Justice, science, or collaboration: divergent perspectives on Indigenous cultural water in Australia’s Murray–Darling Basin

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Abstract

The concept of ‘Indigenous cultural water’ has emerged in Australia’s Murray–Darling Basin in the context of sweeping reforms to provide environmental water allocations for ecosystem conservation. We discuss the concept of cultural water, its origins, and its function as a means of representing and advancing Indigenous interests in a fully allocated and heavily developed river system. Cultural water remains a contested and ambiguous frame for policy, providing ample scope for conflict over appropriate goals, standards, and efficacy. We used Q methodology to elucidate the structure and content of perspectives on Indigenous cultural water as a prospective frame for policy. Our results illustrate distinct views on cultural water relative to distributive justice and restitution, the role of science and technical experts, and prospects for collaborative management. They also illustrate nuanced perspectives on the relation between cultural and environmental water management. Clarifying goals and reconciling divergent expectations around cultural water is likely to be an ongoing challenge. We note that uncertainty surrounding the concept may ultimately function to open discursive spaces to alternative perspectives and innovations, and this would be supported by contextual approaches, grounded in place-based prototyping.

Keywords: Cultural water; Indigenous; Murray–Darling Basin; Q method

Introduction

Policy and practice in the river systems of the world continue to degrade riparian ecosystems and undermine sustainable use (Grafton et al., 2013). Furthermore, freshwater resources are multi-valued, closely linked to human well-being, security, and sense of place (Vörösmarty et al., 2010). Water governance in transboundary river basins exemplifies the knowledge-generation and decision-making challenges engendered by complex human–environment systems (Armitage et al., 2015).

Australia’s Murray–Darling Basin (MDB; alternatively ‘the Basin’) evokes these challenges in a setting defined by hydrological variability (Leblanc et al., 2012) and institutional complexity (Wallis &
Ison, 2011). Current and historic patterns of water resource use have had substantial impact on the Basin’s riparian ecosystems (Pittock & Finlayson, 2011) in a context of entrenched barriers to the authoritative representation of Indigenous interests in water (Jackson & Langton, 2011; Bark et al., 2012; Jackson et al., 2012). Severe and protracted drought in the MDB at the turn of the 21st century catalyzed sweeping reforms to address systemic overallocation of water resources and advance ‘equitable, efficient and sustainable use’ (Cwlth, 2007: 273). As a centerpiece of these reforms, the Australian Government purchased consumptive-use water entitlements and reallocated them as environmental water to protect and restore ecosystems and ecosystem functions. Indigenous cultural water and the related concept of cultural flows emerged in response to these high-profile initiatives: a strategic extension of the existing environmental water policy framework and language; a means of ‘speaking through’ prevailing governance discourses to assert Indigenous water interests (Weir, 2016). While the 2012 MDB Plan articulated commitments to develop an Indigenous cultural water policy (MDBA, 2012: preface, 110), cultural water remains a contested and ambiguous frame (see, e.g., Jackson & Langton, 2011; Weir, 2016), providing ample scope for conflict over appropriate goals, standards, and efficacy.

Our goal here is to elucidate the structure and content of perspectives on Indigenous cultural water as a frame for policy in the MDB. For purposes of this discussion, we understand perspectives as narrative representations of standpoint, grounded in discourse (per Hajer, 1995). Our standpoint is that policy in a democratic society should function to advance human dignity, which we understand as a subjective experience contingent on experiences of values (their indulgence and deprivation) (Lasswell & Macdougal, 1992; Mattson & Clark, 2011). Interests, in turn, comprise patterns of value demands and supporting expectations about the conditions for satisfying those demands. In a context where Indigenous cultural water is a contested concept and symbol, it has proved difficult to articulate how a cultural water policy might be framed relative to diverse Indigenous interests. Our standpoint is that the form and function of any Indigenous cultural water policy is ultimately an issue to be negotiated with and between the Indigenous peoples of the Basin. Our objective is to support that process by clarifying functional distinctions to be negotiated; contributing insight relevant to this and other policy contexts (e.g., Canada; see Hanrahan, 2017).

Context

Water is a potent symbol and contested resource in the MDB, a largely arid drainage covering over one million square kilometers spanning four states and one territory in southeast Australia. Indigenous peoples of the Basin maintain living connections to landscape and waters extending over 40,000 years, grounded in evolving customary systems of resource use, management, and governance. This is an iconic riverine environment and Australia’s agricultural heartland – the Basin’s irrigated agricultural produce, valued at over 6.7 billion dollars per year, accounts for over 80% of consumptive water use (ABS, 2008, 2014). The stakes, symbolic and material, are high.

