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Use your power for good: plural valuation of nature – the Oaxaca statement

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Non-technical abstract

Decisions on the use of nature reflect the values and rights of individuals, communities and society at large. The values of nature are expressed through cultural norms, rules and legislation, and they can be elicited using a wide range of tools, including those of economics. None of the approaches to elicit peoples' values are neutral. Unequal power relations influence valuation and decision-making and are at the core of most environmental conflicts. As actors in sustainability thinking, environmental scientists and practitioners are becoming more aware of their own posture, normative stance, responsibility and relative power in society. Based on a transdisciplinary workshop, our perspective paper provides a normative basis for this new community of scientists and practitioners engaged in the plural valuation of nature.

Technical abstract

During a workshop held in Oaxaca, Mexico, a shared vision, mission and strategies to foster a more plural valuation of nature were developed. The participants represent a wide range of backgrounds and are active in science, policy and practitioner networks and activities.

Their common ground is the recognition of the need to change the prevailing culture of how nature is valued and subsequently managed as an essential step towards a more just and sustainable world. After an open plenary session in which the goal of the workshop was determined and the diverse perspectives and backgrounds of the participants were heard, breakout groups developed the components of a shared vision, mission and strategies for plural valuation of nature. Consequently, these components were discussed back in plenary and consolidated into a consensus text, which was further debated and its main building blocks agreed upon. The compilation of our shared views converged into a normative call and perspective to share with our peers. The information generated throughout the workshop was collaboratively synthesized, amended, reviewed and validated by all workshop participants/co-authors. Our message aims to contribute to advancing plural valuation approaches as a science-policy field, as well as to raise personal awareness among researchers and practitioners on implicit inequality and power issues.

Social media summary

Neutrality or power? Capturing plural values of nature needs a well-defined vision, a bold mission and clear strategies.

If you advance not knowledge, they will perpetuate ignorance;
If you exert it not for good, they will for evil.
– Frances Wright, Scottish writer

1. Introduction

This paper summarizes the outcomes of a workshop on multiple values of nature held in November 2017 in the city of Oaxaca, Mexico.[i] The workshop convened 28 participants from diverse regional, disciplinary and professional backgrounds, active in transformative research and practice. After sharing local, sub-global and global experiences on the plural valuation of nature, we identified a common vision, a mission to pursue with the growing plural valuation community and part of a strategy going forward.

Nature is valued in very different ways by individuals and groups with very unequal levels of power, and a more plural approach to valuing nature is increasingly seen as critical to addressing deep inequities, injustices and conflicts. Scientists and practitioners working on the valuation of nature have a position of power to contribute to addressing this challenge. Yet the power of the research community to foster change remains unrealized as the dominant scientific postures and academic structures, as well as institutional incentives at a practical level, can often restrict open debate and constrain transformative change. Recent research on the ineffectiveness and potential harmfulness of single-approach valuation (e.g., Bigger *et al.*, 2017; McDermott *et al.*, 2013; Pascual *et al.*, 2014; Poole, 2018; Rozzi, 2012; Turnhout *et al.*, 2013) has increased awareness of the importance of plural valuation. We argue that a global paradigm shift towards a more plural valuation is urgently needed, and in support of the emerging plural valuation initiatives we propose a shared vision, mission and strategy for the growing group of researchers and practitioners who (re)position themselves at the frontline of post-normal and action-orientated research, as well as decision-making around nature.

