

# Horizontal portability: A proposal for representing place-based relational values in research and policy

## Review Article

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### Publication date:

2025-04

### Permanent link:

<https://doi.org/https://doi.org/10.3929/ethz-b-000728222>

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### Originally published in:

People and Nature 7(4), <https://doi.org/10.1002/pan3.70016>

## REVIEW AND SYNTHESIS

# Horizontal portability: A proposal for representing place-based relational values in research and policy

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**Handling Editor:** Tobias Plieninger**Abstract**

1. Relational values feature prominently in recent international efforts to protect global biodiversity. In this article, we provide a conceptual approach for researchers, facilitators and policy-makers to adequately represent place-based relational values in assessments of nature's value that inform practice and policy.
2. We suggest employing horizontal portability as an alternative and complement to the dominant mode of assessing nature's value via vertical subsumption. Vertical subsumption is a process through which particular values are generalised into overarching categories to conform to more general value concepts and thereby stripped of their place-specific meanings. In contrast, horizontal portability is introduced here as a conceptual approach that maintains the contextual rootedness of place-based local expressions of value while also communicating them across places, knowledge systems, and communities. The movement (i.e. 'porting') is 'horizontal' because it allows relational values rooted in a particular biocultural context to speak to different contexts on equal terms.
3. We discuss how research on the value of nature and people–nature relationships can support horizontal portability.
4. Finally, we provide recommendations for the application of horizontal portability that promotes more plurality and greater inclusion of place-based relational values in research, policy and action.

**KEYWORDS**

ecosystem accounting, Indigenous peoples and local communities, nature's contributions to people, relational values, sense of place

[Correction added on 18 March 2025 after first online publication: Footnotes have been reinstated].

For affiliations refer to page 761.

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## 1 | INTRODUCTION

Relational values have recently emerged as a useful concept in literature on environmental values, biodiversity conservation and ecosystem services, thanks in large part to their inclusion in the conceptual framework of the Intergovernmental Science Policy Platform on Biodiversity and Ecosystem Services (IPBES; Anderson et al., 2022; IPBES, 2019; Raymond et al., 2023). Relational values are beginning to influence policy, featuring prominently in recent global reports, such as the Kunming–Montreal Global Biodiversity Framework by the UN Convention on Biological Diversity (CBD) (Friedman et al., 2022). However, legitimate questions have been raised about how relational values can be effectively represented and put to use at the intersection of policy, research and action (Stålhammar & Thorén, 2019). In this article, we present a conceptual proposal for more adequately representing place-based relational values of \*nature in research and suggest some specific ways in which this proposal can aid assessing and including them in policy and practice.<sup>1</sup>

The term 'relational values' refers to the ways people express the importance of meaningful and often reciprocal relationships with \*nature and among people through \*nature (Chan et al., 2016; Himes et al., 2024; Himes & Muraca, 2018; IPBES, 2022). Relational values highlight relationships that are valued for their own sake and cannot be explained only in terms of means to achieve an end. They often constitute people's individual and collective identity, deeply rooted sense of place, carry spiritual meanings and contribute to community cohesion. As in the case of true friendship (O'Neill et al., 2008) or constitutive relationships to the land, relational values are expressions of importance originating from a particular relationship, which—when lost—cannot be replaced in its whole meaning and magnitude by another relationship. In other words, even if a new friendship is formed or another piece of land is inhabited, the loss of the old friend or a person's ancestral land remains irremediable and cannot be adequately compensated for, even if healing, recovering, grief alleviation and forming new relationships are possible. Similarly, relational values lose much of their meaning when reduced to exchangeable units. Although their loss can be compensated (e.g. by money, a different piece of land, or biodiversity offsets), there is no complete equivalence for the loss because the two relationships are not commensurable (see Box 1). Even where people accept practical 'trade-offs' between relational and other values, these choices may not be deemed appropriate or even comparable and can cause significant anguish (Isacs et al., 2023).

According to the IPBES Global Assessment, relational values are more often associated—in comparison to other value types—with a

'context-specific perspective', which suggests that they lose meaning when separated from their specific biocultural context (Díaz et al., 2018). In this article, we refer to them in terms of *place-based relational values*. Relational values that are constitutive of the collective identity of local communities are poignant examples. For instance, when Whanganui Iwi (Māori) people declare of the Tupua River, 'I am the River and the River is me' (Tupua Whanganui River Claims Settlement Act, 2017) it is clear that the relational value of the river cannot be replaced by anything else and that the cultural and ecological components of a place and the people that belong to it are not easily separable.

Elucidating place-based relational values is essential to accurately representing the valuers' direct experiences and understanding, as well as their unique relationships with, and knowledge of specific places.<sup>2</sup>

In this article, we engage with this challenge by first critically discussing the dominant approach used to assess \*nature's values for informing decision-making, which we refer to as 'vertical subsumption'. We then introduce an alternative and complementary framework better suited to facilitating the elicitation and expression of place-based relational values which we call 'horizontal portability.' In a next step, we suggest strategies and existing approaches to research \*nature's values that can support and facilitate horizontal portability and thereby make more visible place-based relational values. We finally discuss the importance for policy to support horizontal portability in valuation processes so that place-based relational values are given more consideration in decision-making.