Inflows to the Basin’s rivers vary dramatically in space and time, and this hydrological variability is integral to ecosystem processes at multiple scales, connecting the Basin’s rivers to large floodplain and wetland zones, driving complex shifts in the composition and structure of ecological communities (see Rogers & Ralph, 2010). River management over the past century has largely functioned to regulate these patterns of variability and connectivity in support of irrigated agriculture, with substantial negative effect on ecosystem structure and function (Kingsford, 2000; Overton et al., 2009).
While periods of water scarcity have served to clarify shared interests in conserving the Basin’s riparian ecosystems, entrenched conflict has organized around tradeoffs between ‘agriculture’ and ‘environment’ (Bischoff-Mattson & Lynch, 2016). Within this context, statutory rights to water in the MDB (allocation entitlements to a portion of annual river flows) have largely been separated from land rights, and are traded on a national market (see Wheeler et al., 2014). Basin governance is currently framed by the Commonwealth Water Act 2007, implemented through the 2012 Murray–Darling Basin Plan, which establishes ‘sustainable diversion limits’ and mechanisms for the recovery and management of environmental water1, among other functions. Environmental water is defined as water held or available under access or delivery right for purposes of protecting and restoring ecosystems and ecosystem functions (Cwlth, 2007).

Indigenous interests and rights

Indigenous peoples of the MDB hold distinct water perspectives related to cultural identity, community, and connection to place. Water is vested with deep cultural significance, linked to understandings of traditional heritage, human–environment relations, and the rights and custodial responsibilities of traditional ownership (Morgan et al., 2004). Indigenous customary resource institutions vary across the Basin, expressed through water-related ecological knowledge, resource use, management practice, and ceremony. Indigenous cultural interests in water are likewise diverse; neither static nor separate from an evolving political and economic context, including commercial interests in water-based livelihoods related to horticulture, livestock, natural resource management services, and tourism (Altman & Arthur, 2009; Jackson et al., 2010). Participation in water governance is thus a means of representing and advancing diverse culturally significant water interests, and an expression of Indigenous customary law (Morgan, 2011).

Australian governments have historically managed rivers and allocated water entitlements with limited regard for Indigenous interests, governance premised on the absence of Indigenous land and water rights, and Indigenous peoples largely marginalized or absent from authoritative decision-making (Weir, 2016). These dynamics relate to broader legacies of physical and social dislocation, environmental degradation, and political and socioeconomic marginalization (see, e.g., Taylor & Biddle, 2004; Broome, 2005); patterns that condition the scope of Indigenous interests in the Basin’s waters, riverine environments, and decision processes related to those resources.

Australian Native Title law recognizes non-exclusive Indigenous rights to access water for personal and domestic, but not commercial, purposes (Jackson, 2011). Native Title over ‘land and waters’ was recognized in principle in 1992 by Mabo v. Queensland [no. 2], followed by the 1993 Native Title Act, subsequent legislative amendments, and legal precedents2 which have more closely defined the scope of Native Title rights (Strelein, 2005). The existing legal framework emphasizes continuity of customary connection and use as a basis for Native Title determinations3, and prioritizes protection of coexisting tenures (i.e., property rights established prior to any Native Title determination). Recognition of

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1 Primary mechanisms for recovery and management of environmental water are government purchase (buyback) of consumptive entitlements and irrigation network upgrades to increase consumptive efficiency, supported by infrastructure (environmental works) to deliver more water-efficient environmental outcomes for the Basin’s rivers and wetlands.


3 W. Australia v. Ward 2002 established a doctrine of extinguishment such that (per Members of the Yorta Yorta Aboriginal Cmty. v. Victoria 2002) ‘the tide of history’ may have washed away any real practice or acknowledgement of traditional laws and customs by an Aboriginal group as a sui generis basis for claiming native rights and entitlements.
traditional or customary ‘rights and uses’ is further qualified – framed in terms that preclude, for example, environmental conservation or commercial agriculture as relevant expressions of traditional law or custom (Weir, 2012).

In the MDB, this Native Title framework has largely functioned to limit the number of Indigenous groups with water rights recognized by law, the nature and extent of those rights, how much effective control they confer, and the scope of benefits derived from water-based enterprises on Native Title land (Jackson et al., 2010: 3). This occurs in a broader context where the legitimacy of Indigenous cultural claims and the authenticity of Indigenous persons and communities has been publicly contested (see, e.g., Merlan, 2014), and where Indigenous groups are often perceived as new entrants and competitors in the water arena. Direct access to allocation entitlements through the water market, as an alternative means of control over the resource to advance culturally significant outcomes, has in turn been contingent on access to administrative and economic resources (e.g., capital). Where programs have supported access to specific-purpose water use licenses for cultural or commercial purposes, their scope and uptake have been limited (Bark et al., 2012; Jackson et al., 2012).