2. Valuing nature for sustainability?

Protecting life through the sustainable use of nature is at the heart of the United Nations Sustainable Development Goals (UN SDGs). The SDGs aim to reconcile ambitions for human resource use with ethical considerations and ecological limits. Globally, nature and its associated contributions to peoples' quality of life are in severe decline (Chaplin-Kramer *et al.*, 2019; IPBES, 2018a, 2018b, 2018c, 2018d, 2019; WWF, 2018). Valuation of nature – in its broad sense of assessing its importance and significance for people's quality of life – is essential to making societal decisions on nature's management and the use and distribution of its contributions. Values related to nature are articulated by diverse institutions and are as such associated with culture and traditions, which together impact nature through several mechanisms (Aragão *et al.*, 2016; Hejnowicz *et al.*, 2017; IPBES, 2015; Kelemen *et al.*, 2015; Pascual *et al.*, 2017; Šunde *et al.*, 2018). In other words, none of these valuations are neutral, and more to the point, neither is the information underpinning them. Valuation is – often implicitly – based on specific lenses through which human–nature relations are perceived. Diverse views and aspirations, cultural norms, differences in power, gender, class, religion and age all influence the ways in which values are attributed to economy-related profit values, biodiversity and socio-cultural heritage (Arias-Arévalo *et al.*, 2017; Klain *et al.*, 2017). Consequently, differences in how we relate to nature are at the core of socio-environmental conflicts and represent a hidden bottleneck for realizing the sustainable and equitable flow of the contributions of nature to people within and across generations.

Recognizing the full scope of values of nature requires respect for the principles and practical implementation of diverse complementary valuations approaches. Since the Rio Summit in 1992, valuation has become a high policy priority, at least discursively, although mostly unidimensional perspectives have been applied (i.e., with either an economic or an ecological value lens) (Fagerholm *et al.*, 2016; Liquete *et al.*, 2013; Martín-López *et al.*, 2019; Nieto-Romero *et al.*, 2014). More recently, the long-recognized need for including plural values has gained traction in the scientific literature and within science-policy platforms, such as the Intergovernmental Science-Policy Platform on Biodiversity and Ecosystem Services (IPBES). IPBES applies a fully fledged plural valuation framework, which aims at bridging worldviews and values held by diverse societal actors, from financial enterprises to indigenous and local communities (IPBES, 2015; Pascual *et al.*, 2017).

This paper puts forward a vision, mission and strategy for scientists, practitioners and policy-makers engaged with sustainability challenges by fostering the practice of plural valuation. Co-developed by a geographically, disciplinarily and professionally diverse group and building on numerous other individuals, groups, ideas, papers and practices, we aim at stimulating a

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much-needed shift in valuation and its consequent policies and practices.

3. What is plural valuation of nature?

Plural valuation has been defined as a science-policy process that assesses the multiple values attributed to nature by social actors (i.e., actors with a stake) and how this knowledge can guide decision-making (Rincon-Ruiz *et al.*, 2019). The growing literature on plural, inclusive or integrated valuation provides a broad range of guidelines for the practical implementation of nature valuation studies (see Figure 1). In plural valuation, valuation is not understood as a single, independent and discrete step of a research or assessment process embedded in a policy cycle, but rather as a deeper and more continuous process: values are intentionally or unintentionally excluded and included from the first steps of description, problem definition and project scoping, all the way up to the communication of results (Figure 1). Plural valuation aims to address these implicit valuation aspects by articulating values through a context-specific process that takes into account different worldviews, dynamic social–ecological interactions, power relations and plural value elicitation itself (Arias-Arevalo *et al.*, 2018). Valuation is the collective responsibility of all societal actors involved, including scientists, decision-makers and funders.

Engaging with an *inclusive team* of a wide range of stakeholders from practitioners to scientists in an open-minded, adaptive and self-reflective posture is essential for plural valuation (step 0; Figure 1). Regardless of the type of challenge or the scale, defining a clear *purpose* with societal actors through negotiation is the foundation for plural valuation (step 1; Figure 1). If this purpose takes into account the stakes, interests, power, influence and dependency of different actors, it communicates a shared understanding of the valuation *scope* (step 2; Figure 1). The scope makes explicit both the position and mandate of people involved in the process and the available human and financial resources for the valuation. This scope also determines the multiple disciplines, approaches, methods and metrics needed to *capture* the diversity of values (step 3; Figure 1). The result, as well as the uncertainties, caveats and risks of valuation, are then *integrated* in an adequate format for the purpose of valuation (step 4). Values are recognized, elicited, measured or co-created throughout all of these steps.