## 2 | CENTERING HORIZONTAL PORTABILITY IN ASSESSMENTS OF \*NATURE'S VALUES

The common way of considering values to inform policy, management and practices is through a model that we call *vertical subsumption*<sup>3</sup> Vertical subsumption is the process of generalising particular values by including them into more comprehensive categories that are part of a universal value language. It is a helpful approach that allows the translation of place-based values into abstract categories that can be more easily classified, measured or compared (Figure 1). In the process, however, such values become disconnected from the

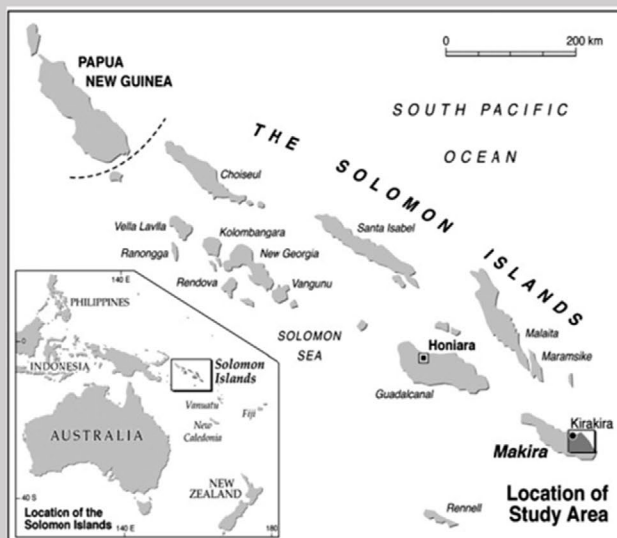
<sup>1</sup>Using the term "nature" when engaging with perspectives that include Indigenous and Traditional Knowledge might seem contradictory as the term itself carries a colonial heritage and is rooted in the Western assumption of separation between humanity/society and nature, whereas many non-Western languages do not have a word for it. Moreover, in its generality it does not represent the multiple values of place-based relationships. We decided to use the term following the IPBES glossary that includes in 'nature' different understandings, such as Pacha Mama or the Web of Life (IPBES, 2021) for reasons of textual clarity (it would be difficult to articulate every time a list of alternative terms that account for the different ways in which communities articulate their world-relationships). To highlight this tension, we include an \* before "nature" throughout.

<sup>2</sup>To say that relational values are *place-based* does not imply that their meaning and articulations are confined or limited to a specific place as an exclusive geophysical location. Rather, place-based values *emerge* from constitutive, often reciprocal and embodied relationships to a place, but can inform general guiding principles for action and practices of right and respectful engagement with \*nature (Gould et al., 2019). They can therefore inspire broad values (general principles, norms or goals that guide life as defined in the IPBES Values Assessment; IPBES, 2022). However, it is difficult to represent place-based relational values in valuation research and policy in ways that do not disentangle them from the biocultural context in which they originate; this makes it challenging to communicate their importance outside of their originating context. This difficulty can create a barrier to incorporating the relational importance of \*nature into research design and in decision-making processes that shape human interactions with the environment (e.g. governance, policy, management, research and practices).

<sup>3</sup>The verb 'to subsume' means, according to the Merriam Webster Dictionary, "to include or place within something larger or more comprehensive/ encompass as a subordinate or component element". Particular elements are included into a more general category of a higher order: for example, Orcas are subsumed under the category of sea mammals in the paradigm of Western science.

### Box 1 Non-substitutability of relational values in Solomon Islands

Kahua is a remote region of Makira-Ulawa province, Solomon Islands (SI). Kahua culture is strongly based in the land, including broad relational values of land-sharing, care, and collective deliberation of land-management. In the SI, commercial logging has created devastating environmental impacts and intense social disputes over land rights (Kenter and Fazey, 2015). Kahua communities have mostly resisted commercial logging, but Kahua forests are also threatened by population growth, prospecting for minerals, and cash-cropping. Cash cropping through copra (dried coconut) and cocoa provide local peoples' main sources of income, while they are dependent on forests for clean water, shifting subsistence agriculture, wild foods, materials for traditional dwellings, and locations of ancestral remains. The Kahua Association, a local bridging organisation, worked with external researchers on large-scale participatory action research co-managed by the KE and researchers to assess ecosystem service values. Community deliberative monetary valuation (DMV) workshops led by local facilitators were used to bridge literacy, language and culture issues and encourage learning, with around 500 people participating. Participants debated willingness to pay towards maintaining a range of culturally meaningful ecosystem services. In a first valuation round, participants were willing to pay around a third of their mean annual income towards preserving ecosystem services. However, following a deliberative intervention discussing the relationships between forests, culture, Kahua culture and values, and the impact of cash cropping on the forests and traditional culture, participants indicated the relational value of forests in terms of its cultural significance as priceless, and were unwilling to trade-off ecosystem services altogether (Kenter et al. 2011). The study demonstrated that relational values are poorly substitutable, particularly when communities actively engage with their significance through deliberation and social learning.