Recent Basin-scale initiatives – the 2004 National Water Initiative and 2007 Water Act – have recognized the distinct character of Indigenous water interests and articulated commitments to represent Indigenous interests in decision-making (see, e.g., MDBA, 2012, sec. 10.52(2)). These commitments are to be realized primarily through consultative engagement, as well as involvement of Indigenous representatives in Basin-scale planning processes. Institutional barriers to representing Indigenous epistemologies in decision-making are persistent issues in this context (Jackson, 2006; Ayre & Mackenzie, 2013), as are patterns of ‘partial incorporation’ such that Indigenous participation has frequently been approached as an end rather than means (a form of goal displacement) (Lynch et al., 2014). That is, consultative engagement is often conducted as an exercise in information-giving or service-delivery, rather than participatory or learning-centered decision-making (Tan & Jackson, 2013).

In lieu of consultative arrangements and/or direct control over water entitlements, Indigenous groups have negotiated co- or joint-management of protected areas (e.g., YYNAC & VIC, 2004, 2010) and established management agreements directly with governments or water-managing authorities (e.g., CEWH & NRA, 2015). In their most ambitious form, these approaches represent a frame for nation (re)building as a political process ‘of identifying, organizing, and acting as a nation’ to advance water interests (Hemming et al., 2017: 2) – a ‘practical exercise of de facto Indigenous sovereignty’ through direct negotiation with the Australian Government, states, and their agencies (Rigney et al., 2015: 343–344).

‘Cultural water’

The concept of cultural water was developed and first promoted during the Millennium Drought, in a context of policy emphasis on environmental water as means of conserving river ecosystems (e.g., as expressed in COAG, 2004a, 2004b). For many early proponents, the function of cultural water was analogous: to provide culturally significant river flows; a means of getting more water ‘for country’ in a context where other mechanisms (including environmental water) were seen as insufficient (Weir, 2016). In 2007, the Murray and Lower Darling Rivers Indigenous Nations (MLDRIN) introduced a definition:

‘‘Cultural Flows’ are water entitlements that are legally and beneficially owned by the [Indigenous] Nations of a sufficient and adequate quantity and quality to improve the spiritual, cultural, natural, environmental, social and economic conditions of those Nations’ (MLDRIN, 2007).
This is a broad formulation for an Indigenous cultural water allocation. While such an allocation has subsequently been referenced in a variety of terms, focus has typically been on an Indigenous-specific volumetric water allocation or entitlement, with emphasis on Indigenous governance to advance Indigenous interests and aspirations (Weir, 2012). This occurs in a context where Indigenous groups must organize as corporate bodies for most purposes, and creation of an Indigenous allocation or entitlement has been discussed as one of multiple complementary approaches for delivering culturally significant outcomes, including reforms to existing consultative and participatory processes. As such, cultural water has been discussed as both (i) a specific Indigenous allocation or entitlement and (ii) any water managed to deliver culturally significant outcomes (e.g., environmental water managed for culturally significant outcomes).

In 2010, the Northern Basin Aboriginal Nations (NBAN) joined MLDRIN in adopting this definition. In 2012, the National Water Commission issued a position statement on meeting Indigenous ‘cultural water requirements’ and securing access to ‘water for economic development’ (NWC, 2012: 2), and the Murray–Darling Basin Plan called for ‘recognition of Traditional Owner knowledge and cultural values in natural resource management’ as well as research to ‘assist in understanding and providing for cultural flows’ (MDBA, 2012: preface). A national research project administered by the National Native Title Council has been funded to explore how Indigenous perspectives and interests might be represented in water planning ‘to deliver cultural, spiritual and social benefits as well as environmental and economic benefits’ (NCRFP, 2017: 1). These represent tentative steps towards clarifying and operationalizing a cultural water policy.

The breadth of MLDRIN’s definition, including its equivalence of ‘flow’ and ‘entitlement,’ has provided ample scope for conflict over how cultural water should be understood in concept and practice. Critiques have centered on the concept’s breadth and ambiguity – ‘deployed to carry far too much cultural and legal meaning’ in a regulatory regime that should not and cannot ‘carry the cultural and political weight of capturing cultural identity’ (Jackson & Langton, 2011: 116). Broad concerns have been raised that any cultural water policy will require the production of a ‘traditional’ culture, abstracted from an evolving social and biophysical context, in ways that would limit (or continue to compartmentalize) the negotiation and representation of Indigenous water interests (Weir, 2016). Specific disagreement has emerged over: appropriate uses for a cultural water entitlement or allocation (including commercial uses and trade); degree of alternative or complementary emphasis on consultative and/or co-management arrangements; how cultural water policy should be framed relative to environmental water management; and scope of appropriate impacts on other water users.

Recognizing this array of concerns, we understand cultural water as a distinct strategy for representing and advancing Indigenous water interests, and as part of a wider dialogue around Indigenous rights in a fully allocated and heavily developed system. Our goal is to advance that dialogue by examining the structure and content of perspectives on cultural water as a prospective frame for policy in the MDB.

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4 For example, as cultural water (NWC, 2011), Aboriginal water (FPWEC (2012), cultural entitlements and Indigenous water entitlements (Jackson & Langton, 2011), etc.