Despite the large knowledge limitations and uneven coverage of different value dimensions and worldviews, the field of valuation of nature has started to close some gaps. New developments include the integration of indigenous and local knowledge systems and practices (Tengö *et al.*, 2014), the development of integrative frameworks (e.g., Hill *et al.*, 2016; Jacobs *et al.*, 2016) and the comparative study of methods' capacities to capture plural values (Arias-Arévalo *et al.*, 2018; Jacobs *et al.*, 2018; Martín-Lopez *et al.*, 2014). Yet, sound methodological approaches are not sufficient on their own. The transformative aspect of performing plural valuation tends to clash with the traditional posture of science as a neutral and objective institution (Crouzat *et al.*, 2018; Pielke Jr, 2007; Temper *et al.*, 2019). Scientists often struggle with the fact that their individual and shared values, worldviews and institutional positions strongly affect the outcomes of their valuation work. Valuation must, therefore, be supported by an explicitly articulated normative vision to effectively align various practices towards the common goal of sustainability and resolving valuation disputes.

In order to start addressing the issues above, our workshop had the explicit aim to set out a vision, mission and strategy to stimulate and provide guidance to plural valuation approaches. Our aim is to provide a starting point for discussion and reflection for the many researchers and practitioners who are struggling to connect their disciplinary expertise with personal engagement for transformative change on the ground. The authors of these article are very clear about what they want, and they see themselves – and their audience – as a growing critical mass of post-disciplinary scholars and practitioners with a common vision, unbound by discipline.

4. The vision: strong sustainability

On the basis of the advances of the last decade of valuation, the visions and goals formulated by various initiatives and their application in diverse contexts, we formulated the following vision for plural valuation:

> *We imagine a world in which the diversity of values – especially neglected values – and knowledge related to nature and its contributions to quality of life are included in policy, decision-making, governance and practice to achieve a more just and sustainable world. We envision a world in which the participation and representation of all people is realized and nature's contributions to people are distributed equitably within and across generations.*

It is argued that the recognition of the multiple values of nature leads to more equitable and more widely accepted decisions (Diaz *et al.*, 2018; Jacobs *et al.*, 2013, 2016; Pascual *et al.*, 2017). Plural valuation can also be more (cost-)effective for three reasons (Jacobs *et al.*, 2018). First, although seemingly complex, recognition and integration of multiple values into decision-making can be achieved by combining established processes and tools. Second, increasing effectiveness by combining methods does not necessarily require a higher cost (Jacobs *et al.*, 2018). Third, in comparison, unidimensional or single-method valuation estimates are often less reliable, making their application riskier (Martín-López *et al.*, 2014).

Decisions are more effectively informed by a richer understanding of the diverse values of nature as this can help identify options that optimize societal benefits while contributing to sustainability. For instance, large-scale hydroelectric projects might provide large societal benefits from a national economic point of view, but simultaneously negatively impact on the livelihoods and social values of local inhabitants. Therefore, recognizing and including local social and ecological impacts for a wide range of stakeholders might avoid severe injustices and social conflicts (Albizua *et al.*, 2019; Jerico-Daminello *et al.*, 2015) (see example in Figure 2).

Addressing the diversity of values can also support the integration and achievement of policy priorities (e.g., the UN SDGs and the Aichi Biodiversity Targets) and can inform policy tools such as natural capital accounting (e.g., System of Environmental–Economic Accounting (SEEA)) and intergovernmental environmental assessments (e.g., IPBES, Intergovernmental Panel on Climate Change (IPCC)). However, a prerequisite for integration is the existence of a context in which the values and goals of different actors can be freely voiced, articulated, understood, negotiated and incorporated into policies. Scientists can make a significant contribution to the creation of this safe space.