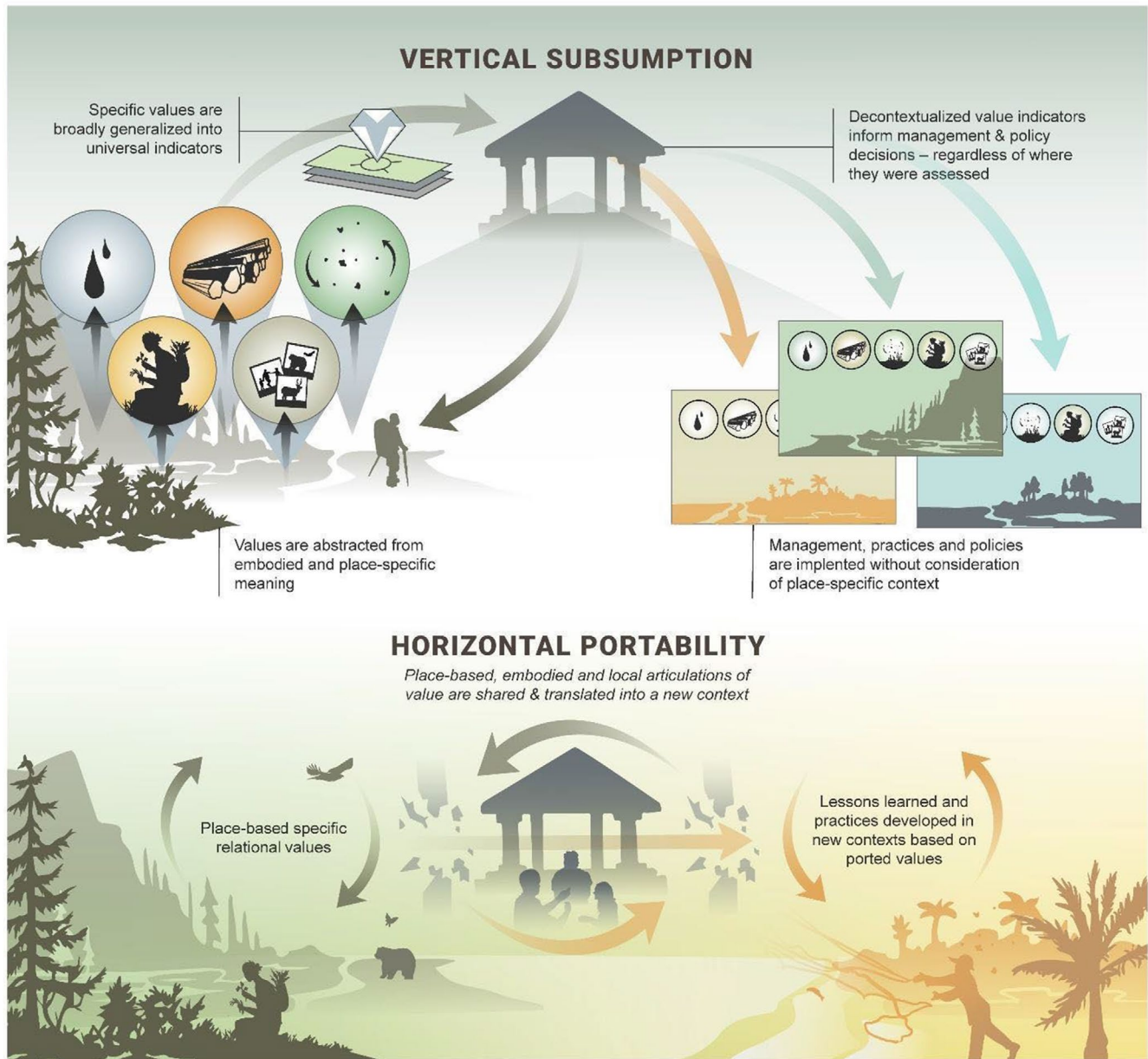


Images from Kenter et al., 2011

specific relationships and places that constitute their meaning. What often legitimises the process of vertical subsumption is the understanding that specific practices, knowledge systems, and associated values are the *particular* expressions of general categories and that they can be adequately represented by a delocalised, abstract, and universal language. This assumption is rooted in the colonial history of Europe and the asymmetric power relations it instituted: what counts as 'universal language' is defined from the point of view of colonial powers that validated thereby their way of understanding the world while denying their own particular—and not

universal—place of origin (in specific European histories, geographies and meanings). From this point of view, their language is set as 'universal' and superior to other expressions considered merely 'particular' and often confined to the past<sup>4</sup>). Through vertical subsump-

<sup>4</sup>Our characterisation of vertical subsumption is indebted to the decolonial critique of Eurocentric abstract universalism that presents itself as disembodied and conceals the epistemic locus of its enunciation (Grosfoguel, 2012, p. 95). For a critique of colonial de-localized abstractions see (Burkhart, 2019). Coloniality operates, accordingly, by obscuring both, Indigenous and European locality: 'Coloniality begins with an attempted abstraction out of European locality, a delocalized, universalized system of culture, values, meaning, being, and so forth' (Burkhart, 2016, p. 6)



**FIGURE 1** Conceptual representation of *vertical subsumption* and *horizontal portability*. Both models can be used to assess values derived from and rooted in a place; those values can in turn inform decisions that affect the people and place from where the values were assessed or inform decisions in new contexts. Vertical subsumption is the common approach of top-down research and decision-making, while horizontal portability is ideally facilitated by encounters between equals. Figure designed by Alana McPherson: [www.iamsci.com](http://www.iamsci.com).

tion, values are stripped of their place-based meaning and made suitable to be communicated regardless of their specific context. As a result, the context of relationships central to the importance of place-based relational values may be removed, obscured, or diluted, and their full magnitude is lost. An example of vertical subsumption is simplifying diverse and complex cultural ecosystem services into generalisable categories organised hierarchically to emphasise their global significance (Huynh et al., 2022).