5 That is, in contrast to settings such as the United States: there are no sovereign tribes, nor individual registration in them. Native Title decisions are made relative to case-specific Native Title Prescribed Bodies Corporate, which function as trustees (see Strelein & Tran, 2007).
Methods

Q method (Stephenson, 1935; 1953) represents an analytic technique and framework for studying subjectivity. The results of a Q study describe a population of perspectives on a subject matter. Q method has been used to explore the perspectives of people involved in a variety of water issues (e.g., Raadgever et al., 2008; Lynch et al., 2014; Strickert et al., 2016). The analytical basis for Q methodology is the Q sort, in which participants map their perspectives by rank-ordering a set of statements about the subject matter under investigation, followed by factor analysis of the rank-ordered sorts of all participants (Brown, 1980). The resulting factors represent operant (i.e., functional) clusters of subjectivity – groupings of perspectives on an issue (Brown, 1993). In contrast to methods that examine relationships among objective variables (i.e., traits and attributes) abstracted from the individuals they describe, Q method is concerned with patterns of subjective perspectives across individuals (Steelman & Maguire, 1999: 363). A limited number of participants is appropriate, typically from 25 to 60 (Watts & Stenner, 2012), so long as the participant sample represents the diversity of perspectives in a context sufficient to establish the existence of factors ‘for purposes of comparing one factor with another’ (Brown, 1980: 192). Q method does not seek to provide statistically generalizable results, nor does it describe the distribution or frequency of perspectives across a population. It yields a typology of perspectives that exist in a context, which can be useful for exploring goals and alternatives in policy contexts.

Approach

We used an anonymous online survey tool (FlashQ) to guide participants through the process of mapping their perspectives by rank ordering a set of 31 statements from most agree to most disagree. These statements – the Q sample – pertained to Indigenous cultural water and were drawn from the public discourse as described below. To identify most strongly held elements of perspective, participants were instructed to rank order Q sample statements according to a forced distribution (Table 1). Given the geographic extent of the MDB, an online survey allowed for broader engagement of participants than in-person administration alone would allow, and we determined that internet access in this region was sufficient to support inclusive participation (per Lynch et al., 2014).

Q sample

We developed the Q sample from an extensive literature and media review to identify public statements pertaining to Indigenous cultural water (its form and function) as a frame for policy. We reviewed approximately 130 document sources including: (a) government agency and ministerial reports, statements, and media releases; (b) legislation; (c) academic literature; (d) content from national and regional media outlets, including opinion-editorial essays (e.g., The Australian, ABC Rural); and (e)

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<tr>
<td>Number of statements</td>
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<td>3</td>
<td>6</td>
<td>7</td>
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Table 1. Forced-choice frequency distribution for Q sort.
statements and media releases from non-government organizations and professional associations (e.g., Murray–Lower Darling Rivers Indigenous Nations, National Irrigators Council). This yielded approximately 350 statements comprising the concourse of public dialogue. We cataloged statements in a database including source document, date, specific identity of the individual or group being quoted, and relevant context for the statement. We then consolidated the statements through an iterative process of identifying duplications and recurring patterns, and selected a final set of 31 statements we judged representative of the range of perspectives apparent in public discourse while capturing salient distinctions (see Online Resource 1, available with the online version of this paper). While the final Q sample of statements was derived directly from the written communications of people involved in this policy context, we edited each statement for clarity. This was an unstructured approach, such that the Q sample represented a survey of elements of perspective related to the subject matter under investigation, rather than being structured to reflect a particular conceptual framework (McKeown & Thomas, 2013).

Participant sample and administration of survey

We used a semi-targeted sampling method to identify participants, focused on people who self-identified as involved in water resource issues in the MDB. We approached many participants individually, often through introduction from other participants. Additionally, we encouraged participants to disseminate our survey link within their personal and professional networks, and posted an invitation to participate on social media outlets such as the Yorta Yorta Nation Aboriginal Corporation Facebook page. The survey was administered entirely online, although we met in-person with participants where possible (22 of 51 participants). This allowed participants to ask clarifying questions in person (rather than via email), and allowed follow-up discussion of their perspective on the survey and its subject matter. While these conversations yielded information we deemed relevant to our interpretation of results, evidence suggests online administration alone is sufficient for Q analysis, with no significant effect on resulting factors (Reber et al., 2000; Hogan, 2010). As a final step, participants were asked to comment on the statements they reacted most strongly toward (i.e., statements they assigned highest and lowest rank values). The survey concluded with a series of optional demographic questions intended to provide a richer sense of context for interpreting results. These questions included the following:

1. Postal code of place of residence
2. Duration of residence in that area
3. Postal code of primary place of work
4. Duration of time working in that area
5. Field of work: Local Government, State Government, Federal Government, Small Business, Large Enterprise, Primary Production, Non-Government Organization, Education, or Other, with free text available
6. Membership or involvement in community organizations or industry associations.

