* Taylor and Francis, London.

10 World Commission on Dams (2000). *Dams and Development: A New Framework for Decision-Making,* Gland, Switzerland; Strang, Veronica (2004). *The Meaning of Water,* Berg, Oxford; Whiteley, John M, Ingram, Helen and Perry, Ricjard Warren (eds) (2008). *Water, Place and Equity,* The MIT Press, Cambridge, MA.

11 Gleick, Peter H (2008). 'Can California's water problems be solved?' *Ecology Law Currents,* 35: 71-79.

12 Cathcart, Michael (2008). 'The Water Dreamers', *Hindsight,* ABC Radio National, 15 June.

13 Brady, Edwin J (1918). *Australia Unlimited,* G Robertson, Melbourne.

14 Resource Assessment Commission (1993). *Coastal Zone Inquiry: Resources and Uses of the Coastal Zone,* Information Paper No 3, Canberra.

15 Melbourne Water Resources Review (1992). *Water for Our Future.* Interim Report, Melbourne: 171.

16 Idriess, Ion L (1941). *The Great Boomerang,* Angus and Robertson, Sydney.

17 Bradfield, JJC (1941). 'Watering inland Australia', *Rydges,* October: 586-90; Powell, Joseph M (1991). *Plains of Promise, Rivers of Destiny: Water Management and the Development of Queensland 1824-1990,* Boolarong Press, Brisbane.

18 Strange, Carolyn and Bashford, Alison (2008). *Griffith Taylor: Visionary Environmentalist Explorer,* National Library of Australia, Canberra.

19 Davidson, Bruce R (1969). *Australia Wet or Dry? The Physical and Economic Limits to the Expansion of Irrigation,* Melbourne University Press, Carlton.

20 Davidson, Ken (2009). 'The bushfires could worsen our water crisis', *The Age* (Melbourne), 26 February.

21 CSIRO (2001). *Climate Change Projections for Australia.* CSIRO Atmospheric Research, Melbourne.

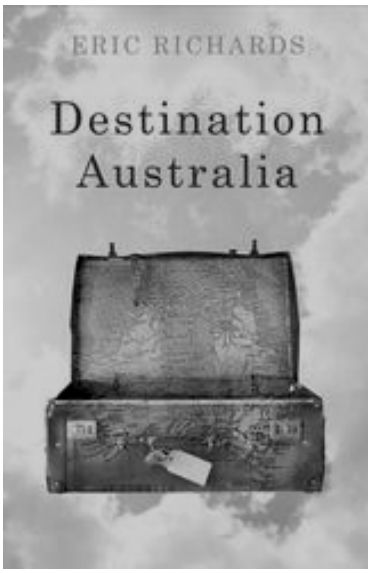
22 Spearritt, Peter (2008). 'The water crisis in Southeast Queensland: How desalination turned the region into carbon emission heaven', in (ed) P Troy, *Troubled Waters: Confronting the Water Crisis in Australia's Cities,* ANU E Press, Canberra: 19-36.

[23] Cited in: Kellow, Aynsley (2008). *The Politics and Science of Climate Change: The Wrong Stuff.* Harold Clough Lecture, Institute of Public Affairs, Perth.
[24] The World Commission on Dams (2000) *op cit.*
[25] Land and Water Australia (2001). *National Land and Water Resources Audit (NLWRA), Australian Water Resources Assessment 2000: Surface Water and Groundwater – Availability and Quality.* Canberra.
[26] Pyper, Wendy (2006). 'Queensland's dam strategy raises bigger questions', *Ecos,* 133: 14-17.
[27] Ker, Peter (2009). 'Falling use pushing up water prices', *The Age* (Melbourne), 5 January.
[28] Postel, Sandra (1992). *Last Oasis: Facing Water Scarcity,* WW Norton, New York: 46-47.
[29] Hurlimann, Anna (2007). 'Time for a water re-"vision"', *Australasian Journal of Environmental Management* 14, 1: 14-21.
[30] Barlowe, Maude (2007). *Blue Covenant: The Global Water Crisis and the Coming Battle for the Right to Water,* The New Press, New York: 73.
[31] Kennedy, JF (1961). *Speeches of Senator John F Kennedy: Presidential Campaign of 1960.* US Government Printing Office, Washington D.C.
[32] Quoted in: 'Desalination just got even harder to pay for', *Editorial, The Age* (Melbourne), 10 March 2009.
[33] Doherty, Ben (2008). 'A pristine beach, a decision and a wave of discontent', *The Age* (Melbourne), 5 January.
[34] Yuhas, Emily and Daniels, Tom (2006). 'The US freshwater supply shortage: Experiences with desalination as part of the solution', *Journal of Environmental Planning and Management,* 49, 4: 571-585.
[35] Australia Institute (2005). *Greenhouse Implications of the Proposed Sydney Desalination Plant,* Webpaper, July.
[36] Cooley, Heather, Gleick, Peter H and Wolff, G (2006). *Desalination, With a Grain of salt: A California Perspective,* Pacific Institute, Oakland.
[37] Global Water Intelligence (2008). *Water Market Australia,* Oxford: 2-3.
[38] McDonald, Edward, Coldrick, Bryn and Christensen, W. (2008) *op cit.*
[39] Fisher, Peter (2009). 'Big solutions for our water needs will use even more energy', *The Age (*Melbourne), 9 March.
[40] Davidson, Kenneth (2007) 'Desal option doesn't hold water against alternatives', *The Age* (Melbourne), 10 December ; Davidson, Kenneth (2008). 'Tasmania could solve Victoria's water problem', *The Age* (Melbourne), 3 March.
[41] Gippsland Coastal Board (2008). *Climate Change, Sea Level Rise and Coastal Subsidence along the Gippsland Coast.* Final Report, Phase 2 of the Gippsland Climate Change Study, Bairnsdale, Victoria; Smith, Bridie (2009). 'Coastal flooding threat now "urgent"', *The Age* (Melbourne), 12 March.
[42] Yuhas and Daniels (2006) *op cit.*
[43] Ker, Peter (2009). 'Marine expert hits desal claim', *The Age* (Melbourne), 17 January.
[44] Millar, Royce (2009). 'Desal funds dry up as credit crisis squeezes giant projects', *The Age* (Melbourne), 9 March; Ker, Peter (2009). 'Bracks back in desal waters as bidders eye funds', *The Age* (Melbourne), 11 March.

Books

***Destination Australia*.** By Eric Richards. University of NSW Press, 2008.

Australia is one of a handful of 'modern' societies creating its institutions, practices, economy and culture through mass recruitment of immigrants from elsewhere. Most of the literature recognises the Australian experience as beneficial and successful. But no mass migration program is without its problems. The 'lost legions' of those who returned to Britain in the 1930s, the 1960s and 1970s, have received little attention. They were a source of much concern to the Australian authorities, who finally began to look at the hostels which had been such a source of resentment in the 1960s. By 1983, governments of both parties had decided there was no further point in the 150-year old practice of paying the British to come. British migration never recovered. Mass migration continued without them, but it was no longer aimed at building a 'British' nation.



Other problems centred around the admission of migrants who should have been kept out or at least scrutinised more carefully. The great majority of these until 1975 were Europeans. Yet despite these mistakes and problems, society was not dramatically disturbed, even by the 'war on terror', which had none of the impact felt in Europe. With some criminal exceptions, most migrants were integrated into suburban society. Most analysis suggests a lower crime rate than for the majority population. Yet still the critics were not happy. They discovered 'values' and the 'Judeo-Christian ethic' as a substitute for 'race'. Then the world financial crisis gave them a reason for limiting immigration – the same one as in 1930.

This ambivalence towards immigration is reflected in much of the academic literature. For economists, who have recently dominated this field, immigrants are factors of production, hopefully improving the human capital of the society they join. Sociologists, psychologists and political scientists, in contrast, focus on ethnic tensions, nation building and assimilation, often seeing immigrants as potential problems, in which they reflect much public opinion. Historians have more choice. They can rely on 'letters home', as do such chroniclers of the Irish diaspora as David Fitzpatrick. Migrants then become unique human beings, though often with remarkably similar experiences and attitudes. It is this approach which appeals most to Eric Richards in his latest study, *Destination Australia.* He starts his story in 1901, with the creation of the Commonwealth and its constitutional powers to control immigration, citizenship and 'races other than Aborigines'.

There are good reasons for starting in 1901. The convicts and gold rush migrants can be left out, as they have been very well covered elsewhere. 'White Australia' had become a settled policy, although its origins go back as far as the 1850s and were well entrenched by the 1880s. Despite the emphasis on 'greater Britain', the British government had withdrawn from active involvement in immigration by the 1870s. Assisted passages were important in the 1880s, especially in Queensland. The

Commonwealth shared the immigration power with the States at least until 1920. Two crucial changes of direction took place well after Federation and are given their rightful place here. The active encouragement of non-British immigrants began under Arthur Calwell in 1947 and eventually transformed the basis of recruitment altogether. The ending of White Australia finally came in 1972. What had been a settled consensual policy at the 1901 Commonwealth election has faded so fast that students sometimes argue that 'there really was no White Australia policy (sir)'. This reflects the poor state of immigration history being taught to the young before people like Eric Richards started to fill this gaping void.