We propose here, as both an alternative and a complement to vertical subsumption, the idea of *horizontal portability*, an idea inspired by Kovach's work on Indigenous methodologies where she describes one core characteristic of Indigenous theory as 'not

universal, [but] portable to other sites' (Kovach, 2009, p. 115).<sup>5</sup> 'Horizontal' indicates an effort to allow the specific expression of relational values rooted in a particular biocultural context to speak to different people outside of that context on ideally equal terms (Manuel-Navarrete et al., 2021; Tschirhart et al., 2016). Equal terms does not only mean that asymmetry of power should be minimised, but also that specific expressions are not subsumed into larger, overarching categories that do not correspond to how communities

<sup>5</sup>Kovach's understanding of "portable" is embedded in a series of criteria for Indigenous methodologies, which we do not intend to claim here; we propose the idea of "portable" as an alternative to universal in our framing).

articulate what matters to them in their own terms.<sup>6</sup> 'Portability' refers to the movement of being *ported* or carried, as a whole, from one place to another. Thus, horizontal portability takes place in encounters and communication, on equal terms, between individuals or groups in which values derived from specific, meaningful relationships with \*nature are shared from the perspective of one's biocultural context across/beyond other biocultural contexts, without severing the connection to the context from which they originated (Álvarez & Coolsaet, 2020). Ideally, this sharing is reciprocal. In our conceptualisation of horizontal portability, these encounters can fall on a spectrum from direct interactions between people or communities meeting in person to mediated encounters separated in times and space, for example, where meaningful relationships with \*nature and their contexts are shared through research, writing, stories, recordings or art (Figure 1).

While supporting the (horizontal) transfer of values, horizontal portability is significantly distinct from economic approaches to value transfer, like benefit transfer, where values (usually monetary), based on estimates of generalised characteristics of people and ecosystems in one or more locations, are used to infer values of \*nature in other locations. While value transfer follows a vertical subsumption model and assumes that costs and benefits of \*nature from one context are a suitable basis for determining values in an entirely different context as long as economic, social, ecological or all three conditions are suitably similar (Spash & Vatn, 2006), horizontal portability recognises that place-based relational values are inseparable from the context in which they emerge. With horizontal portability, place-based relational values and the context integral to their importance (the specific relationship between people and the particular world they inhabit that is, in itself, valued and non-substitutable) are communicated—as much as possible—in their unique specificity. This can allow decision-makers to more clearly understand relational dimensions of value in the original context. At the same time, decision-makers, managers and practitioners operating in other places may find inspiration through horizontal encounters and develop new ways to recognise and express relational values in their own context.

Horizontal portability is not new to many Indigenous traditions nor to practices of encounters among non-Indigenous local communities; it has been a modality of reciprocal communication and exchange for centuries through storytelling, cultural celebrations, ceremonies, collaboration, gift exchange, cross-fertilisation of practices, reciprocal learning and commoning among people from different social-ecological contexts (Graeber & Wengrow, 2021). What we propose is to take these practices as a model for an alternative design in research and policy around the valuation of \*nature that can interact with and complement vertical subsumption.

Through horizontal portability, the relational values that are constitutive of individual and collective identity and associated with a sense of place can be translated to other places and communities via their own context-specific lenses. The goal of translation in the

sense of horizontal portability is not to reach a complete understanding of each other's values, but to keep open a space of encounter in which the meaning of something is not taken for granted on the ground of one's own experience and knowledge but left open to ambiguity. In this space, different meanings can coexist, partially overlap, but also exceed each other.<sup>7</sup> Horizontal exchanges and translations, particularly when reciprocal, inspire and empower practices rooted in meaning-filled relationships with \*nature and place-specific ways of sustainably engaging with the environment. Horizontal portability can thereby also help empower individuals and communities to act according to their own relational values (Chan et al., 2020) and sustain reciprocal learning. Through horizontal portability, relational values become 'intercontextual' rather than being severed from their meaning-filled context. Similarly, the practices through which people act upon those values are shared and become interconnected. Such values can speak to other contexts while at the same time remaining rooted in the particular context that gives them meaning in the first place.

Engaging with this in research means that researchers can, for example, collaborate with community partners by supporting interactions and communication forms that enable horizontal portability (see Box 2) and/or help better communicate and make place-based relational values more visible to policy and decision makers. Although effectively implementing horizontal portability about place-based relational values in policy can be a challenge, decision-making processes need to be open to assessing outcomes based on diverse values, including those non-generalisable values having meaning rooted in context-specific relations and practices. Policy can support the expression of place-based relational values by actively facilitating (and/or participating in) interactions that are likely to result in horizontal portability and by creating the conditions for management, practice, and governance that uphold place-based relational values.