The survey was open online for a period of 60 days, from 8 August to 7 October 2016. During that period, a total of 51 valid and complete survey responses were recorded. Most participants provided comments about the statements they reacted most strongly toward, as well as responding to demographic questions, which indicated that survey participants were diversely involved in water resource issues in the MDB across national, state, and local levels. While it appears most participants were able to follow
the survey instructions without confusion, several requested clarification, in writing or in person. Typically, in these cases, the participant felt confused or uncomfortable with the forced distribution for rank sorting statements, which required they spread statements they otherwise agreed with toward the ‘disagree’ end of the distribution. In these instances, we instructed participants that the rank-ordered value placed on a statement is relative to other statements, and not an absolute value ranking. That is, there is no presumption of categorical agreement or disagreement, and a ‘disagree more’ ranking may only indicate there is greater agreement with other statements.

**Analysis**

Our goal for the Q factor analysis was to identify coherent perspectives (i.e., factors), describe them in terms of characteristic elements (i.e., defining statements), and discuss functional distinctions. To conduct the factor analysis, we calculated correlations among 51 complete participant Q sorts (Pearson’s $r$) and applied principal components analysis to the resulting correlation matrix, using the varimax method to maximize variance between factors. The resulting factors represented groups of individuals who share a perspective. We then generated model Q sorts representative of each factor, based on the normalized weighted average statement scores (Z scores) of respondents significantly associated with each factor ($\alpha = 0.05$) (van Exel & de Graaf, 2005: 9). This allowed us to examine each factor in terms of defining statements, as a basis for interpretation. We extracted four interpretable factors explaining 44.9% of the total variance in the data (see Online Resource 2, available with the online version of this paper). Factors 1–4 explained 20.9%, 9.3%, 7.4%, and 7.3% of the variance, respectively, with eigenvalues of 10.7, 4.7, 3.8, and 3.7. Of the 51 participants, 24 clustered on Factor 1, seven on Factor 2, eight on Factor 3, five on Factor 4, and seven were not closely associated with any single factor. Notably, demographic questions did not reveal any interpretable patterns related to location, work sector, personal and professional affiliation, or self-identification as Indigenous. In the following section, we describe each factor through the statements that defined it and comments of respondents associated with it.

**Results and discussion**

**Factor 1: structural barriers and restitution (seeking justice)**

The first factor focuses on addressing structural exclusions and asserting a broad, autonomous and authoritative Indigenous role in water governance, supported by a cultural water allocation eligible for trade or lease (see Online Resource 2). It represents the perspective that cultural water policy should be framed explicitly as a response to historical barriers to Indigenous access to water resources. By extension, any cultural water policy would have a clear restitutive function in addressing legacies of dispossession and exclusion: ‘Cultural flows stand as a first right of first peoples in Australia. The current system has disenfranchised indigenous people’ (Participant 8300530). ‘A redistribution of water to Indigenous communities [should] redress the stripping of a fundamental cultural and spiritual right’ (Participant 8260155).

This perspective emphasizes the significance of Indigenous custodial duties and connection to land and waters, as a basis for asserting rights of control and ownership. According to this perspective, commercial use is a valid expression of culture, commercial use would be appropriate for a cultural water
allocation or entitlement, and cultural water entitlements should incorporate mechanisms for trade: ‘[Policy] should allow full economic utilization as one of the cultural outcomes, as water always had a significant economic benefit in terms of ability to live and trade’ (Participant 9070455). ‘This is the most appropriate way to address the previous exclusion and marginalization of indigenous groups from the water market’ (Participant 8141104) and ‘The right to sell water also has intrinsic value – the pride and self-determination that goes with an autonomous water allocation’ (Participant 10011039).

With this and a restitutive function in mind, this perspective emphasizes that any cultural water policy would necessarily and appropriately affect other water users and interests in this interconnected and regulated system: ‘The current water entitlements are based on a system that excluded Aboriginal people and their interests from being represented. To properly address this inequity, other entitlements to this finite resource will diminish’ (Participant 8141104). ‘Real change requires reallocation of water’ (Participant 8260243) and ‘Current entitlements are already impacted by Basin Plan reforms in an over allocated system. Get used to it’ (Participant 8290141).

According to this perspective, it would be appropriate for cultural water uses to take some precedence over environmental protection legislation. While more comprehensive Indigenous involvement in water governance would be an important complementary mechanism for representing and advancing cultural interests in water, it is problematic to assume cultural values will necessarily be served through environmental water management: ‘While the underpinning philosophy of Aboriginal water management is largely compatible with environmental values, it is a common misconception that cultural values can be achieved solely through environmental flows’ (Participant 10011039). ‘Not all environmental considerations are cultural and not all cultural considerations are environmental’ (Participant 8060630).

Ultimately, according to this perspective, any cultural water policy should allow scope for contextual interpretation and authoritative Indigenous autonomy in defining cultural water values, although limited perceived State and Commonwealth agency acceptance of cultural claims to water will have bearing on policy development and delivery.