This excellent and long overdue study proceeds chronologically, as befits a history. But it is history from below, with the main emphasis on the immigrants, who were essentially working class British as late as the 1960s, and then humble citizens of the world into the present. These Richards terms 'the great diversifications of the 1950s and 1960s.' Each chapter sets the story within a decade or so of shifting priorities and goals, without spending too much time on the often intricate details of changing public policy. He agrees with most others that the 1920s were an unfortunate interlude, stuck between the imperial excitement of World War I and the crushing depression of 1929. The myth of rural Australia, to which migrants were expected to move, led to bizarre expectations that British migrants from one of the world's first industrial nations, would just love the Australian bush and not seek to 'crowd into the cities'. Those who did go to the bush, especially in Queensland, were the unwanted and unpopular southern Europeans.

The Commonwealth authorities had learnt a lot by the 1950s. The creation of a distinct Immigration Department led to a more coherent policy, including the mass recruitment of Displaced Persons from the camps of central Europe. Retired departmental officers still take pride in this massive endeavour. However it was posited on maintaining White Australia. In time the Department became a brake on change, with Foreign Affairs and Prime Minister's being more actively concerned with reaching out to Australia's newly independent neighbours.

Each chapter includes vignettes of migrant life, aspirations and hopes. As a rule, migrants had no idea what Australia was like. Many were amazed at how old fashioned it looked in the 1950s and 1960s. Southern Europeans could not understand the Melbourne Sunday and solved the problem by breaking the law until more reasonable laws were available. As recruitment moved away from Britain there were appeals for assimilation, which was official government policy until well into the 1960s. Most non-British immigrants ignored this .Their clubs, churches and media are still flourishing, but their children speak English. All this is recorded in personal reminiscences. This approach to history is very painstaking and the job is very well done throughout.

This is a very entertaining and informative study, fit to join Eric Richard's major work, *Britannia's Children* (2004), which traced the vast British diaspora created by emigration since the 17th century.

James Jupp

The SBS Story. By Ien Ang, Gay Hawkins and Lamia Dabboussy, University of NSW Press 2008.

No other country has anything quite like Australia's Special Broadcasting Service. In today's ideological climate its provenance may appear surprising; for although the Whltlam government gave us the word and the policies of multiculturalism, it was the opposing Coalition under Malcolm Fraser in 1978 who created SBS. What's more, the

next Labor government would have handed SBS over to the ABC had Bob Hawke not become worried that to do so might cost him the 1987 election and even his own multicultural seat.

`Special' was a cagey choice of name: `ethnic' would have been too restrictive, and `multiculturalism' too much of a mouthful. As a political and cultural phenomenon, SBS cries out for scholarly investigation. This book is the most sustained effort so far published. The authors are well placed for the job not only academically but personally. Ien Eng is 'of Chinese-Indonesian background' and she has lived in the Netherlands. Lamia Dabboussy's parents are Lebanese. Gay Hawkins grew up in the Sydney suburb of Epping as it was becoming more culturally diverse.

Their study was financed by the Australian Research Council and also by SBS. Their judgement remains scrupulously independent. The book is engagingly designed, and has a helpful time-line.

This is a valuable account of SBS's achievements, shortcomings and dilemmas. 'Three versions of multiculturalism', the authors find, 'have circulated within SBS over time: ethno-multiculturalism, cosmopolitan multiculturalism and popular multiculturalism'.

The terms are inelegant but serviceable. The first approach, most evident in radio, addresses 'the special needs and interests of migrants and ethnic communities'. The second encourages 'all Australians, whatever their background, to embrace global cultural diversity', and the third interprets multiculturalism 'as part and parcel of mainstream culture', no longer a cause to be promoted. SBS television, the authors show, has swung sometimes uneasily between the second and third options.

The authors make extensive and illuminating use of interviews with many of the people who have made SBS. They do not always place these interviews in contexts essential to our understanding.

Amid much testimony about the inadequacy of resources, we learn nothing about actual budgets. Here and elsewhere, the authors miss opportunities to set the SBS story alongside the ABC's. They do not even mention that the ABC's charter, like that of SBS, proclaims a commitment to the multicultural character of the Australian community. (A four-page bibliography has one item on the BBC and none on its Australian counterpart.)

Nor do we even glimpse the interaction of the SBS board with executives and program makers. The authors offer a short defence of this absence, but it won't do: like the ABC's governing body, the SBS board not only appoints the chief executives but engages with them on program strategies and intervenes in crises. There is a hint that the Howard government stacked the board with its mates, but no word either on the consequences or on Labor's practice. We are told that Sir Nicholas Shehadie, who occupied the chair for almost two decades, was a hands-on chairman. On what or whom did he lay his hands? And who is he? We are told that he regards SBS as 'the most exciting thing I've ever been associated with', but not what any of the other things have been, in the life of a businessman who had Lebanese parents, captained Australia at rugby, was lord mayor of Sydney, and has been a famously formidable antagonist in any field. He once offered the punchy opinion that multicultural Australia

might be best served if SBS took over the ABC. Of his successor for the last ten years, Carla Zampatti, we are told nothing but her name.

Nor are we briefed on any of the chief executives, whose experience and values have inevitably left their mark on programs. It is surely relevant, for example, to know that the present head of television, Shaun Brown, was picked for the job on the strength of his performance at New Zealand's commercialised public broadcaster. So the board can have been neither surprised nor dismayed when Brown pressed to have advertisements, hitherto confined to the intervals between programs, inserted into them – even into the news bulletins. The authors' account of responses to this innovation is even-handed except for their saying that SBS was 'forced' to adopt it. The change was a calculated choice, which I think at least two of Brown's predecessors would not have made. The authors do report the resignation in protest of the respected news presenter Mary Kostakides, and the judgement of a nameless viewer that the change was 'an act of outright vandalism.' I wish they had cited McKinsey's worldwide survey in 1999 which found that 'the higher the advertising figure as a proportion of total revenues, the less distinctive' – the more 'populist' - 'a public service broadcaster is likely to be.'

'SBS today', the authors conclude, 'is faced with the task of reinventing itself in light of two momentous developments: the emergence of the digital media world, on the one hand, and the changing nature of multicultural Australia, on the other. Plenty of work here for observant social scientists.

Ken Inglis

Sacred Places: War Memorials in the Australian Landscape. By Ken Inglis, MUP, third edition, 2008.

In 1960, in an article published in *Nation*, Ken Inglis first asked the question that would come to dominate so much of his scholarship over the next forty years: Had Anzac day become a 'substitute religion'? The very idea of 25 April as Australia's 'civil religion', now widely accepted, is due almost entirely to Inglis' work on the history of war memorials in *Sacred Places*, a history which has won numerous prizes, and itself become a monument to Australians' determination to remember their war dead.

The third edition of *Sacred Places*, published last year, includes a new epilogue, 'Towards the Centenary of Anzac', which covers the decade since 1998. At well over 100 pages, I wondered if this 'epilogue' might not have been better framed as a chapter. In the epilogue, Inglis covers the changes in the Anzac Day march, the increasing prominence of the Australian War Memorial, the role of national and state governments in encouraging the remembrance of military campaigns, the pilgrimages to Anzac Cove, the resurgence of Anzac Day, and the broader trend towards memorialisation of all kinds – roadside memorials, memorials to the victims of terrorism, memorials to those who have died in accidents and tragedies, and so on. As Inglis writes in his 'author's note', since 1998, 'there has been more making and remaking of war memorials…than at any time since the decade after 1918'.

At the beginning of the twenty first century, Australians live in a society in which those who die in military campaigns, terrorism attacks or in tragic circumstances – the sacrificial dead and the victims of accidental death - have an increasing hold over the minds of the living. As the centenary of Anzac Day approaches, there is little critical public debate about the history and meaning of 25 April. Recently, during the day of mourning for the victims of the Victorian bushfires in the summer of 2009, Kevin Rudd compared the efforts of fire fighters to the Anzacs, a demonstration perhaps, of the

way in which the Anzac myth has now become the key site of national mourning in Australia, a prism through which all our mourning, if it is to be seen as nationally significant, must ultimately be perceived. Whether we should continue to believe that Australia, or any nation for that matter, can only become a nation through blood sacrifice, is a question we seem to have stopped asking.

