Environmental socio-cultural values

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Introduction

The term 'socio-cultural values' encompasses a breadth and diversity of human habits, traditions, beliefs, stories, preferences, priorities, and relationships. As such, not only is there no one universal set of socio-cultural values shared by all humans, but there is likewise no one set of socio-cultural values shared within a country, an ethnicity, or indeed a community. Thus, exploring what is known, and what is not, in relation to the socio-cultural values associated with the natural environment is a sizeable task which draws on a wide range of literature.

In order to explore this literature in a manageable way a literature search was undertaken using the following search terms: ("cultural values" OR "social values" OR "psycholog* values") AND (environment* or nature). This search was then combined with two others to address areas of particular interest. Firstly, it was combined with the search terms: (māori or Zealand) in order to bring in Aotearoa New Zealand-focused literature, and secondly it was combined with the search terms: ("nature-based intervention" OR "connection to nature") in order to capture literature exploring the relational aspects of socio-cultural values in the context of nature. This initial literature search highlighted that a significant proportion of the research undertaken to date on socio-cultural values associated with the environment has focused on the role of nature in attaining and maintaining physical, emotional, and mental wellbeing. Thus, this theme became one of three that were used to divide up the resultant abstracts for analysis. These themes were: environmental socio-cultural values in the international context, health and wellbeing values related to the environment, and environmental socio-cultural values in the Aotearoa New Zealand context. The key insights from each of these bodies of research will be outlined below with a focus on what has been done, what is known, and where the gaps in our understanding lie.

Following these summaries, some overarching insights will be teased out to help guide potential future work in this space for the He Tangata, He Taiao, He Ōhanga: a values-based biosecurity risk assessment framework for Aotearoa project.

International context

The literature exploring environmental sociocultural values in the international context predominantly has roots in the fields of psychology, sociology, and resource management (Keniger et al. 2013; Rawluk et al. 2018) and draws heavily on three distinctive frameworks: pro-environmental behaviour; connectedness to nature; and ecosystem services. 'Pro-environmental behaviour' is taken to be a shift in individuals' attitudes, beliefs, norms, and behaviour-intentions in an environmentally minded direction (Annerstedt van den Bosch and Depledge 2015). This is assessed within environmental psychology using quantitative frameworks informed by Norm Activation Theory, Theory of Reasoned Action, and the Theory of Planned Behaviour.

Research exploring 'connectedness to nature' uses such scales as Inclusion of Nature in Self, the Connectedness to Nature Scale, and the Nature Relatedness Scale (all of which can be tailored to particular focuses or disciplines) to measure aspects of how an individual interacts with the natural environment or landscape. Whilst work drawing on the ecosystem services framework breaks the ecosystem into four categories for evaluation: provisioning services, regulating services, supporting services, and cultural services.

The dominant methods used within this body of literature are quantitative surveys, or mixed method approaches that relied on quantitative scales. However there have been calls within review papers for more qualitative studies in order to more fully unpack the social and cultural values within the research (Dietz et al. 2005; Häyrinen and Pynnönen 2020; Keniger et al. 2013). There is a clear geographical bias within this area of research towards North America and Europe (Häyrinen and Pynnönen 2020; Keniger et al. 2013) thus, there is a need for geographical and cultural differences to be better reflected in the scholarship.

The core socio-cultural 'value' themes identified in this body of literature include aesthetic, economic, recreational, life-sustaining (productivity), learning, recreational, spiritual, intrinsic, historic, future, therapeutic, and cultural (traditional knowledge). With much attention currently being paid to *heritage value* (Agnoletti and Santoro 2015; Griffiths et al. 2020) and *spiritual value* (Brown and Hausner 2017; Fretwell and Greig 2019; Griffiths et al. 2020). These themes were apparent in both the qualitative research and that exploring traditional knowledge (Artelle et al. 2018; Papayannis and Pritchard 2018; Pike et al. 2011). Another key aspect identified in the literature was the role of place attachment when considering environmental socio-cultural values. Place attachment is arguably developed through cognitive and emotional processes related to place, which provide the foundation for the connectedness to nature (Husser et al. 2020; Pike et al. 2011; Yu et al. 2019). Given the importance of place attachment, more geographically-bounded research is also called for so that the appropriate stakeholders and community members within a particular geographical area can be involved in the research and so that the characteristics specific to the site can be identified and considered.