Factor 2: scope and delivery concerns (role of science and experts)

This factor focuses on delimiting the scope of cultural water uses, as well as specific policy-delivery concerns (see Online Resource 2). It emphasizes the role of technical experts, quantifying flow requirements, accountable governance, and resourcing to address these and other issues. It represents the perspective that technical-scientific experts will necessarily play a significant role in managing and delivering cultural water in this heavily regulated system: ‘An entourage of professionals will be required’ (Participant 8080417). By extension, adequate resourcing to address information-gathering, administration, and delivery costs would be crucial, and it will be important to clarify Indigenous cultural water values in relation to concrete management interventions and river flow conditions: ‘Empirics are King. What you don’t measure, you don’t value’ (Participant 8170658).

According to this perspective, joint- or co-management arrangements may be mechanisms for developing and delivering a cultural water policy, although this will demand careful attention to who is authorized to speak for culture and community, and how that voice is negotiated and represented in decision-making: ‘One of the largest problems for Aboriginal groups is to reach consensus […] Having a clear spokesperson for their views or interests is challenging, because no-one wants to (or is authorized) to undertake that role. This becomes a very real problem for other stakeholders to grapple with’ (Participant 8170658).
Significantly, according to this perspective, a cultural water entitlement or allocation should not be eligible for trade, exchange, or lease. Indigenous economic aspirations are significant, but using a cultural water allocation to address broader Indigenous economic interests is fraught: ‘good in principle but easily abused’ (Participant 8150606). ‘It is cultural water and not a piggy bank […] Outcomes can be achieved without the outright ownership. Outright ownership comes with obligations (financial and others) […] and can also lead to the haves and have nots within the community’ (Participant 9061007). From this perspective, Indigenous cultural water interests are distinct from those of the broader Basin community. Nonetheless, cultural water should not be framed as a restitutive mechanism, even if any cultural water policy will necessarily affect other water users in an interconnected and heavily regulated system.

**Factor 3: common ground and collaboration (role of environmental water)**

This factor emphasizes the role of environmental water and environmental water managing organizations in meeting Indigenous cultural interests and delivering a cultural water policy (see Online Resource 2). It represents the perspective that existing environmental water policy allows scope for addressing Indigenous cultural concerns, and environmental water will be an important tool in that context. According to this perspective, there is nothing intrinsically problematic in coupling Indigenous cultural interests in water to the environment, although any cultural water policy may ultimately comprise elements above and beyond the existing environmental water management framework.

According to this perspective, there is substantial common ground between Indigenous and non-Indigenous communities, and general willingness among government agencies to recognize cultural claims on water. That is, significant common ground and scope for collaboration: ‘Working together is always the best way forward (the hardest but the best). Relationships are everything. Nothing is going to improve if one group is given a resource and told to go off and manage it, without the other party being actively involved’ (Participant 9020407). ‘There is a lot of common ground between Indigenous and non-Indigenous management of water for environment/Indigenous aspirations […] this is a good starting point for developing a framework, experience, track record around the use and management of a scarce, expensive resource’ (Participant 9020407). By extension, this perspective emphasizes joint- and co-management arrangements as a means for meeting cultural interests in water.

According to this perspective, managing cultural water will not require that Indigenous values be translated directly into measurable indicators or flow requirements; it may not be appropriate to parameterize many Indigenous cultural requirements in those terms, even if cultural values are ultimately reflected in river management actions and outcomes. While this perspective holds that Indigenous economic aspirations should be addressed through other mechanisms, there should be no commercial use or trade of any cultural water entitlement or allocation.

**Factor 4: collaboration and restitution (the culture–environment question)**

This factor stresses a broader Indigenous role in natural resource governance while emphasizing contextual approaches to defining and delivering cultural water, framing policy development as a collaborative as well as restitutive process, and advancing a nuanced view of culture relative to environment (see Online Resource 2); in other words, a distinct amalgam of elements associated with Factor 1 and Factor 3. Similar to Factor 1, this perspective emphasizes the significance of Indigenous custodial
duties and connection to country, and supports a cultural water policy that is explicit in its restitutive function: ‘Cultural water is about their [Indigenous peoples’] country and access to their heritage. Without providing for water reallocation, past inequities and injustices cannot be resolved nor will effective water outcomes and planning eventuate’ (Participant 8150528).

According to this perspective, a cultural water allocation would not necessarily bring environmental benefits, but it is not problematic to link Indigenous cultural interests in water to the environment – an element that distinguishes this perspective from Factor 1. Within that context, there are important distinctions to be drawn between cultural and environmental water as policy instruments: ‘I understand cultural water to have similarities and more importantly dissimilarities with the objectives of environmental water. It would be inappropriate to group the two intended purposes together prior to better understanding and expressing what cultural water actually is’ (Participant 8100534).