### 3 | A SYNTHESIS OF APPROACHES TO ASSESSING THE VALUES OF \*NATURE THAT SUPPORT HORIZONTAL PORTABILITY

In the following section, we briefly offer an overview of existing approaches in research that can support horizontal portability and more specifically, can represent place-based relational values more adequately (although many practices are also applicable to valuation research in general). Drawing on methods in ethnography

<sup>7</sup>This draws on what de la Cadena, 2019 calls (with reference to Viveiros de Castro) "controlled equivocation", a practice of translation that is always open and never achieves complete transparency between different meanings. Accordingly, the same word can mean different things because it originates from different worlds (i.e. significantly different ways of living, knowing and being). Equivocation is not something to be resolved, but a space where respectful encounters across worlds can happen and alliances, even without full understanding, are possible. For example, in Peru, Western environmentalists can ally with the AwajunWampis for the protection of their 'territory' (a lagune) although for environmentalists 'territory' means a biodiversity hotspot area whereas for the local communities, "territory is the AwanjunWampis"—a meaning that remains ambiguous to environmentalists inhabiting a different world

<sup>6</sup>To continue with the former example, Orcas are not just seen as a particular instantiation (expression) of the more general category 'sea mammals,' but, for example, as *qwe 'thol mechen, our relations under the waves* (Guernsey et al., 2021)

## Box 2 The Totem Pole Journey as an example of horizontal portability



The case study, co-funded by the University of Oregon Seed Grant i3 (2021–2023), was centered around the “Snake River to Salish Sea Spirit of the Waters Totem Pole Journey” that took place in May 2022 and was organized in collaboration with all-Indigenous-led non-profit organization Se’Si’le and other tribal partners, NGOs, and academic partners. A

Lummi-led project, the Totem Pole Journey frames the space and conditions for cross-cultural encounters and knowledge sharing across diverse tribal communities and with settlers’ society, including oral storytelling, ceremony, art and science, spirituality, ancestral knowledge, and engagement with the totem pole as a work of art. It is an Indigenous-led, transdisciplinary framework for communication, consultation, and partnership. This particular journey aimed to inspire, inform, and engage Pacific Northwest communities in support of the indigenous-led movement to remove the lower Snake River dams and restore to health the Snake River salmon runs and the Southern Resident Killer Whales that depend on them – for the Lummi people Orcas are their relatives who live under the water.

The Totem Pole Journey embodies the idea of horizontal portability: by being literally ported from one place to another, the Totem Pole materializes an intercontextual place of encounter; it convenes diverse peoples, from tribal and non-tribal communities, around shared conservation interests, while at the same time maintaining and respecting divergences in worldviews,



knowledges, and value systems. It does not only create an occasion for horizontal encounters, but it also bears witness to such occasions and ‘ports’ its testimony along: at each stop, it bears witness to the stories carved in it, to the relational place where it came to be, to the ceremonial songs that accompany it, to the stories shared and lived around it during the journey. In continuation to this collaboration, the researchers were invited to the *International Salmon Seas Symposium* that brought together thirty-five Indigenous peoples, knowledge-keepers, and invited guests from the three great salmon seas: the Salish Sea, Alaska, and the Russian Far East (the Sea of Okhotsk/Bikin River and the Kamchatka Peninsula). Following the lead and expectations of the Indigenous partners, the self-understanding of the researcher team shifted from the traditional role of participating observers and collectors of data to the role of facilitators and note-takers during the group conversations. The results have not been published in academic papers but in a brochure distributed to all participants.

*Photo credit Barbara Muraca and Kurt Russo Se’Si’le*

and anthropology and on Indigenous research, many of which are already close to what we propose here, research supporting horizontal portability explicitly engages with and actively facilitates dialogue and translation of place-based relational values across contexts, locations and perspectives. By hearing, reading and experiencing the re-creation of others' place-based relational values and by re-interpreting those value-filled relationships in one's own particular biocultural context, reciprocal learning, the recognition of place-based relational values and new practices can emerge. Research approaches engaged in horizontal portability contribute to creating a space where these experiences are possible for the researchers, the participants, and the target audience of the research, which includes decision makers. Here, by research' we mean efforts to elicit people's expressions of how and why \*nature is important to them and to understand and communicate those expressions. In this context, research can include, besides the work by scholars in academic settings, valuations carried out by government agencies and practitioners to inform policy and community-based initiatives to inform actions or aid in navigating conflicting views. Thus, research on place-based relational values that supports horizontal portability requires not only interdisciplinary efforts but also synergies across different knowledge systems (Tengö et al., 2014; White Q Íx Itasu et al., 2024; Whyte et al., 2016). Our purpose in the following sections is to briefly synthesise existing approaches to research that we believe are particularly useful for facilitating, supporting or emulating horizontal portability.

### 3.1 | Use methods that support diverse expressions of value and acknowledge power dynamics

A key way to enable horizontal portability is to facilitate the expression of place-based relational values in their own terms. Since 'place' is more than a material space or a geographical site, different actors within the same physical place may live different place-related experiences, giving rise to an equally diverse array of place-based relational values (Rajala & Sorice, 2022). The context of relationships with place will be very different based on history, worldview, knowledge of the land, sedimented layers of meaning (Donohoe, 2016) in the landscape across generations, and the broad values entwined with their relationship to place.