Sociocultural values are generally understood to be broader than attitudes, and can influence ideologies, attitudes, and overall actions (Bauer 2016). However, very few studies in the international literature delve into characterising or separating these values, referring instead to 'sociocultural values' as a vague grouping imbued with unspecified contextual factors (Bauer 2016; Brear and Mbonane 2019; Dietz et al. 2005). Nevertheless, such sociocultural values were seen to underpin stewardship-like relationships between place and people, and in turn guide related objectives, policies, and practices (Artelle et al. 2018).

Although the core focus of the research in this area is on pro-environmental behaviour, connectedness to nature, and resource management; there is an emerging concentration of research looking at children's relationship with the environment, health, and wellbeing benefits of being in nature, and emotional connections to the environment. Generally, being immersed in nature brings significant health and wellbeing benefits, as shall be discussed below, while also promoting pro-environmental behaviour (or behaviour intention) amongst

individuals (Mayer and Frantz 2004). Therefore, research is assessing the impact of encounters and/or programmes on children's engagement with nature in the hopes of fostering deeper, pro-environmental, connections. Given that adults who spend time in nature are also more likely to demonstrate pro-environmental traits the purpose of this body of research is to encourage policy and environmental programmes to connect people to nature. These studies are predominantly quantitative, however, there is a notable trend towards including participatory mapping (GIS) to highlight desirable zones and potential areas where more infrastructure is needed (Brown and Hausner 2017; Lindholst et al. 2015; Zhang et al. 2019).

Health and wellbeing values

The body of literature exploring the health and wellbeing values related to the environment shows, time and again, that exposure to nature has numerous and diverse benefits for human health and wellbeing, including benefits to *mental health and stress reduction* (stress recovery theory - Bratman et al. 2012; Cox et al. 2017; Houlden et al. 2018; Richardson et al. 2020; Ulrich et al. 1991); *cognitive function* (Attention Restoration Theory - Bratman et al. 2012; Kaplan 1995); *physical health* (Calogiuri and Chroni 2014; Cox et al. 2017); *social wellbeing* (Cartwright et al. 2018; Cervinka et al. 2012; Cox et al. 2017; Richardson et al. 2020); and *self-control* (healthy decision making - Berry et al. 2020).

Much of this research focuses on the psychological effects of the environment on human health. Mayer and Frantz (2004), for example, write of the relationship between connectedness to nature and life satisfaction, suggesting a possible relationship to subjective wellbeing and health, noting that ecologists and ecopsychologists have long speculated about humans' psychological relationship to the natural world. Nonetheless, there is also a growing body of research linking nature exposure to improved physiological markers (Corazon et al. 2019; Song et al. 2016) with the related health benefits linked to spending time in natural outdoor environments ranging from urban nature to wild nature (Cervinka et al. 2012).

Accordingly, some researchers have shifted from asking *whether* nature exposure improves health, to asking *how* nature exposure improves health. Brymer et al. (2020), for example, believe there is a need for a deeper understanding of the processes underlying the benefits of the human-nature link so as to design effective research and interventions. And yet, while there is a large body of research which supports the view that engaging with nature has positive, and restorative, effects on health, there are few theorical and conceptual frameworks that explain the mechanisms through which nature benefits health and wellbeing. Furthermore, while a number of papers have looked at the connection between benefits to humans and those to the environment/ecosystem (e.g. Annerstedt van den Bosch and Depledge 2015; Berry et al. 2020; Nabhan et al. 2020; Summers and Vivian 2018) there is a need for further exploration of the co-benefits to human health and ecosystem health, a point that shall be picked up below in the discussion of relational values.