This perspective holds that any cultural water allocation or entitlement should be open to commercial use and trade, and it would be inappropriate for environmental water to be the primary instrument of any cultural water policy. According to this perspective, there is willingness across government agencies to recognize indigenous cultural rights to water – another element distinguishing it from Factor 1. As such, developing a cultural water policy is conceived of largely as a shared and collaborative journey. This perspective also emphasizes the role technical-scientific experts will necessarily play in developing and delivering a cultural water policy. Importantly, it may not ultimately be appropriate to pursue a whole-of-basin cultural water policy. Institutional and legal arrangements differ across states, which according to this perspective demands a contextual approach.

Other perspectives

Several participants were not closely associated with any one factor. Within that group, some emphasized congruence between traditional uses, cultural flows, and environmental water management, along with broader opposition to other cultural frames: ‘It’s [all] about having water in the right place at the right time, and cultural heritage and environment all link into one’ (Participant 9010523). ‘Traditional culture aligned with environmental culture is much better than vested self-interest culture’ (Participant 8120322).

Among these participants, there was also emphasis on shared interests and common ground, with the implication that cultural water management should be more rather than less open to participation (e.g., among Indigenous people, regardless of association with a Traditional Owner group6): ‘Connection to country is something many people share […] involvement should be open to people who have connection to country – by segregating you lose that connection’ (Participant 9010523).

Several of these participants articulated broad discomfort with the prospect of commercial use of a cultural water allocation: ‘Cultural water by definition implies a different type of entitlement and hence special rules for use are required, otherwise could simply be a free for all’ (Participant 8120322). ‘There should be no monetary value other than a cultural market through hunting, gathering and fishing. Stop seeking a monetary benefit from a moral cultural obligation to care for country’ (Participant 8090641).

6 Per Morgan et al. (2004: 5), ‘community of Traditional Owners’ and ‘local Indigenous community’ are different communities of interest: ‘Traditional owners are not always members of the local Indigenous communities that exist on their traditional country, and not all members of those local Indigenous communities are traditional owners.’
Conclusions

Our results represent perspectives on constitutive reform – they address who is or should be empowered to participate in collective and operational decision-making, and why (per Lasswell & Macdougal, 1992; Ostrom, 2007). While all four factors are premised on implicit acknowledgement that current and historical governance arrangements have failed to adequately represent and advance Indigenous interests in water, they reflect different interests in a reform process, manifest in distinct perspectives of how cultural water policy should function.

For participants associated with Factor 1 (Structural barriers and restitution) and Factor 4 (Collaboration and restitution), cultural water policy is largely a matter of procedural and distributive justice. This would be served by mechanisms for a broader authoritative Indigenous role in planning and governance, as well as reallocation of water resources from existing consumptive users to Indigenous groups. Unencumbered control over a cultural water entitlement is by extension a means of advancing diverse objectives, including economic development and addressing socioeconomic disparity. In follow-up conversation, participants associated with these factors discussed water-based economic development as a means of advancing broad community health, education, and well-being goals, as well as continuity of cultural practice by supporting traditional lifestyles. Participants associated with these factors also voiced perceptions of ongoing Indigenous dispossession as a result of Native Title law and the evolution of Australia’s water market. Use of cultural entitlements to participate in the water market was seen as a necessary means of addressing those trends. Shared emphasis on custodial responsibility to country can in turn be interpreted as a strategic invocation of symbolic authority as well as a direct expression of cultural concerns. A key difference between these two perspectives is the approach they take to framing cultural outcomes relative to environmental water management. While Factor 1 represents a more deliberate differentiation of culture from environment for policy purposes, Factor 4 represents greater ambiguity and overlap (see Ontology below).

For participants associated with Factor 2 (Scope and delivery concerns) and Factor 3 (Common ground and collaboration), cultural water policy is much more a matter of better-representing Indigenous water interests within existing decision processes. In this respect, these factors elaborate on principles articulated in the National Water Initiative (COAG, 2004a) and reiterated in the Water Act (Cwlth, 2007): improved Indigenous representation in water planning and incorporation of customary cultural objectives into decision-making. Factor 2 emphasizes concrete policy-delivery concerns, including how Indigenous values and epistemologies should be represented in planning processes, the practical realities of operating in a heavily managed and regulated river system, resourcing requirements, and capacity gaps. Factor 3, in turn, emphasizes environmental water management as a means of advancing culturally significant water interests. Within this broader context, Factor 2 and Factor 3 reflect perspectives that existing policy mechanisms are not fully sufficient for delivering cultural water outcomes; a discrete cultural water policy is warranted, and a cultural water allocation should not be constituted solely as a subset of the environmental water pool. However, the scope of appropriate use for a cultural allocation is heavily qualified, and these factors represent perspectives that commercial use and trade should be restricted. Participant comments on accountability and equity are significant in this context. While participants associated with these factors commented on the breadth of benefits that might be derived from a cultural water allocation, they represent a narrower overall formulation of how cultural water should function as a frame for policy. Notably, these factors represented different perspectives on how Indigenous cultural values should be represented in existing planning processes, including
whether it is appropriate to translate them directly into measurable indicators and targets. This highlights the much broader issue of negotiating appropriate epistemic bases for defining culturally significant management targets and outcomes.