Inglis leaves no stone unturned in *Sacred Places*, and while I find his reading of the recent embrace of the Anzac myth too sympathetic, this difference matters little when compared to the quality of scholarship, immeasurable insight, and clear, elegant prose which can be found on every page of his work. Few Australian historians have produced work of this quality. *Sacred Places* has become a standard reference, not only for scholars but also for the general public. In ten years, in twenty years, and probably for much longer, it will still be found on the shelves of major bookshops, long after the rising tide of books on Australia's military history have retreated to their library tombs. For anyone even vaguely interested in Australian history, *Sacred Places* is essential and rewarding reading.

Mark McKenna

Editorial Note

There will be no August edition of *Dialogue*.

The Editor will be on long service leave in Alice Springs May-August, in part gathering background for the following two issues of *Dialogue*, which will be devoted to 'The Heartland', Central Australia. These issues will appear in December 2009 and April 2010.

Emeritus Professor Peter Karmel, AC, CBE, Economist and former President of the Academy 1987-1990, died on 30 December 2008.

An obituary will appear in the *Annual Report*.

Academy News

International Program

Australia – France Joint Action Program

Dr Simone Pettigrew and *Professor Stephen Charters* have reported on their project: 'Development and testing of data collection techniques to investigate unsafe alcohol consumption among young people in France and Australia'.

Visit report for Professor Charters, 17– 1 January 2008:

Objectives: to finalise organisational details of the research project; jointly run the first two focus groups in Australia; and in the light of the Australian focus groups, refine plans for the French focus groups.
Outcomes achieved: two focus groups took place; preliminary discussion about the findings in advance of formal analysis and coding; preparation for the visit of Dr. Pettigrew to France, and for the French focus groups; reviewed the methodology utilised, specifically the use of friends' networks for recruitment, images as stimuli and of small groups within the larger focus group.
Subsequent activities:

- Organisation of French focus groups, including translation of themes, selection of French and Australian images for use as stimuli.
- Planning for and organisation of the visit to France by Dr. Pettigrew.
- Coding of the Australian focus groups.
- Further literature search.

Visit report for Dr Pettigrew, 14 – 22 October 2008.

*Objectives: a*nalyse focus group data; in the light of the focus group findings, discuss potential data collection techniques for Stage 2 of the project; review potential funding possibilities to extend the project.
Outcomes achieved:

- Reviewed recruitment difficulties experienced in France due to cultural issues surrounding the discussion of alcohol consumption and decided upon alternative recruitment methods.
- Analysed the Australian focus group data to identify evident themes and the likely implications for Stage 2 of the project in terms of appropriate data collection methods for 15-18 year old drinkers.
- Discussed recent advances in theory and methodology relating to alcohol consumption among young people.
- Decided on a timeline for the remainder of the project.
- Observed the marketing of alcohol in the French context.
- Discussed a range of possible options for future funding of an extension of the project.
- Discussed possible publication outlets for the study findings.

Planned activities:

- Recruitment of participants for French focus groups
- Administration of French focus groups
- Coding and analysis of data
- Identification of similarities and differences between Australian and French data

- Final determination of appropriate data collection techniques for younger (15-18 year old) drinkers for Stage 2
- Administer Stage 2
- Preparation of a European Union grant application in conjunction with collaborators from other EU countries

Australia – UK Joint Action Program

In 2007, *Professor Deborah Brennan*, Social Policy Research Centre, UNSW received funding under the joint ASSA/British Academy scheme for a project entitled 'Child care, welfare reform and women's labour force participation'. Her counterpart in the UK, Professor Fiona Williams (Leeds University) received a matching grant from the British Academy. She reports below.

Funding was to enable collaborative discussion between the Australian team of Deborah Brennan (formerly Sydney, now UNSW) and Bettina Cass FASSA (UNSW) and the UK team of Fiona Williams (Leeds University) and Sue Himmelweit (Open University) on child care choices and policy trajectories in their respective countries. The original aims were to provide the groundwork for a new funding application through:

- An audit of official data sources including government statistics, budget documents, official reports, and qualitative research data.
- A mapping exercise which explores the comparability of our respective data sources.
- An analysis of the secondary literature on Australian and UK child care policy, as well as relevant literature from other countries.
- A framework for Phase 2 including a mapping of the relevant broad dimensions across which the Australian and UK experience will be analyzed and compared.

Our longer-term objective was to secure larger funding for a cross-national project. The possibility was also raised of extending the cross-national scope to include Canada (through the work of Professor Rianne Mahon at Carleton University) and possibly other countries.

In all of these respects our collaboration has been successful. The aims were achieved through the activities listed below. These include minor deviations from the original timetable (April 2007- March 2008) as well as additional activities and events from successful co-funding applications.

1. *Joint meetings:*

- 26 – 28 April 2007 Brennan and Williams were funded by University of Carleton to give papers at the *Workshop on Gender and Social Politics in an Era of Globalisation,* Carleton University, Ottawa organised by Professor Mahon which led to collaborative discussion with Mahon.
- 18 June 2007, Brennan, Williams and Himmelweit met in London. Brennan also met with UK child care researchers and members of key non-government organisations including the Daycare Trust and Institute for Public Policy Research. (Cass was unable to travel because of care commitments to a close family member). Brennan attended a workshop at the University of Leeds on Care and Population Change as part of a background preparation for an ESRC Centre application (Application short listed November 2007, but not funded).
- 7-14 July 2007. Williams was funded by the Social Policy Research Centre at UNSW to give the keynote address to the Biennial Australian Social Policy

Conference on *Shifting child-care policies and practices in Western Europe: is there a case for developing a global ethic of care*? This set out the frame for analysing child care policies in Europe. Brennan, Cass and Williams continued discussions. Williams also presented a seminar on her research on Sure Start to policymakers at Dept of Family and Community Services and Indigenous Affairs, Government of New South Wales, Canberra.

- 6-8 September 2007 Brennan, Mahon and Williams continued discussions and presented papers at the RC19 Conference on *Global Social Policy* at the University of Florence.
- 12-26 February. Brennan and colleagues gained funding from the Australian Research Alliance on Children and Youth to support an International Conference on *Early Childhood Education and Care* held at the UNSW with participants from Australia, New Zealand, UK, Canada and Sweden, including Australian policymakers. Williams and Himmelweit gave papers (travel funded by BA). Cass gained funding from the Social Policy Research Centre to organise a linked Workshop on Social Care at UNSW, which was co-funded by a grant obtained by Professor Marta Szebehely from Stockholm University, Williams and Himmelweit participated in this Workshop also, Himmelweit as overall discussant. This workshop expanded the concept of care to include elder care and disability care, so as to complement the Workshop on Early Childhood Education and Care. Subsequent discussions on a large cross-national comparative research proposal were held between Brennan, Cass, Himmelweit and Williams with Mahon (Canada), Hobson, Szebehely and Berqwist (Sweden). The focus of future research and future publications was agreed (see below).

2. Research resources produced:

- Conference papers by 4 collaborators (see below)
- Policy audits of UK, Canada, New Zealand, Sweden and Australia
- Literature review of policy debates in these countries, including mapping of key data sources produced in each national context

3. Framing future cross-national work

The workshop held at the University of New South Wales enabled the collaborators to refine themes for future collaborative research. These will include the diversity of ways in which governments are structuring markets for care, the framing of care issues in public discourse, variations in care cultures and care practices and the relationship between migration regimes and care policies in national contexts. As a result of this workshop and the associated meetings held in Leeds, London and Sydney made possible by this grant, we have decided to broaden our cross-national focus to include Canada (as a 'liberal welfare state' in common with UK and Australia) and Sweden (as the 'exemplar social democratic welfare state' which was now showing trends towards liberalism). It was also agreed that the frame within which we looked at child care needed to be broader to be able to include other aspects of care policy (elder care, disability). One such frame is provided by Williams' paper RC19 2007, ARACY,2008) on the Global Political Economy of Care which identifies 5 key dimensions for an analysis of the global political economy of care:

- transnational movement of care labour
- transnational dynamics of care commitments
- transnational movement of care capital
- transnational influence of care discourses and policies

- transnational development of social movements, NGOs and grassroots campaigns.

Future publications are to include at least two special issues of journals – including *Social Policy and Society* and *Social Politics.*

Additional research funding

In the second half of 2008, together with other colleagues, we applied for funding from the Nordic Centre of Excellence to further progress our comparative research on child care policy. We learned in December 2008 that our application had been successful.

Publications resulting from collaboration

Brennan, D (ed) (2008). *Building an International Research Collaboration in Early Childhood Education and Care*, Social Policy Research Centre.

Williams, F (2008). 'The Intersection of Child Care Regimes and Migration Regimes: a Three–country Study'(with A Gavanas) in H Lutz (ed). *Migration and Domestic Work: a European Perspective on a Global Theme.* London, Routledge.