The Aotearoa New Zealand context

The literature exploring environmental socio-cultural values within the Aotearoa New Zealand context encompasses many of the same themes that emerged from the international literature. The *lack of consistency between the value sets of individuals and groups* (e.g. Bayne et al. 2015; Fairweather et al. 2001), the *place-based nature of sociocultural values* (e.g. Artelle et al. 2018; Clapcott et al. 2018; Cosgriff et al. 2009; Crow et al. 2018; Kainamu-Murchie et al. 2018; Langhans et al. 2019; P. O'B. Lyver et al. 2017; Phil O'B Lyver et al. 2019; McCarthy et al. 2014; Stephenson 2008; Swaffield and Foster 2000), the *links between sociocultural values and wellbeing* (e.g. Freeman et al. 2019; Langhans et al. 2019; Thorne and Shepherd 2013), the *importance of the environment and environmental sociocultural values to sense of self* (e.g. Bayne et al. 2015; Cosgriff et al. 2009; Stephenson 2008), and the *importance of relationships with, and around, the environment as a site of environmental socio-cultural values* (e.g. Artelle et al. 2018; Bayne et al. 2015; Cosgriff et al. 2009; Kainamu-Murchie et al. 2018; P. O'B. Lyver et al. 2017; Stephenson 2008).

Where this body of work diverges from much of the international literature is the focus on te ao Māori values and the bicultural context of Aotearoa New Zealand. Turner (1999), for example, writes of the need for a broader understanding of culture, one that includes elements of social justice. Māori, Turner writes, "pursue the redistribution of socio-economic power in the name of their culture – who they are. Pakeha, who have no comparable sense of who they are, naturally refuse to see the problem of justice in culturally specific terms. For them, Maori claims to compensation for historical injustices are merely local or individual grievances. But the problem of justice is reinscribed rather than clarified by assessing Maori claims in terms of Pakeha notions of history. Given the cultural basis of Maori claims to justice, the Pakeha response, wilfully or not, misses the point. It does not address the deeper conflict - the relative cultural value of Maori claims to justice. Indeed, the Pakeha refusal to see the problem of justice in cultural terms is for Maori part of the problem. Questions of 'culture' for Pakeha pertain to aesthetics or anthropology, not social justice" (Turner 1999: 417). As such, understanding, and engaging with, environmental sociocultural values in an Aotearoa New Zealand context, particularly for decision-making purposes, requires an understanding of, and engagement with, the broader history, politics, and social justice issues evident in crown-Māori relationships and encounters post-Tiriti.

Yet, as Gawith et al. write, it has been particularly difficult to incorporate cultural values within the ecosystem services framework, despite cultural values lying "at the heart of how people derive well-being from the environment" (2020: 3032), and being integral to the success or failure of environmental management. This, Gawith et al. (2020), attribute to the challenge of assessing cultural values in relation to other ecosystem services, and the lack of input from the social sciences and humanities in the development of the ecosystem services approach. Similarly, Chan et al. write that excluding "ubiquitously shared cultural benefits from explicit consideration risks decision making and planning that is not connected to what matters to many people" (2012: 745).