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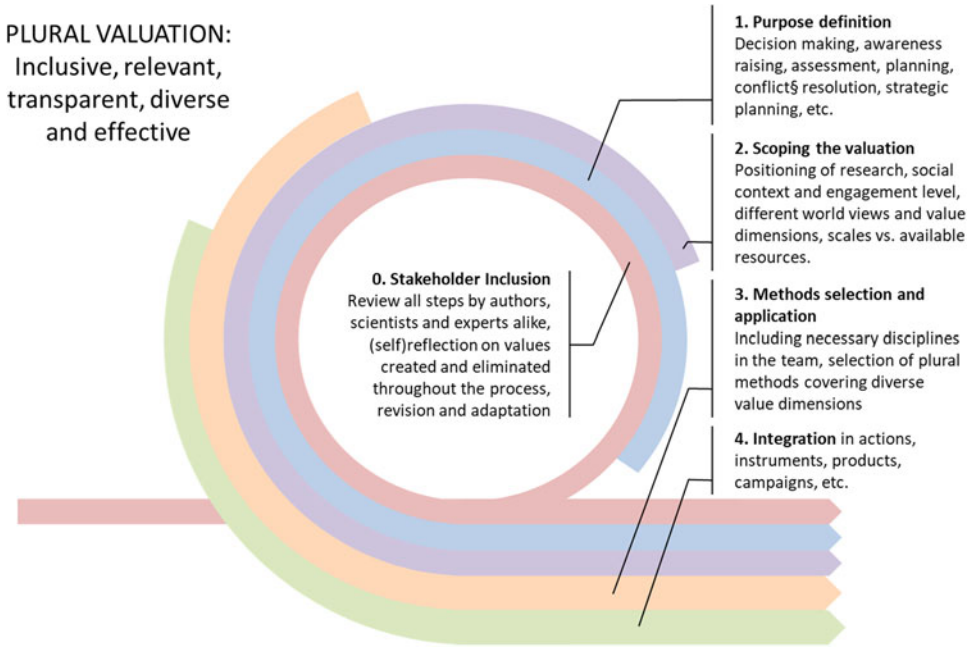

Fig. 1. Inclusiveness and different steps in the process of the plural valuation of nature. For more details, see, among others, Dendoncker *et al.* (2013), Díaz *et al.* (2015), Boeraeve *et al.* (2015), Kelemen *et al.* (2015), Gómez-Baggethun *et al.* (2016), Barton *et al.* (2016), Jacobs *et al.* (2016, 2018), Pascual *et al.* (2017) and Arias-Arévalo *et al.* (2018).

Fig. 2. The need for a more plural valuation. George Palmer with baby Ruby, son Peter, 7, and stepdaughter Karolina, 16, at their home in Tara, west of Toowoomba, Australia. George is worried that his family's health has been compromised by the massive expansion of the coal seam gas industry in the region (picture: Lyndon Mechielsen, https://www.theaustralian.com; aerial view: Simon Fraser University, Flickr). Fracking megaprojects exemplify the destructive pursuit of short-term economic profit for the few, at the cost of the local economy, quality of life and the diversity of values of nature for the many. The decision power of affected local communities is extremely low, resulting in protest, conflict and despair. Plural valuation could help visualize and address these conflicts and advance pluralistic decision-making (Phelan *et al.*, 2016).

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5. The mission: to transform

Realizing this vision requires transforming the way in which values of nature are currently recognized, represented, expressed and captured in dominant research and practice by:

- Fostering recognition of neglected voices and marginalized knowledge systems;
- Empowering and nurturing marginalized worldviews;
- Contesting and restoring power imbalances and injustices that result from current valuation processes;
- Revealing how values are embedded in individual and collective action, social norms and rules, as well as research methodologies and decision-making processes.

Committing to this mission requires substantially different practices and will impact what we choose as our funding sources, formulate project goals or research calls, solicit consultancy, communicate findings, produce research proposals and research outputs and, finally, contribute to our vision.

6. The strategy: to octupy

Plural (integrated, inclusive) valuation has been steadily gaining critical mass over the last decade, allowing researchers to develop skills and expertise, providing a scientific underpinning as well as testing applications in real-life practice and policy contexts. In order to work further on the above mission, it is key to contribute to the transformation of the institutions that – to a large extent – determine the ways in which nature is valued.

We created the word 'octupy' (Figure 3) to refer to the strategy we can employ, each in our own capacity, to realize transformation towards the integration of plural valuation in research and practice. However, it is essential to do this in an open, transparent and collaborative manner, without stepping in the way of each other or duplicating efforts. Etymologically, the term 'octupy' hybridizes the verb 'occupy', in reference to the strategy of collaborative and constructive occupation, and 'octopus', a metaphor for diverse yet connected initiatives: a remarkable feature of the *Octopus* genus is that the partly decentralized nervous system of the octopus operates its arms in a semi-autonomously yet coordinated manner for the common goal of the organism's development and ultimate survival.