Conference presentations resulting from collaboration

'The Market at Play: Public Agendas and Private Profits in the Provision of Child Care', Presented at Dilemmas of Human Service Provision, University of East London, September 2008 [Paper will be published in conference proceedings].

'All Care and No Responsibility? The corporate provision of childcare'; presented at European Social Policy Association Conference, Helsinki, September 2008.

Public Forums Program

2009 Hancock Lecture

Professor Thomas Lemieux, from the Economics Department of the University of British Colombia gave the inaugural Hancock Lecture on 25 March at Flinders University, Adelaide. Professor Lemieux also made visits to Melbourne and Canberra while in Australia.

The Hancock Lecture will be recorded and published as an ASSA *Occasional Paper*.

ASSA Symposium 2009

The Annual Symposium and related events will this year take place on the 3-4 November. The topic will be: 'The importance of people and place for public policy design' to be convened by Robert Stimson and others, as the culmination of Professor Stimson's ARC Research Network in Spatially Integrated Social Science project and showcases the outcomes of the 5-year project's research.

Workshops Program

Workshops 2009-2010

All Workshops funded for the financial year 2008-2009 have been held, and the following are funded for 2009-2010, beginning in July.

'Consolidating Research in Australian Teacher Education'; convened by RW Connell FASSA (Sydney), Bill Green (Charles Sturt) and Marie Brennan (South Australia). To be held at the University of Sydney, July 2009.

'Religion and State Intervention and Opposition: Regional and Global Perspectives'; convened by Jack Barbelet, Adam Possamai (Western Sydney) and Bryan Turner FASSA (National University of Singapore).

'Philanthropy and Public Culture: The Influence and Legacies of the Carnegie Corporation of New York in Australia'; convened by Kate Darian-Smith FASSA, Julie

McLeod (Melbourne), Glenda Sluga (Sydney) and Barry McGaw FASSA (Melbourne). To be held at the University of Melbourne, 30-31 July 2009.

'Privatisation, Security and Community: How Master Planned Estates are Changing Suburban Australia'; convened by Lynda Cheshire, Geoffrey Lawrence FASSA, Peter Walters and Rebecca Wickes (Queensland). To be held at The University of Queensland, 28-29 September 2009.

'Energy Security in the Era of Climate Change: A Dialogue on Current Trends and Future Options';convened by Joseph Camilleri FASSA (La Trobe University). To be held at La Trobe University, 18-19 July 2009.

'Ethics for Living in the Anthropocene'; convened by Katherine Gibson FASSA, Deborah Bird Rose FASSA (Australian National University) and Ruth Fincher FASSA (University of Melbourne). To be held at the Australian National University, November 2009 or February 2010.

Reports from workshops conducted under the Workshop Program, including policy recommendations, are published in *Dialogue*, usually in the first issue following the workshop.

ASSA Summer School for Indigenous Postgraduate Students 2009

The 7th Summer School was held at Trinity College, University of Melbourne on 16-20 February. The traditional welcome to Wurundjeri country was delivered by Doreen Wandin. Twelve students participated along with nine supervisors and a large number of presenters (senior academics) directed by Professors Marcia Langton FASSA and Ian Anderson. The postgraduate students may come from any of the universities, nationally. This year they were from Alice Springs, Newcastle, Perth, Townsville and Melbourne. There was a welcome dinner on Tuesday night and a presentation barbeque on Thursday night.

The students present material both at the start and end of the week highlighting any change to their thesis form, research tools and methods they have made through participation in the School. The presenters lead the students through workshops on the PhD calendar, marking criteria and examiners, the supervisory relationship, archival research and research grants, library search skills and bibliography, methodology and data, the literature review, thesis structure and writing, intellectual property and copyright, ethics and, finally, postdoctoral opportunities.

The students are or will be researching:

- diagnostic tools to capture a wider range of Indigenous health issues, including post traumatic stress syndrome;
- Aboriginal women's experiences of agency with regard to contraception;
- the consultation process and recommendations that informed National Indigenous Education Policy;
- practices and attitudes which achieve good health for Indigenous people;
- discourse analysis of how people talk about their work in the arena of Indigenous mental health;
- intergenerational Nyungar women's history (5 generations);
- the concept of freedom, the fight for freedom and Aboriginal art as an act of resistance;
- indigenisation of the common units at Bachelor – where did the vision statement come from and is it effective;

- characteristics of retention of Indigenous nursing students;
- mental health policy effectiveness;
- language used in Aboriginal art exhibition catalogues; and
- Indigenous education issues 1988-2000 eg, Abstudy.

The certificates presented to the students acknowledged the Raheen Fund donors.

Standing l to r): *Jane Yule, Greg Blyton, John Doolah, Jennifer Fernance, Michelle Di Giacomo, Kathryn Gilbey, Gael Ellis, Christina Liley, Kim Usher, Brian McKinnon & Guinever Thelkeld;* (seated l to r) :*Darren Garvey, Carolyn Moylan, Dawn Bessarab, Maggie Binks, Ian Anderson, Roianne West & Marcia Langton*. Photo courtesy of *Simone Brotherton*

The World Food Crisis and Food Security: A special Academy workshop

Bill Pritchard

The one day research workshop was convened by Associate Professor Bill Pritchard on 5 December 2008 at the School of Geosciences, University of Sydney. The aim was to generate a framework and research program to investigate key issues in food security (as it relates to recent food price increases, institutions and rural restructuring), with a specific focus on India. The workshop discussed possible interdisciplinary collaborations in which to explore issues of food security and address research gaps in existing policy frameworks.

This workshop brought together expertise from human geography, political science, economics, sociology, health and anthropology to discuss research design, problems and possibilities for a better understanding of vulnerability and resilience to food security issues. Coming out of the Workshop was a commitment to pursue these ideas by way of a research project that would use the lenses of institutions and governance to investigate food security issues.

A multi-disciplinary research team working on food issues is timely. The period since 2006 has witnessed a sharp and alarming deterioration in global levels of hunger and undernourishment. In two years, the global hungry increased in numbers from 850 to 963 million. For the first time in decades, 2008 saw food riots re-emerge as a key source of political instability in many countries of the world. Pre-empting these developments, in 2007 the Director-General of the International Food Policy Research Institute (IFPRI) warned that the *global food equation* has been rewritten, due to recent structural shifts in food supply and demand and the inescapable impacts of climate change.

The workshop explored some of the relevant responses and frameworks employed by multilateral organisations, national governments and NGOs. It also discussed scholarly engagement with the concept of food security to show that it is not the individual components of food security issues alone but their *intersections* with the political economy of food at community and household scales that shape individuals' levels of food security and/or insecurity. The workshop's participants were asked to reflect on the two presentations about food security international frameworks and research methodologies in India. In this way, the group aimed to position a research project in current debates and to use collaborative expertise to address gaps.

The project design developed will seek to identify how, at this vitally important juncture in the world food system, (i) the changing global food equation (ii) connects with the institutional environments in which differently positioned communities and households are embedded, to (iii) create particular food security outcomes. This will lead to a set of analytical insights which ascertain the role of institutional arrangements in delivering enhanced food security: the 'what works', 'where', 'how' and 'why' that feed into policy settings.

Although there is a tendency in the food security literature to focus on places with concentrated concerns connected to political instability; witness the Africa-centrism in recent food security scholarship, this project focuses on the compelling insights generated by observing conditions in chronic ('the peaceable hungry') who are often overlooked rather than acute ('dangerous') contexts, such as India. The Indian case study was dissected highlighting its highly diverse food security landscape, enabling textured comparisons of different food security/insecurity manifestations. In the rural areas of some Indian states (Bihar, Orissa), the prevalence of poverty and food insecurity is comparable to impoverished African nation-states such as Burundi and Malawi. At the other extreme, states like Punjab and Kerala have levels of rural poverty and food insecurity not dissimilar to middle-income nations like Costa Rica and Turkey.

Led by representation from the Tata Institute for Social Science, Mumbai, strategically selected case studies in Rural India were discussed, and a cross disciplinary methodology focusing on institutional and process mapping, stake holder and household interviews over a 4 year period was developed. The group will continue to work together in developing the project design, with view to beginning field and desk based research in 2010.

The convenor and participants are grateful for the support of ASSA for making possible the Workshop.

Reports from Workshops

Positive Pathways for Couples and Families: Meeting Existing and Emerging Challenges of Relationships

Gery Karantzas and Patricia Noller

There is a growing need to develop an understanding of the positive pathways that strengthen the relationships of Australian couples and families. The couples and families in contemporary society are faced with many challenges and pressures that can mitigate against maintaining satisfying and enduring couple and family relationships. For example, increasing need for dual income families, longer working hours and demographic shifts that see older people living longer and children staying at home longer mean that couples are often required to provide familial care across two generations – frail ageing parents and children. These highlight just some of the pressures faced which can lead to couples not taking the time to cultivate their relationships.