Horizontal portability invites researchers to keep open the space for layers of meanings that lack visibility, tracing carefully the multiple worldviews, knowledges and languages of values at play, as well as asymmetrical power relations that influence the meanings of places and their expression. Landscapes and land do not exist independently of meanings and of the relations that constitute them. A landscape or a place speaks to us and feels familiar due to the sedimented meanings inscribed in it that have accumulated over time through collective practices, stories, and habits. Colonialism, and even more so settler colonialism, and the asymmetric power relations that it engenders produce a 'vicious

sedimentation' that erases Indigenous meanings and, by replacing them with settlers' practices and stories, alienates the meanings of the land and makes the relationships with it difficult, while at the same time fortifying settlers' ignorance about those meanings (Whyte, 2018).<sup>8</sup>

Existing methods well suited to facilitating expression of place-based relational values that incorporate this diversity and make more transparent power asymmetries include Participatory Action Research (PAR) and the related 'diálogo de saberes', (Echeverri & Román, 2008) and 'knowledge ecologies' ('ecologías de saberes') (de Sousa Santos, 2018) which involve collaborative research, education and action-oriented towards social change (Kindon et al., 2007). For instance, PAR advocates for community partners to be actively involved at all stages of the research process (Baum et al., 2006), which gives them agency to express values in their own terms. PAR also focuses on enabling action through a reflective cycle, whereby those involved determine appropriate actions following data collection, analysis, and co-interpretation, and where researchers act in a facilitating and capacity-building rather than extractive role (Kenter et al., 2011).

More generally, researchers can consider these guiding questions in developing and carrying out studies of place-based relational values: 'what are the unique ways in which each group articulates its relationships to and understanding of the place?' 'How do they define themselves?' 'How do they define others and relate to other expressions of values and practices?' 'What are potential incompatibilities and/or possible alliances across value expressions and how do they align with existing power structures?'

### 3.2 | Approach research as an ongoing dialogue between equals

It is vital that researchers working on place-based relational values engage in ongoing dialogue with diverse value holders (Sheremata, 2018) to acknowledge and understand different perspectives and to identify potential common or overlapping values (van Riper et al., 2018) and frames of human-nature relationships (O'Connor & Kenter, 2019). To this end, researchers supporting horizontal portability may go beyond the traditional role of observers or data collectors and instead facilitate direct horizontal interactions between diverse actors and groups by offering, for example, institutional support to help form alliances that foster diverse place-based relational values within a socio-ecological system (Boelens & de Roo, 2016). By approaching research as a dialogue in the spirit of horizontal portability, researchers can also help map the complex local context of relational values and, where appropriate, help communicate and mediate between them, particularly in instances where there may be conflicting perspectives about what types of

<sup>8</sup>This does not mean that meanings and practices completely disappear. They often persist challenging the lack of visibility and adapting successfully to changed conditions, Whyte, 2018.

practice or management of natural systems are appropriate or desirable. For example, Gordon et al. (2024) describe a case study using action-oriented research through practice where the lead researcher participated as a member of a volunteer cooperative of farmers in Australia to develop a regenerative agriculture accreditation system, which required bridging members divergent understanding of what 'regenerative agriculture' is or should be.

To this end, research protocols and methods can benefit from being *co-created* with research participants whenever feasible. We refer to co-creation as an open, active and creative process in which all relevant actors are engaged (Ind & Coates, 2013; Leclercq et al., 2016; van Dijk-de Vries et al., 2020). This involves decision-making through respectful dialogue where all voices are considered (Voorberg et al., 2015) and value assessments undertaken with, rather than on, people (Goodyear-Smith et al., 2015). Thereby, partners are not treated as merely research subjects, but as co-creators and knowledge-holders who collaborate to identify research questions, choose and evaluate the appropriateness of methods, and co-facilitate results-sharing (Lassiter, 2021). While applicable to many areas of research, co-creation is particularly promising for research on place-based relational values because it gives participants the opportunity to ensure that their context-specific perspective is considered and communicated in its own terms. It is important to remain open to potentially adapting the overall aim, framework, questions, and expected outcomes of the process where feasible. This might also mean that not everything needs to be fully translated or explained and that meanings, practices, and values that might not have an equivalent in other languages or knowledge systems can remain ambiguous, partially overlapping and exceeding possible translations (de la Cadena, 2019). Co-creation of research is often an iterative process where preliminary findings are shared among partners and/or co-produced together. Relevant questions researchers should consider when sharing preliminary findings with partners or co-producing them are: What values are present in the research findings and how are they being expressed? What values and whose voices are missing? Is the meaningful context behind place-based relational values being adequately communicated and represented?

### 3.3 | Combine multiple methods and consider unconventional approaches

Using multiple methods can help ensure that multiple perspectives are represented (Martel et al., 2022) and illuminate different dimensions of relational values and layers of meaning. One method might work well within a context with specific community partners, but not in others. Methods are not neutral tools; they might enable or inhibit specific ways of expressing values, as is the case, for example, with monetary valuation that obscures the expression of other languages of value (e.g. sacred, ancestral relationships with land; Temper & Martinez-Alier, 2013). As noted by IPBES (Termansen et al., 2022), using multiple methods enables the recognition of multiple value dimensions. Methods of valuation that produce qualitative data may

more adequately represent the context essential to place-based relational values and complement quantitative approaches that capture other dimensions of value. Modifications of existing methods (e.g. modifications built from researchers' and communities' joint creativity (Gould et al., 2020)) could also improve their compatibility with a horizontal portability approach. Two emerging trends in valuation methods seem especially promising avenues towards horizontal portability: deliberation-based methods and embodied methods (see Appendix S1 in Supporting Information which draws from references listed in Data Sources for details). Combining both of them may help uncover place-based relational values and better understand the contexts that contribute to their importance.