In response to such critiques, there is a growing movement both internationally, and within Aotearoa New Zealand, to broaden our conception of sociocultural values beyond consideration of instrumental and intrinsic values, to include a recognition of relational values. Instrumental values are understood here to be those that address the benefits or 'services' people receive from nature (that is valuing nature as a means to an end), while intrinsic values address the perceived value of nature, and its components, in and of themselves (valuing nature as an end in itself). Relational values can thus be seen as a "third class of values" (Stålhammar and Thorén 2019) which includes the "preferences, principles, and virtues associated with relationships" (K. M. Chan et al. 2016: 1462), in this case relationships with the environment, and nature, such as those stemming from whakapapa, and those expressed through a reciprocal relationship of care with nature (caring for and being cared for by the environment). Tadaki, Sinner, & Chan argue that "values should be understood as being composed of the spatially and historically contingent relationships and meanings that connect people to their environments and ecosystems" (2017: 7). Unlike instrumental and intrinsic values, relational values reflect elements of cultural identity, social cohesion, social responsibility, and moral responsibility towards nature. They are also linked to activities and interactions that support a good quality of life, such as those associated with learning and artistic inspiration, symbolic meanings, and cultural identity connections. Exploring them thus lends itself to the richness of Kaupapa Māori and qualitative methodologies, and the approaches of anthropology, environmental sociology, geography, history and cultural studies (Tadaki et al. 2017) and "involves an engagement with more constructivist epistemologies and perspectives on how to conceive of human-nature relations, where meanings are seen as contextual and place-based" (Stålhammar and Thorén 2019: 1206).

Daughtery and Towns (2019) contend that focusing on the relationships between people and nature removes humans from an ownership role, free to use nature for primarily utilitarian purposes, and casts them instead as kaitiaki, whose job it is then to care for nature as you would for a relative. This, they maintain, is in line with their findings that New Zealanders generally value the environment in relational, as well as intrinsic and instrumental ways. A finding that is echoed by Bayne et al. (2015) and Cosgriff, Little & Wilson (2009). Artelle et al. (2018) similarly identified a set of key relational socio-cultural values that they argue are held by New Zealanders, and which they contend are critical to sustaining a healthy environment and society. These are *relatedness* (the human nature of treating loved ones and relatives with care and respect which, when applied to nature, e.g. through whakapapa, triggers the same caring responses); *respect* (for species and the environment, and recognising the importance of not wasting nature's 'gifts' but rather acknowledging tikanga and avoiding overexploitation); and *reciprocity* (the interrelationship of the right to use a resource and the responsibility to maintain, protect, and honour it, which is bound up in kaitiakitanga).

Artelle et al. (2018) also highlight that all decision-making processes are value-based. However, given that the values of decision-makers are not always, or often, articulated, the question is, whose values are being prioritised in decisions, and what are they? Artelle et al. (2018), like Stephenson (2008) and Langhans, Jähnig & Schallenberg (2019), therefore

suggest that a values-led management system should first identify values underpinning the relationship between a given placed-based community and their environment, and use these values to shape objectives and guide policies, practices, and decisions. This was the approach taken in the development of the Te Rūnanga o Kaikōura Iwi Environmental Management Plan (2007). It is also the approach promoted by Lyver, Timoti et al. (2017) and Lyver, Ruru et al. (2019) in their studies to identify the community-based indicators and metrics used by Māori to monitor forest health and community wellbeing. The importance of recognising the place-based nature of values was also stressed by Crow et al. (2018) who highlighted that cultural values are not transferrable between whanau, iwi, or between different areas within a specific rohe. Methods that have been developed to explore such placed-based relational values include the Mauri-ometer (Morgan et al. 2013), Cultural Opportunity Mapping and Assessment (Tipa and Nelson 2008), and the Cultural Flow Preference Study (Crow et al. 2018).

Another key finding within the literature is the importance of participatory and co-design approaches (Clapcott et al. 2018; P. O'B. Lyver et al. 2017; Macdonald and Hermens 2019; Moewaka Barnes et al. 2018) to exploring socio-cultural values. Local users of environments, as Clapcott et al. (2018) emphasised, have often been affected by the anthropogenic impacts on the environments but have been excluded from the related decision-making processes (Clapcott et al. 2018). Similarly, Kainamu-Murchie et al. argue that "[i]mproved management necessitates participatory approaches to better implement the ethic of ki uta ki tai, which acknowledges both the connectivity between land-to-sea and people with the environment" (2018: 538). Furthermore, there is an impetus for a shift away from 'consultation' models of Māori involvement towards a co-governance approach, grounded in shared decision-making and Te Tiriti (Harmsworth et al. 2016; Ruru 2018). Such a place-based, participatory, co-governed approach to decision-making processes is being driven by Māori scholars and participants in regards to Māori communities, but this approach could equally be employed with any and all communities and decision-making processes within Aotearoa New Zealand.