The aim of the workshop was to deal with many of these issues by linking research, policy and practice in ways that would help families meet such challenges. The two-day workshop, held 1-2 November 2008 in Melbourne, brought together leading and emerging Australian and international relationship researchers with practitioners, educators, policy makers and service-delivery organisations. Alongside the Academy, the event was sponsored by Deakin University, the University of Queensland, the Department of Families, Housing and Community Services and Indigenous Affairs (FaCHSIA), the Attorney General's Department (AG Department), the Australian Institute of Family Studies (AIFS) and Lifeworks. The workshop comprised seven sessions and two break-out discussions. A total of 28 participants attended the workshop. Of these participants, there were 19 speakers and 7 delegates from the various sponsor organisations that took part in group discussions.

Alan Hayes (AIFS) provided the opening address for the workshop. His presentation highlighted that much of today's family policy is focused on the various forms that families take rather than on issues regarding family functioning. Professor Hayes urged workshop participants to think in terms of policy that incorporates the social, economic and developmental changes that influence family outcomes.

In the first session of the workshop, David de Vaus (La Trobe, FASSA) remarked that past social and familial models of what a relationship 'should be' do not assist today's young couples in negotiating their relationships. This problem is due to the diverse forms that modern day romantic relationships take. Professor de Vaus suggested that the key to handling these new models of relationships was in the capacity for people to make informed choices rather than failing to make decisions because of fear or uncertainty or making decisions based on past archetypes.

Robyn Fleming (FaCHSIA) and Sue Thomas (AG) reported on the current roll-out of the Family Relationship Centres (FRCs) and suggested that healthy family relationships should be considered a public good. Fleming noted that the maintenance of this public good may require young people to receive more relationship education. Workshop delegates discussed the idea that units and courses in relationships should be offered in more higher education institutions to assist today's youth in developing and sustaining positive relationships. Kim Halford (Griffith) noted that investing in such a public good would result in significant monetary savings for the Federal Government

across legal and social spheres. The group of participants then discussed whether a preventative rather than diagnostic approach should be taken to marriage and the family – similar to the various health prevention campaigns that have been developed in the past. The group agreed that, at present, the emphasis is to help couples and families deal with interpersonal difficulties rather than providing initiatives to decrease the probability of problems occurring.

In the second session – dealing with couple and family conflict, Patricia Noller (Queensland, FASSA) provided a summary of findings demonstrating how marital conflict patterns influence children's learning of conflict, and how this in turn is transferred across to sibling relationships. Professor Noller also illustrated the negative effects experienced by children in intact and separated families exposed to marital conflict.

In a complementary set of papers, Julie Fitness (Macquarie), Judith Feeney and Jennifer Fitzgerald (Queensland) examined the issues of betrayal and forgiveness in couple relationships. Associate Professor Fitness argued that forgiveness and punishment were not incompatible in reconciling issues of betrayal but suggested that the motivation for punishment was a key variable in forgiveness. Punishment designed to communicate hurt, and deter re-offence were viewed as adaptive forms of punishment and generally lead to partner forgiveness. Associate Professor Feeney and Dr Fitzgerald discussed an emotion-focused therapy approach to relationship education in facilitating apology and forgiveness following hurtful events. The program, which required couples to put themselves into the role of offender and victim demonstrated promising findings with offenders having a heightened sense of remorse, victims forgiving partners and couples reporting increases in relationship satisfaction. The intervention highlighted the importance of psycho-educational programs grounded in solid theory as effective in dealing with relationship transgressions.

The third session highlighted many of the barriers and opportunities that exist in the areas of couple education and counselling. Dr Sweeper (Deakin) discussed the development of a tool to assist clinicians to identify and tailor counselling interventions to members of couples who are not adjusting well to partner separation. The simple-to-administer self-report measure was discussed as a possible diagnostic instrument that could be distributed widely to relationship counsellors working privately and to the government funded FRCs. Dr Ingrid Sturmey (Relationships Australia) suggested that the efficacy of therapists was in part compromised by the lack knowledge transfer to the profession of current advances in theory and research. Both the presentations by Denise Lacey (Centacare) and Professor Halford (Griffith) noted that while numerous couples regard couple education as important, barriers to couples undertaking such programs include lack of time, stigmatisation (especially for men), perceptions that unsolvable problems will be highlighted or that older couples already know how to make relationships work. Moreover, Ms Lacey highlighted the way that government policies focus more on assisting troubled families rather than valueing prevention programs such as marital education. These difficulties in delivery prompted Halford to develop a cost-effective online administration of a couple-education program. According to Halford online couple education and face-to-face education and counseling may be viewed as on a spectrum. Couples who are at low risk of relationship problems but who wish to enhance their relationships could do so by engaging in online relationship education while those at high risk of marital disharmony could be encouraged to engage in face-to-face education and counselling. We discussed the fact that different modalities of administration may prove a more cost-

effective means for service providers and the Federal government to increase the uptake of such education programs.

The fourth session placed specific emphasis on two of the most common mental health issues experienced by families and couples – depression and anxiety. Kerryn Hurd (Brisbane Boys' Grammar) reported that 25 per cent of preadolescents' and adolescents' mental health concerns are due to issues of family functioning. Hurd however noted that government initiatives such as KIDSMATTER, have increased awareness about adolescent mental health concerns and have assisted in the reduction of youth suicide. Moreover, Hurd suggested that parents need to become more in tune with their children's psychological wellbeing, to reflect on their capacity as role models and to provide supportive environments for youth when dealing with distress or life failures. These comments were echoed by Dr Nicole Highet (BEYONDBLUE) who specifically reported on BEYONDBLUE initiatives to support family carers of individuals with depression and anxiety. Highet presented the most recent phase of the BEYONDBLUE advertising campaign which targeted carers to assist them in helping a family member with depression or anxiety as well as dealing with their own worries and concerns. Professor Jeffry Simpson (University of Minnesota) reported on his long research program into the transition to parenthood. His findings highlighted that insecure attachment bonds are a risk factor in couples experiencing negative mental health outcomes. Simpson found that anxiously attached women who enter parenthood perceiving less partner support or greater spousal anger were most at risk of marital dissatisfaction postpartum and increased depressive symptomatology. Simpson suggested that screening couples for attachment-related insecurities and relationship difficulties during the antenatal period may provide a point at which to provide therapy or relationship education aimed at enhancing relationship functioning, and also providing psycho-educational material on parenting. These comments were echoed by discussants who argued that relationship education may be best as part of existing services in the community designed to help couples deal with life transitions.

The fifth session examined issues associated with sexual intimacy and love. Dr Gillath (University of Kansas) reported on a series of studies that found increasing people's sense of attachment security increased people's prosocial behaviour and the use of sexual strategies geared towards enhancing the longevity of romantic relationships. He argued that couple interventions should incorporate security-enhancing techniques as these techniques seem to result in partners feeling validated and supported within their relationships. Professor McCabe (Deakin) specifically discussed issues regarding sexual dysfunction for both women and men. McCabe identified that a significant number of sexual dysfunction cases could be traced back to relationship problems in the dyad, and that these problems were usually present for some time prior to the manifestation of the sexual dysfunction. In particular, she argued that treatment of sexual dysfunction requires a couple approach due to the reciprocal effects sexual problems have on partners.

Session six investigated the influence of positive and negative thoughts and actions in relationships. Dr Zoe Pearce (QUT) reported on a set of studies that found that negative partner attributions influenced individual's perceptions that the partner was not working to sustain the relationship. Her findings suggested the importance of emotion-focused and cognitive behavioural therapies in assisting couples redress negative partner attributions to yield more accurate and positive attributions. Dr Nickola Overall (Auckland) examined the most effective strategies used by couples to regulate partner behaviour. Overall reported that positive indirect strategies used to change

partner behaviour, while perceived as effective, did not result in sustained change on the partner's behalf. Rather, direct strategies where a problem was communicated clearly and framed in a positive manner resulted in lasting partner changes.

The final session dealt with family issues at two ends of the life-span, parents and their adolescent children and adult children caring for their older parents. Dr Ross Wilkinson (ANU) highlighted that adolescents and parents hold distinct views of parent-child relationships. Reviewing social trends data, Wilkinson reported that most adolescents report strong and positive ties to their parents and turn to them in times of need, while parents feel less positive about the relationship. He argued that these discrepancies are exacerbated by media and policy responses that pathologise adolescent behaviour. Wilkinson argued that population-level approaches are required to normalise the changing nature of parent-child relationships during adolescence and to promote well-being. Finally Dr Gery Karantzas (Deakin) reported on a program of research that investigated how families negotiate the care of elderly parents. Specifically he identified that older parents and adult children hold similar perceptions of how caregiving responsibilities should be undertaken by family and which tasks could be delegated to community care services. Secondly, in examining the motivations for the giving and receiving of care, filial obligation was found to influence current emotional and instrumental caregiving and care-receiving, while attachment insecurity was found to predict anticipated emotional and instrumental caregiving for both caregivers and care-recipients. Karantzas suggested that an attachment approach may assist health care professionals in tailoring the counselling of families experiencing difficulties in caring for parents and identifying family members better equipped emotionally to deal with the role of being a carer.