Place-based relational values and their context may be best expressed through methods considered unconventional. For instance, Indigenous valuations, which tend to blur distinctions between value elicitation, value expression and decision-making, and the connections between them may be circular rather than linear (Tynan, 2021), which prevents the relational context from being stripped away prior to assessments and decision-making (Termansen et al., 2022). This type of approach could be emulated in non-Indigenous contexts by co-creating research approaches (Reid et al., 2021) where values are elicited and expressed in relation to actionable decisions. Iterative and deliberative co-creation of scenarios coupled with deliberative assessment of simulated outcomes is one potential example of how to conduct research with stronger ties between value elicitation, value expression, and decision making (Hallberg-Sramek et al., 2023), particularly when participants from different knowledge systems and backgrounds gather to craft scenarios that reflect their diverse values and visions (Rawluk & Godber, 2011). Co-creation always needs to comply with ethical principles and frameworks (David-Chavez et al., 2024; Doering et al., 2022).

Other creative approaches tailored to specific contexts that make space for the diversity of affected parties and their worldviews should be explored. Less conventional methods include facilitating value expression through visual art—for example, photography and PhotoVoice (Castleden et al., 2008; Pedri-Spade, 2017), film—for example, participatory video and community filmmaking (Cunsolo Willox et al., 2012), and storytelling, which provides opportunities for diverse forms of value expression that may better align with some worldviews and knowledge systems. Yet, some of these methods may be considered less 'valid' by academic or political institutions (Termansen et al., 2022), sometimes precisely because they resist vertical subsumption. In some situations, combining more conventional valuation approaches with novel or unconventional ones can be a solution, where horizontal portability complements but does not replace vertical subsumption; this reduces challenges to validity (Muhl et al., 2022; Tengö et al., 2014).

Approaches inspired by horizontal portability challenge the expectations and constraints imposed on research and the framework of grants-based research. Openness to horizontal portability might, for example, require shifting the evaluation of a research project from the focus on publication-based outcomes to process-based and

practice-based outcomes (e.g. what happens on the ground). In some cases, following the lead of community partners might mean explicitly deciding NOT to publish (e.g. see notes on Salmon Symposium in [Box 2](#)).

## 4 | DISCUSSION AND CONCLUSIONS

Policy support can aid horizontal portability. One example is to invest in platforms for sharing place-based relational values and the practices that support them. Models for such platforms exist: for example, the *Environmental Justice Atlas* serves as a platform for knowledge and action exchange for Environmental Justice organisations across the world (<https://ejatlas.org/>); or, as bottom-up example, the *Global Tapestry of Alternatives* (<https://globaltapestryofalternatives.org/index>) explicitly uses weaving as a metaphor for horizontal encounters among diverse practices and knowledges across the world. Similar platforms can be supported for place-based relational values where practitioners share how values and biocultural contexts shape and are shaped by traditional sustainable practices. Many examples exist of community-based initiatives that create spaces for horizontal encounters and portability across diverse groups: The Totem Pole Journey (see [Box 2](#)), initiated by members of the Lummi Nation in the Pacific Northwest of the US and their partners, provides an example of how a place-based relationship can be shared with diverse groups of people to speak to a conservation challenge in the region. Another example is found in community forest collaboratives that bring together diverse interests to negotiate forest management practices across boundaries (Davis et al., 2018; Raymond et al., 2023; Yuliani et al., 2023). Long-term support that moves beyond the timeframe of project-based funding is often an important condition to maintain these initiatives and is a concrete way policy could support them.

In addition to supporting new initiatives, existing policies can be changed to remove barriers to horizontal portability. For instance, some state forest management policies explicitly require that practices are justified by the best available science (Natural Resources Canada, 2015; Forestry Explained, 2023; National Forest Policy Statement, 1992), which is not problematic per se, but may limit opportunities for horizontal engagement and justifications for practices based on relational values and diverse ways of knowing (Himes & Dues, 2024).

Recent developments in policy and legislation suggest a growing interest in diverse biocultural conservation frameworks that are aligned with horizontal portability. In the area of environmental justice, scholars and courts are designing innovative concepts such as biocultural rights, biocultural protocols and biocultural memory and heritage to recognise the inextricable link between peoples and their environment (Bavikatte & Bennett, 2015; Cabildo Mayor Ind'ígena de Chigorodó (CMC), 2018; Cano Pecharroman, 2018; Cepeda Espinosa & Landau, 2017; Nemogá & Gutiérrez-Martínez, 2023; Swiderska et al., 2009; Tupua Whanganui River Claims Settlement Act, 2017; Te Urewera Act, 2014).

Despite wider recognition, IPLC knowledge systems are still marginally incorporated into conservation and environmental policies (Fernández-Llamazares et al., 2021; Fernández-Llamazares & Cabeza, 2018; Nemogá, 2016; Nemogá et al., 2022; Paneque-Gálvez et al., 2018; Rozzi et al., 2008), mainly because in contemporary nation-states, Indigenous peoples and local communities have not yet achieved an effective right to self-determination. Moreover, dominant approaches to eliciting values and considering their relationships to land and territory follow the vertical subsumption model which [re]creates colonial injustices. Taking an approach to represent place-based relational values rooted in horizontal portability can contribute to the recognition of different ways of valuing nature that fall outside conventional frameworks (Termansen et al., 2022). It could also move the incorporation of relational values from progressive jurisprudence and community initiatives into policy instruments and decision-making in diverse biocultural contexts.