Discussion and conclusion

Identifying and understanding relational environmental sociocultural values arguably not only helps us to understand the ways in which humans interact with, and relate to, their environment, and the resultant benefits to human and environmental wellbeing that such relationships produce, but also provides insights into valuable local knowledge and the existence of biosecure behaviours that have developed within these placed-based relationships through longitudinal observation and lived experience. Hence the importance of a placed-based approach to identifying and exploring sociocultural values, and the importance of codesigning and comanaging approaches to address environmental concerns. Nevertheless, it is pertinent that any inclusion of sociocultural values within decision-making and management practices acknowledges that different groups, and individuals within groups, do not necessarily share the same values, or hold shared values equally strongly (Bayne (Bayne et al. 2015; Crow et al. 2018; Fairweather et al. 2001). It is also important to recognise that, in the context of biosecurity, it is difficult to accurately anticipate the impacts of biological invasions. Thus "the values people express with respect to biological invasions change as people experience greater impacts over time" (Gawith, et al. (2020: 3033). As such it is likely that the impact on sociocultural values expressed by people in the early stages of a biological invasion may underestimate what is likely to end up happening. Given the diverse and changing nature of such perspectives, it is therefore advisable that activities to identify and assess environmental sociocultural values take place within a broad and ongoing approach to placed-based community engagement.

With the increasing drive to include a more holistic understanding of value into decision making processes, researchers have, in recent years, designed a growing number of conceptual decision-support frameworks (Tadaki et al. 2017; Tadaki et al. 2020). However, such frameworks do not address how researchers, or decision-makers, should engage with the issues of equity and justice discussed above. As Tadaki et al. (2020) highlight, it is not just socio-cultural values that are place-based, but also the politics of environmental decision-making. Furthermore Tadaki et al. (2020) highlight that there is a significant set of challenges that any new framework faces if it is to be taken up, and applied meaningfully. As Brown et al. likewise conclude, even after 20 years of social values being mapped for decision-making, such values "show little evidence of influencing land use decisions" (2020: 6). This Tadaki et al. attribute to the persistent power dynamics within decision-making practices, noting that within this context "valuation can be a handmaiden to power" (2020: 193), where authority sits with specific actors. As such, who gathers information on, and ultimately assesses, values for decision-making and management purposes matters, both in terms of the accuracy of the interpretation of such values, and in terms of representation at the decision-making table. As Tadaki et al. write "The tendency in environmental management to promote 'rule by experts' can take power and agency away from local and indigenous values-holders who feel that their experiences and lifeworlds matter less than graphs and quantitative models. The production of technical knowledge about values can unintentionally exclude, silence and transform local environmental meanings in ways that do not make sense to these values-holders, creating a 'violence of translation'" (2020: 200).

Furthermore, these authors found through their research that what mattered most to value holders was not whether they could contribute "to some integrative valuation exercise, but whether they had equal access to the levers of decision-making" (Tadaki et al. 2020: 200). Thus, what such value holders needed "was not more comprehensive or rigorous information about values, but some way to re-level the uneven landscape of local environmental politics" (Tadaki et al. 2020: 201). These are issues and questions that the *He Tangata, He Taiao, He Ōhanga: a values-based biosecurity risk assessment framework for Aotearoa* project team will also need to grapple with in determining how best to support environmental decision-making processes to account for a diverse range of values and people in a meaningful, impactful, equitable, and just way.

Acknowledgements

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