Promising steps towards more plural valuation practice are being taken. To *octupy* an institution (or institute) and shift its valuation focus to plural perspectives, one can apply some of these steps:

- Creating spaces for critical reflection on the normative assumptions behind valuation in order to *gain awareness of our own positionality* when practicing valuation (Horcea-Milcu *et al.*, 2019).
- Creating physical spaces and moments for nurturing plural values and forming alliances *within existing disciplinary silos*, to adjust current valuation practice.
- Developing new methods, best practices and networks for plural valuation *across disciplines, age groups, and professional expertise.*
- Strengthening *science-policy-practice* dialogues *beyond disciplines*, to improve horizontal learning and knowledge co-production. This means learning from each other, broadening the network of support and continuous investment in capacity building.

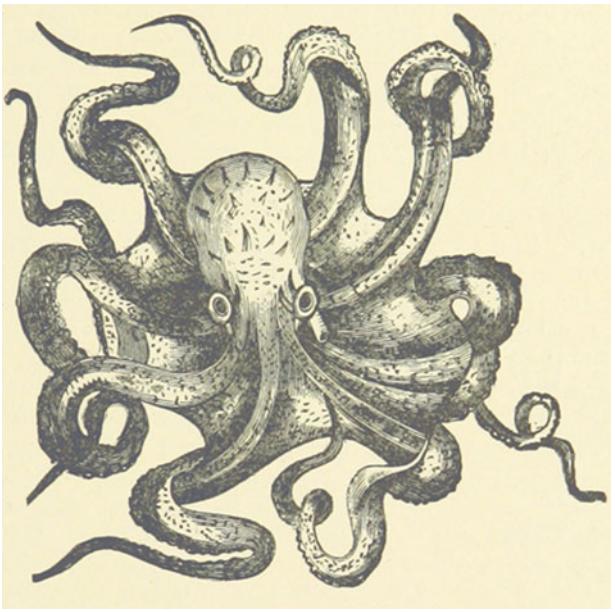

Fig. 3. octupy: oc·tu·py /**'äktəˌpī**/ *verb*. To access and transform various institutions in an active yet constructive manner, with the dual goal of participating in and connecting with a shared goal. Picture from British Library Open Flickr account. British Library HMNTS 10492.ee.20. BUTTERWORTH, Hezekiah, 1891.

- Integrating *local communities and capacities*; connecting abstract concepts with local practices and integrating neglected voices while protecting intellectual property rights.
- Communicating in formal and informal contexts the development in thinking regarding plural valuation in order to engage a *broader community*.

As strategies have to be regularly adapted, octupation is only one step in realizing the full transformation towards plural valuation as a standard practice. Additionally, there is a need for mainstreaming and communicating successes, the development of authoritative global quality standards for plural valuation, compiling repositories of methods and guidance, developing value articulating institutions to empower neglected values, etc.

7. Power: it is up to us

Researchers and practitioners engaged in tackling sustainability challenges are becoming aware of both their power and their normative positions and the responsibility that comes with the exertion of such power. Valuation is more than just a technical job: it requires complex decisions about which problems to pursue, which funding to accept or distribute, who to include in research and decision-making, how to recognize their participation, which methods to choose and how to communicate the findings while upholding scientific rigor, inclusivity, transparency, intellectual property rights and critical thinking. As the ethics of these decisions also determines one's impact on the world, researchers and practitioners face difficult dilemmas that require trade-offs, compromises and hard choices. We hope that a clear vision, mission and the presence of a growing critical mass of plural valuation researchers and practitioners can offer support in making these choices.

In the end, the responsibility of valuation researchers and practitioners – including all of those who work in 'assessment' in the

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broadest sense – is to reflect upon the power they have. We are in a powerful position ourselves to engage in collective decision-making processes. It is up to us to decide what to do with that power.

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Conflict of interest. None.

Ethical standards. The manuscript is our own original work, and does not duplicate any other previously published work; the manuscript has been submitted only to the journal – it is not under consideration, accepted for publication or in press elsewhere. All listed authors know of and agree to the manuscript being submitted to the journal; and the manuscript contains nothing that is abusive, defamatory, fraudulent, illegal, libellous or obscene.

Note

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