Finally, as already mentioned, research can play an essential role in supporting horizontal portability, but requires, in turn, more flexible frameworks to evaluate success. The 'publish or perish' expectation incentivises scholars to orient the interactions with communities towards the goal of producing valuable academic output. Thereby, information is extracted and treated as data that easily fit into the framework of academic peer-review publishing and the knowledge of marginalised communities is exploited without benefit for, or even to the detriment of the communities themselves (Cruz & Luke, 2021). Co-produced research takes more time than what usual project grants would allow for and might lead to the production of an output format that is considered relevant by the community but might not be relevant under scholarly criteria. Therefore, further forms of research outputs (i.e. audio-visual materials, gatherings, actions, ceremonies, stories and other modes of expression) and other forms of assessing impact need to be included in academic evaluations to facilitate the adoption of horizontal portability in research.

On a critical note, horizontal portability is difficult to implement because of the time and costs that it might require, as is true for all approaches that seriously work together with local communities in equitable ways that respect and preserve diverse worldviews. Moreover, horizontal portability might have shortcomings related to the impossibility of fully translating specific meanings across contexts or when radically different ethical norms clash; for example, when relationships to whales in one place support hunting practices (Makah people in the Pacific Northwest) and in another place require a sacred obligation to protect their lives (Yuin people in Australia east coast). While there are traditional ways of listening to each other's stories across differences, conflicts are sometimes inevitable.

Nevertheless, supporting horizontal portability can improve the use of place-based relational values in environmental values research, policy, and action, through principles that promote plurality in the production of knowledge and its applications. Horizontal portability is not a panacea but can provide a basis for lively discussions and further developments in valuation studies. Moreover, it can offer a framework for research that challenges established models

of measuring success and strengthens the co-creation of knowledge with community partners. By more fully articulating place-based relational values in the valuation of nature, participants can build mutual trust and alliances. As a corrective of and a complement to more traditional generalisation approaches, horizontal portability can facilitate the communication and sharing of place-based relational values and thereby inform research, practices, and policy across biocultural contexts.

## AUTHOR CONTRIBUTIONS

Our study was conceptual and based on a global synthesis of authors' previous studies and literature reviews. As such, there was no local data collection. However, the geographical distribution of the authorship team is diverse, with representation from multiple continents and diverse backgrounds. Austin Himes and Barbara Muraca conceived the ideas for the workshop where the article was conceived. Austin Himes, Barbara Muraca, Karen Allen, Mollie Chapman, Betty Rono, Marcondes G. Coelho-Junior, Rachele K. Gould, Thora M. Herrmann, Jasper O. Kenter, Stefan Ortiz-Przychodzka, Jasmine Pearson, Marc Tadaki, Tomomi Saito and Aletta Bonn participated in the workshop in person, and 'Alohi Nakachi contributed to the workshop virtually. Georgian Cundill and Gabriel R. Nemogá participated in virtual meetings before and after the workshop. All authors contributed to writing the manuscript. Austin Himes coordinated the writing, editing, and submission of the manuscript. All authors contributed critically to the drafts and gave final approval for publication.

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## ACKNOWLEDGEMENTS

This article is a joint effort of the sILK: Synthesising Indigenous and Local Knowledge worldviews to develop frameworks for effective operationalisation of relational values in environmental governance working group kindly supported by sDiv, the Synthesis Centre of the German Centre for Integrative Biodiversity Research (iDiv) Halle-Jena-Leipzig, funded by the German Research Foundation (FZT 118, 202548816). Austin Himes acknowledges support by the Forest and Wildlife Research Centre, Mississippi State University, and the USDA NIFA McIntire Stennis project MISZ-067040 1023932. Aletta Bonn acknowledges support by the ValuGaps project (BMBF 01UT2103A). Mollie Chapman thanks the University Research Priority Program on Global Change and Biodiversity of the University of Zurich for their support. Stefan Ortiz-Przychodzka was funded by the German Ministry of Education and Research (BMBF, grant number 01UU1903).

## CONFLICT OF INTEREST STATEMENT

Mollie Chapman and Aletta Bonn are Associate Editors for *People and Nature*, and Rachele Gould is a Lead Editor for *People and Nature*, but none were involved in the peer review and decision-making process.

## DATA AVAILABILITY STATEMENT

There is no data archiving applicable to this paper.

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## SUPPORTING INFORMATION

Additional supporting information can be found online in the Supporting Information section at the end of this article.

**Appendix S1.** Embodied and deliberative methods.

**How to cite this article:** Himes, A., Muraca, B., Allen, K., Chapman, M., Coelho-Junior, M. G., Cundill, G., Gould, R. K., Herrmann, T. M., Kenter, J. O., Nakachi, A., Nemogá, G. R., Ortiz-Przychodzka, S., Pearson, J., Rono, B., Saito, T., Tadaki, M., & Bonn, A. (2025). Horizontal portability: A proposal for representing place-based relational values in research and policy. *People and Nature*, 7, 752–764. <https://doi.org/10.1002/pan3.70016>