Three key themes emerged from the workshop. Firstly, relationships in the 21st century come in all forms, and this means that our past models of relationships (which essentially focused on the roles and responsibilities associated with marriage) have changed. We have increasing numbers of de-facto and cohabiting couples living together with and without children, increases in homosexual couples and adult children staying at home for longer. Yet this diversity is only partly reflected in the way that pop culture, policy or science talk about relationships. Also, pop culture places too much emphasis on the acquisition of financial stability and material possessions as a means of 'relationship progress'. Having said this, we argue that marriage and the family continue to be highly relevant and important institutions that are fundamental to the social fabric of the nation. Clearly, marriage continues to be the union of choice for many couples, and the evidence suggests that married couples fare better than those co-habiting during periods of relationship difficulties. However, our views of relationships need to broaden if we are to develop policy and practice that are relevant for today's couples.

Secondly, more emphasis needs to be placed on thinking and promoting couple relationships and families as a 'public good'. The various workshop presentations highlighted that relationships encompassing positive conflict resolution strategies, forgiveness and feelings of security and trust in partners lead to better couple functioning and child adjustment. In addition, these 'secure' relationships provide good examples for young people to follow, on how to develop strong and healthy relationships. However, many couples and families are losing sight of how best to foster positive relationships, primarily due to the many stressors and pressures that today's families are faced with. As a result, service providers and policy makers need to rethink ways to educate couples and families to help them maintain good relationships. Relationship education is likely to become more important in the coming

years, but at present there are many barriers that preclude couples and families from attending relationship education. Some solutions may be to provide relationship education as part of pre-existing curriculum in high-schools and universities, and programs dealing with life transitions, such as the many ante-natal programs existing around the country.

Thirdly, our capacity to care for others - whether it be our children, our ageing parents or our partners needs to be understood more clearly, and policy needs to reflect the immense pressure that caring places on people as they juggle the many demands of family life. Specific attention needs to be given to policies that best assist adults in the 'sandwich generation' as their caregiving responsibilities involve caring for their children and their parents.

Given the challenges facing the contemporary couples and families, and the insights gained from the workshop, we are currently negotiating the publication of the workshop papers and discussions in the form of an interdisciplinary handbook on couple and family issues to be published by a commercial publisher. We believe that this publication will be of great interest and relevance to researchers, policy makers, service-delivery providers and practitioners. It is hoped that the text will provide insights into how best to integrate research, practice and policy in improving the wellbeing of couples and families in Australia and abroad.

The Great Risk Shift: The individualisation of economic and social life in Australia

Greg Marston and John Quiggin

Introduction

The workshop was held at The University of Queensland on 2-3 December 2008. It was opened by Professor Cindy Gallois FASSA, Executive Dean of the Faculty of Social and Behavioural Sciences, who welcomed the participants to the University and Brisbane.

The workshop brought together 17 participants drawn from a range of social science disciplines and universities in Australia. The disciplines represented included philosophy, demography, economics, history, sociology, social work and anthropology. The interdisciplinary approach was designed to encourage a more comprehensive assessment about the extent and nature of social and economic changes in Australia.

The objectives of the workshop were to: (i) critically examine the thesis that Australia is undergoing a 'great risk shift' from collective responsibility to individual risk management; (ii) explore the social and political consequences of institutionalising individualism in various social and public policy fields; (iii) consider the value of alternatives to individual risk management approaches; and (iv) foster debate and interdisciplinary engagement among social scientists about the dynamics of economic and social risk.

Where possible papers from each of the participants were circulated before the workshop to allow participants to read the papers and allow more time for discussion.

Rationale

Over the last fifteen years, an expanding social science and popular literature has examined social institutions in terms of the way in which they manage and allocate risk of various kinds. Traditionally, the social-democratic welfare state has been viewed as a set of institutions for the social management of risk. State funded unemployment benefits and public health systems, for example, have been seen as ways of sharing or pooling risks that may affect members of society over the course of their lifetime. Extending this analytical framework, measures to redistribute income and wealth have been seen in similar terms, as sharing the risks associated with accidents of birth. There is considerable discussion in contemporary social theorising and in social commentary about a profound change in these institutional arrangements, in particular the individualisation of collective responsibility for managing risks and insecurities.

The main thrust of the 'individualisation' thesis is that the social order provided by the post-war welfare state, the traditional family and stable and secure work is in decline and is being replaced by an ethos of '*leading a life of one's own'* where risks and responsibilities are borne by individuals. The central neo-liberal economic argument in favour of such a transfer is that individuals are best qualified to judge their own circumstances and should therefore be free to choose their own risk management options. Critics of the neo-liberal approach have argued that, in practice, corporations and their senior managers have avoided risk by transferring it to individual workers and households. The institutionalisation of individualism through contemporary social and economic policies raises interesting and important questions for the social sciences.

Some writers have seen this 'great risk shift' as heralding a fundamental transformation of society. Others have pointed to the resilience of the welfare state, noting the persistence of most of the main institutions developed during the social-democratic era (public health and education systems, pensions and other forms of income support and so on) and the absence of any sustained decline in the ratio of public expenditure to national income. Finally, a variety of new proposals for risk management have been put forward, often seeking to combine the strengths of social-democratic and neo-liberal approaches. These include schemes based on loans with income-contingent repayment, grant-based proposals and financial innovations.

Proceedings

The first day began with some reflections on historical changes in the welfare state (John Murphy), shifts in economic thought in Australia (John Quiggin) and considerations about demographic changes in Australia and what these mean for managing risk and uncertainty (Peter McDonald). The discussion that followed these stimulating papers focused on the need to be specific about the national context when discussing social theories of risk. There was also a note of optimism in the discussion about economic policy, in terms of whether the risks generated by the global financial crisis would present opportunities to rethink various forms of collective responsibility for social and economic risks.

The second session shifted the comparative perspective from history to some cross-national comparisons. Developments in the UK and the USA in terms of retirement policies and superannuation were discussed, following presentations from Howard Karger and Myra Hamilton. Both these papers made the point that the embrace of an economic self-reliance discourse is less pronounced in Australia, although in some areas of social policy, such as superannuation and unemployment policies there is greater convergence.

The third session of the workshop sought to get beyond policy and politics and consider the philosophical questions associated with the push for greater autonomy and self-provision. Catriona Mackenzie outlined two competing conceptions of autonomy, one concerned with relational autonomy and the other with 'maximal choice' autonomy – a view that equates individual autonomy with the satisfaction of subjective preferences and assumes that autonomy is best promoted by maximising the range of choices available to individuals and minimising regulatory and other forms of constraint on individual choice. Jeremy Moss highlighted the contradictions in the embrace of individualism by neo-liberal governments. In terms of a case study, he argued that drought-relief assistance is far less conditional than the receipt of the unemployment benefit. And that this is the case because of the different way in which we assign responsibility for luck and misfortune. Both these papers presented persuasive arguments about the limitations of autonomy as it is conceived within neo-liberalism and neo-conservatism.

The first day ended with an open discussion session where participants reflected on themes from the earlier presentations. During this session there was some agreement about the need to be cautious in using a risk discourse to describe contemporary social and economic change. Part of the reason to be cautious is that some of the discourse about new risks associated with technological change and labour market restructuring are not that different from the old risks, which were the subject of welfare state regulation in the post-war period. Another reason to be cautious is that a focus on risk can quickly turn into a discussion about 'risky individuals', which is a discourse that potentially deflects attention away from the factors that generate risks (such as segmented labour markets or environmental degradation).

The second day began with a discussion about the ways in which different social disciplines approach the questions of risk, ranging from technical calculations bound by rational thought where risks are understood as real events or dangers, to sociological approaches where risks are mediated by social factors. There is also the constructivist position, which understands risk debates as something that might occur without any substantial relation to a real world.