Culture

The conceptual breadth and ambiguity of culture as a concept has significant ramifications, and our results illustrate significant disagreement over how broadly culture should be construed as a basis for defining policy goals. While it allows substantial interpretive flexibility, invocation of culture has in practice introduced as much complication and obfuscation as clarity or common ground. It is significant to note that no consensus statements emerged from our analysis; there was no uniform pattern of agreement or disagreement on any single statement. As such, our results suggest that clarifying policy goals and reconciling divergent expectations will be an ongoing challenge in the MDB, begging a more functional language for representing and negotiating valued outcomes.

In practical terms, our results suggest this issue will demand contextual approaches to negotiating and implementing policy, and that any formulation should be open to revision. Interests and priorities will vary between locations and groups, and it is appropriate that Indigenous peoples define water values and interests within the unique settings of their country and cultures (see FPWEC, 2012: 7). The existence of divergent perspectives is neither surprising nor intrinsically problematic in this context, and uncertainty engendered by the conceptual scope and ambiguity of culture may ultimately encourage contextual negotiations, functioning to open discursive spaces to alternative perspectives and innovations (i.e., fostering a form of constructive dissensus per Anderson et al., 2016). Notably, participants associated with all four factors commented on the importance of place-base prototyping within any prospective policy framework. As such, developing a basin-scale framework for cultural water may not require direct resolution of the divergent perspectives identified here, so long as it provides a structure and mandate for negotiating them at tractable scales. Developing institutional infrastructure to support that process is likely to be a significant issue (see Jackson et al., 2012). As with any devolved approach, it may be unrealistic to assume participants can overcome differences to reach any shared understanding (see Muro & Jeffrey, 2008), and outcomes will be contingent on the specific knowledge, authorities, funds, and other resources brought to the table by participants in any given context, as well as their capacity to develop mutual respect and trust (Brunner et al., 2005: 24). By extension, a key practical challenge will be to cultivate and sustain deliberative arenas for these contextual negotiations, and to facilitate the diffusion and adaptation of innovations where they emerge.

Ontology

As Weir (2016) noted, the concept of cultural water reflects prevailing water management discourses premised on culture/ecology, culture/economy, and economy/environment dualisms. These dualisms may be a significant barrier to representing Indigenous perspectives on water and its interrelationships. By invoking Indigenous cultural authority to leverage the concept of environmental water, early

7 Initiatives such as the European Union Water Framework Directive may provide relevant lessons in constructing a process for negotiating divergent perspectives and resolving conflict at different policy levels (see, e.g., van der Helm, 2003).
discussions of cultural water can be interpreted as a reflection of – and response to – these dualisms; an effort to contest the perceived mis-distinction of people and environment, framed in the prevailing language of water management. While differing perspectives on cultural relative to environmental water management reflect specific interests in (i) the scope of policy goals and (ii) related dispositions of power, they also point to deeper tensions over how human–environment relations should be understood and represented through policy. Needless to say, the perspectives identified here reflect a range of interests in the form and function of cultural water policy, including interests in limiting the scope of Indigenous involvement in water resource governance. For some participants, the environmental water framework holds promise as an established architecture for collaboration and innovation. For others, it represents an established structure of power relations that may, or may not, be expected to support their interests. In either case, the relevant interests are grounded in different conceptualizations of the (proper) relation between humans and environment.

Limitations

While our survey addressed appropriate uses and restrictions for a potential cultural water allocation, it did not capture perspectives on the appropriate amount or scale of such allocations. While Factor 1 and Factor 4 perspectives imply more extensive transfer of resources, participants associated with Factor 2 also commented on their expectation that cultural allocations could be substantial. As such, there may be different assumptions at play regarding the overall volume implicated. Differing perspectives on the scope of appropriate impacts on existing water users are suggestive, but do not clearly translate; nor do they represent clear perspectives on the delivery characteristics (e.g., allocation reliability) of a cultural entitlement. These are significant operational distinctions to be negotiated, with potential for substantial ramifications. Other contextual approaches for exploring participant perspectives, including tools such as visioning or backcasting (see, e.g., Quist et al., 2011), might be a useful basis for supporting future interaction and exploration with participants, addressing areas of uncertainty, and clarifying potential pathways.

Acknowledgments

This work has been supported by Brown University and the Institute at Brown for Environment and Society. This research was conducted with IRB approval. The authors declare that they have no competing interests.

References

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Strelein, L. & Tran, T. (2007). *Native Title Representative Bodies and Prescribed Bodies Corporate: Native Title in A Post Determination Environment (Native Title Research Report 2)*. Australian Institute of Aboriginal and Torres Strait Islander Studies, Canberra.


Received 6 September 2017; accepted in revised form 20 December 2017. Available online 30 January 2018