The conceptual discussion was followed by a consideration of individualism within different social policy fields. Leesa Wheelahan presented a paper on equity in higher education. One of the themes in the paper is that human capital talk conceives of access to education in terms of individual attributes, which can have the effect of disguising class differences in educational outcomes and promoting the economic value of education at the expense of non-vocational benefits. Barbara Pocock presented a paper on what is happening to the labour market and the associated insecurities generated by precarious employment for low-income workers. Barbara made the point that contemporary labour markets are major risk generators for large parts of the population. Jon Altman discussed the mainstreaming of economic risk in remote-living Indigenous communities through the encouragement to abandon CDEP schemes and community housing in favour of home ownership and jobs in the 'real economy'. Jon made the argument that individuation is by no means the only response to the contemporary needs of remote-living Indigenous Australians. There are a range of other responses including 'hybrid economies'. One of the interesting conclusions reached in the paper is that homogeneity and normalisation processes are themselves risk-generating. In another social policy field, Greg Marston presented a paper on the contradictions within welfare-to-work programs aimed at the unemployed and other income support groups. The discussion focused on the way in which the political discourse around welfare-to-work is couched in terms of individual self-reliance

through labour market participation, while the policy implementation undermines people's self-determining capacity.

The next session on day two focused on the social sciences and risk management. The aim of this session was to consider how risk is being researched, how risk is being transferred to non-state actors and the role that technology is playing in risk management. Catherine McDonald presented the paper on the changing relations between non-profit community organisations and governments through a case study of child protection policy in Victoria. Her analysis highlights the dangers involved in risk transfer in terms of accountability and transparency. Rob Watts presented a paper that opened up what he called a 'reflexive space' in the workshop program to think about the role that the social sciences have played in perpetuating a certain form of hysteria and categorical thinking about risk factors and groups in society, such as young people. Rob's paper makes the argument that 'at risk' descriptions can take on a life of their own and lead to all sort of misrepresentations. In his paper Paul Henman considers the role of non-human actors in managing risk, that of technology, which has increased the capacity for surveillance and monitoring of populations. Paul discussed some of the dilemmas of using risk management technologies, including their capacity to reduce complex social phenomena to a statistical score.

The final session of the second day moved the focus towards policy approaches that might better fit the conditions of late modernity and the transitions that people face. Bruce Chapman presented a paper on how income contingent loans could be used in other social policy contexts beyond higher education to allow people greater security, while not exposing them to the risks of borrowing money in conventional financial markets. Brian Howe presented a paper on designing labour markets and social policies to meet the needs of modern lifestyles where people are making multiple transitions in and out of the paid workforce. His paper discussed this with reference to the concept of transitional labour markets as advocated by Professor Gunther Schmid of the Social Science Research Centre in Berlin. Transitional labour markets are receiving increasing attention in the European context, where the importance of promoting a lifecycle approach to work is being given some prominence. The aim is to promote both flexibility and security through a less rigid labour market and welfare state system of financial support.

The workshop concluded with some general discussion about the need to continue the conversation between disciplines on the extent to which Australia is experiencing a risk shift and that there needed to be more debate and critique about the extent to which these developments are in the public interest.

Outcomes

The papers from the workshop will be published in a book edited by Greg Marston, Jeremy Moss and John Quiggin entitled *Risk, Responsibility and the Australian Welfare State*. The book will be published by Melbourne University Press in 2009. The organisers and participants would like to thank the Academy for their financial support.

Politics and Religion

Marion Maddox and James Jupp

During the Howard decade religion took on an importance in Australian politics that it had not had since the split in the Australian Labor Party over fifty years ago. Kevin Rudd had publicised a pair of articles about the German theologian, Dietrich Bonhoeffer, to illustrate his own beliefs. Once elected his government marked its opening with a quasi-liturgical national apology to Australia's Indigenous people.

Partly in response to all this, religious studies scholars, political scientists, sociologists, theologians and cultural critics, met at Macquarie University in September 2008, to discuss and analyse the significance of religion in Australian public life over the more recent and more distant past. A further concern was to contemplate the future religious-political interactions in multicultural, multifaith Australia. Particular strengths of the workshop included its interdisciplinary and inter-religious diversity, with Catholics, Protestants, Jews, Muslims and non-believers presenting papers. The workshop was jointly funded by an Academy grant and by the ARC Discovery grant (DP0663997) 'The Social Role of Religion in Australia'. Convenors were Marion Maddox (Macquarie) and James Jupp FASSA (ANU).

One group of papers dealt with specific religious communities – Catholics, Anglicans. Jews and Orthodox. John Warhurst's analysis of 'The Catholic lobby since the 1950s' examined the successes and failures of the Catholic Church efforts to maintain its voice in Australian politics on issues from school funding to human rights. Rather than portraying the Church as a single entity or as incredibly complex, the paper disentangled the various strands of theology and institutional practice, examining how each has been played out in politics since the 1950s. Muriel Porter looked at the similarly elaborate divisions within global – and Australian – Anglicanism, with a detailed examination of what many outsiders see as fairly obscure debates – what has lay presidency at the eucharist to do with opposition to gay and lesbian clergy. Both reflect the curious theological and ecclesiastical history which had distinguished the Sydney Diocese from most others in Australia, North America and England, and created an unlikely alliance between Sydney and some of the world's poorest Anglicans.

Dealing with perhaps less familiar faiths, Suzanne Rutland and Colin Tatz both considered the Australian Jewish community, with Tatz paying particular attention to the often-noted involvement of some Jewish experts in opposing racial discrimination and prejudice – while disagreeing with the significance sometimes read into this phenomenon. James Jupp gave a seldom-heard insight into the half million Orthodox Christians of Australia, through the internal and external experience of the Serbian Orthodox diaspora and the complexities of its role in post-Communist politics.

Another group of papers dealt with religious diversity in multicultural, multifaith Australia. Andrew Markus examined the social cohesion surveys conducted at Monash University with the support of the Scanlon Foundation, with a special emphasis on diverse values and attitudes as a possible threat to stability. Andrew Jakubowicz explored the media's treatment of religious and cultural diversity. It would be hard to think of a more telling case study of media treatment of religion than the long-running 'Catch the Fire' case between two Asian Pentecostal pastors and three Muslim coverts, which tested Victoria's new religious vilification law. Hanifa Deen, in the midst of releasing her book on the case (*The Jihad Seminar*, University of WA Press, 2008), asked what the various sides hoped to gain from the marathon, and concluded that from the Muslim side it had little to do with religion, while from the pastors' side every

extra day before the tribunal meant another day using the media to spread their version of the truth.

A further three papers considered the relationship between religion and the state from various perspectives. Holly Randell-Moon, having just completed her PhD on religion in Australian politics, examined Australian state-religion relationships through the lens of the Constitutional section 116,which prevents the Commonwealth from making any law for establishing a religion or imposing a religious test for office. Marion Maddox recalled several recent controversies about the place of religious ideas in political debate. She proposed that, rather than trying to exclude religion from the public sphere, we should treat it as part of the legitimate matter of public debate. Religion would become part of public discourse in the same way as economic, sociological or political arguments which influence public policies affecting us all.

Rodney Smith contrasted the prominence of religion in the 2004 federal election with its very different, and much quieter role in the 2007 campaign. He pointed out that the movement often given the short-hand name of the Christian Right has, in Australia, usually represented a triumph of imaginative publicity rather than a genuine mass movement. A relatively small number of activists has succeeded in creating the impression of a conservative religious groundswell. This retreated in the face of Rudd's determined effort to argue that 'God is not a wholly-owned subsidiary of the Liberal Party'.

These varied papers will be available on the Macquarie Centre for Research on Social Inclusion website in 2009. The convenors are interested in pursuing wider avenues for publication in the belief that they deal with major issues which have often been neglected. The papers summarised the research efforts of many scholars from different disciplines and religious backgrounds. They have substantially increased the attention paid to religion and the need for systematic study of its social and political role. They also marked out the directions for a continued research role. The same will be true for a product of the ARC Discovery grant – a major encyclopaedia of religion in Australia being published in 2009, to which many of the paper-givers have contributed. Hopefully this area of study is now free from the influence of the conservative Bush-Howard mobilisation of the 'Judeo-Christian ethic'. Rudd's approach finds itself in an international climate where the dominant super power now has a president shaped by a more liberal and reforming interpretation of the social role of religion.

Drug use, adolescent brain development and mental health: Insights from neuroscience

Murat Yücel

Adolescence is a period of curiosity and risk-taking, and it is therefore not surprising that experimental substance use is common during this period. However increasingly, we are learning that adolescence is a critical period of brain development, and that the adolescent brain may be more susceptible to the harmful effects of drugs than during adulthood. These new findings raise questions regarding the relative safety of drugs during adolescence, as well as the adequacy of current public health responses. In the following sections, we will discuss how insights from neuroscience are beginning to advance our understanding of adolescent development, and why early-onset drug use may be associated with increased risk for later health problems.

What have we learnt about adolescent brain development?

In terms of social roles and responsibilities, adulthood officially begins when a young person reaches their 18th birthday. However, from a neurobiological perspective, recent findings are beginning to challenge conventional views around the duration of adolescence, suggesting that brain structure and function are not fully mature until the mid-twenties. This concept is somewhat revolutionary, as traditionally clinicians have been taught that the brain reaches its adult size by age six, with limited capacity for subsequent new growth or regeneration.

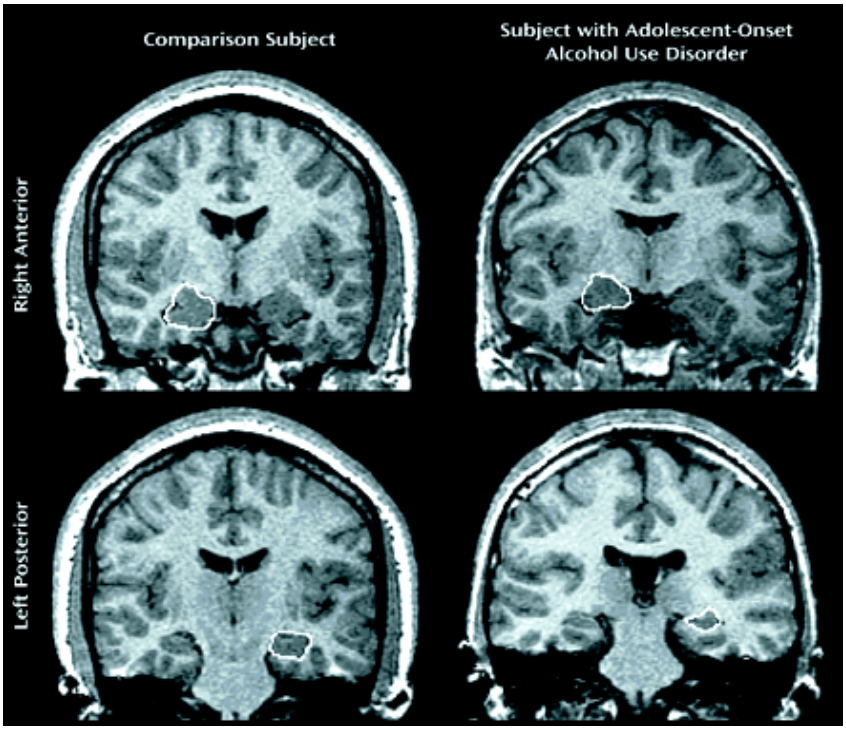
Through advances in brain imaging techniques, such as Magnetic Resonance Imaging (MRI), a number of groups worldwide have acquired detailed pictures of the living brain, revealing how its size and function change during adolescence. Indeed, we now know that there is a marked wave of tissue growth occurring throughout the brain during early childhood, followed by substantial *remodelling* during the teenage years. The changes observed throughout adolescence are thought to reflect extensive refinement (or *pruning*) of cortical synapses (the connections between nerves), a process that ensures that those connections associated with optimal functioning are strengthened, while less useful synapses disappear.[1] Pruning is accompanied by *myelination* (the development of a lipid sheath around axons in the white matter to speed neural conduction), a process that also makes the brain's operations more efficient. These developmental changes appear to continue well into our 20s, suggesting that from a developmental neurobiological perspective, adolescence does not stop at age 18, but continues well beyond. The fact that this remodelling is especially pronounced in brain regions associated with regulating our emotions and behaviours is critical to understanding why adolescence represents such a period of risk.

Substance use and adolescent brain development

Certain substances, such as alcohol, are known to be neurotoxic in adults. For example, both autopsy and neuroimaging studies reveal that chronic alcoholics have smaller, lighter and more shrunken brains than similarly aged non-alcoholic drinkers. Recently, researchers have begun to investigate the effects of alcohol and other substances on brain structure and function during adolescence. Although the literature remains relatively sparse, preliminary findings are concerning, especially as there is growing evidence that addictive substances may lead to significant disturbances in brain development during adolescence.

Indeed, adolescents appear to be more vulnerable than adults to the effects of alcohol on memory-related brain function. While research is still limited, and the majority of

studies conducted to date have been in adolescent animals, a recent US study supports the notion of enhanced vulnerability during adolescence. In this study, De Bellis and colleagues compared the hippocampal volumes of adolescents and young adults with alcohol use disorders to those of healthy matched controls.[2] They found that the size of the hippocampus was significantly smaller in subjects with alcohol problems, and that its volume correlated positively with the age of first use and negatively with duration of use. These same researchers have recently found similar effects in frontal brain regions.



MRI scans depicting hippocampi in a subject with adolescent-onset alcohol problems and a matched healthy comparison subject.[3]

Recent data also suggest that nicotine may be neurotoxic during adolescence. Again, few human studies have been conducted, but results from Professor Slotkin's laboratory at Duke University in the US raises important public health concerns. Slotkin found that even brief exposure to nicotine in adolescent rodents produces lasting damage in distinct brain regions, at dosages significantly lower than that typically consumed by regular smokers.[4] Importantly, these findings were not replicated in adult animals, even following high nicotine exposure for extended periods. These findings are particularly relevant given the high rates of cigarette smoking amongst individuals with mental health and/or substance use disorders, but further work is clearly needed to fully understand the nature of this relationship.

One class of drugs that are predominately abused during adolescence are volatile substances. Although very few imaging studies have been conducted, findings to date suggest that chronic inhalant abuse can result in substantial structural brain abnormalities, as well as marked cognitive deficits.[5] Indeed, imaging studies of chronic users find that almost half have significant structural abnormalities. These results are

particularly concerning as this age groupis often disenfranchised and rarely accesses mainstream health services.

Also of concern is the growing evidence that adolescents may be *less* sensitive to some of the behavioural effects of acute substance use. For example, adolescent rodents appear less sensitive than adults to the sedative effects of alcohol, as well its effects on motor coordination.[6] This means that adolescents are able to drink more alcohol before feeling sedated or unsteady, which is in line with the high rates of binge drinking reported amongst adolescents and young adults. If these results are correct, then young people may be able to 'party harder' while being at greater risk of disturbed brain and cognitive development.

Implications for public health policy

Does adolescent drug use cause mental health problems? This has been the hot topic for many years, and has been vigorously debated in scientific, public and political arenas. While there are clearly polarised views on the relative safety of cannabis use within society, as well as the ideal legal framework for its regulation amongst adult users, it is its use within adolescent populations that is potentially of most concern. Indeed, recent studies suggest that early-onset cannabis use is associated with an increased risk for later mental health problems, particularly depression and psychosis.

One key study that offers a genetic explanation for the link between early cannabis use and an increased risk for psychosis was published in 2005 by Caspi and colleagues.[7] Using data from a large birth cohort that has been comprehensively assessed at regular intervals for over 25 years, the researchers examined how specific polymorphisms of the COMT gene interact with cannabis exposure. An important finding was that carriers of a certain variant of the gene were found to be more likely to experience psychotic symptoms and develop psychosis if they began to use cannabis during adolescence, whereas there was no increase in risk among individuals carrying another variant of the gene, nor among adult-onset cannabis users. The relationship between genetic predisposition, developmental stage and drug exposure is a critical factor here, and supports the notion that adolescence represents a critical period of vulnerability.

Conclusions

There is limited research examining the neurobiological effects of short- and long-term exposure to various substances (including alcohol, tobacco, inhalants and cannabis) on the *human* brain during adolescence. This must be a priority area for research, especially given the widespread experimental and recreational use of drugs within modern youth culture. A definitive link between adolescent substance use and later psychopathology will have major implications for public health policy, as well as funding priorities. This is an exciting time in neuroscience research, and we are hopeful that more accurate information will soon be available for young people regarding the risks of substance use during this critical developmental period.

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1 Giedd, JN *et al* (1999). 'Brain development during childhood and adolescence: a longitudinal MRI study', *Nature Neuroscience*, 2, 10: 861-3.

2 De Bellis, MD *et al* (2000). 'Hippocampal volume in adolescent-onset alcohol use disorders', *American Journal of Psychiatry*, 157, 5: 737-744.

3 *ibid*.

4 Abreu-Villaca, Y *et al* (2003). 'Nicotine is a neurotoxin in the adolescent brain: critical periods, patterns of exposure, regional selectivity, and dose thresholds for macromolecular alterations', *Brain Research*, 979, 1-2: 114-128.

5 See Lubman, DI *et al* (in press). 'Drug use in young people: Short-term effects and long-term harms', in Gilvarry, E (ed). *Clinics in Developmental Medicine*. MacKeith Press, London; Yücel, M *et al* (2008). 'Toluene misuse and long-term harms: A systematic review of the neuropsychological and neuroimaging literature'. Neur*oscience & Biobehavioral Reviews*. 32: 910-926.

6 See Lubman *et al* (in press) *op cit*.

7 Caspi, A *et al* (2005). 'Moderation of the effect of adolescent-onset cannabis use on adult psychosis by a functional polymorphism in the catechol-O-methyltransferase gene: longitudinal evidence of a gene X environment interaction', *Biological Psychiatry*, 57, 10: 1117-27.

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