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COMMENT

Steps to diversify priority-setting research in conservation: reflections on de Gracia 2021

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There is growing awareness across many branches of science of the need to decolonize research practices and curricula (Aikenhead, 2006; Radcliffe, 2017), and the fields of ecology and conservation are no exception (Baker et al., 2019). Although conservation scientists and practitioners from the Global North are gradually waking up to the fact that local knowledge and agency—including that of Indigenous people—are essential for social justice and to achieving conservation outcomes, the road to decolonizing conservation science remains a long one (Baker et al., 2019). As a discipline, conservation has a long colonial history and remains heavily dominated by institutions in the Global North when it comes to publications, funding, and research networks (Maas et al., 2021).

In a letter drawing attention to the need to decolonize conservation science, de Gracia (2021) focuses on how exercises that aim to set global conservation priorities are heavily biased in

their representation toward researchers from the Global North. This despite the fact that countries and people in the Global South face many of today's most pressing conservation challenges. To make this point, de Gracia identifies Jucker et al. (2018) as an example of research that perpetuates the power dynamics and priorities of researchers in the Global North. We thank de Gracia for highlighting this issue and giving us the opportunity to contribute to this important conversation. We strongly encourage others to read de Gracia and related perspectives that provide much-needed context on why conservation science should strive for better representation. Here, we reflect on some of the limitations of our own work and clarify a few points made by de Gracia in reference to Jucker et al. (2018) and priority-setting research more broadly.

BROADENING PARTICIPATION IN PRIORITY-SETTING RESEARCH

de Gracia's central message is that certain groups—particularly those from the Global South and those outside traditional academic circles—rarely get a seat at the table when conservation priorities are set. We agree entirely. This disparity is captured clearly in a recent meta-analysis by Dey et al. (2020), who report that only around one-third of priority-setting exercises in ecology and conservation involve resource users, and almost none engage Indigenous organizations (although most do include participants from governmental and nongovernmental organizations outside academia). It is easy to see why de Gracia chose Jucker et al. (2018) as a specific example of this broader issue. The project in question was led by a group of conservation scientists largely based at a single institution, the University of Cambridge, which in many ways epitomizes the power imbalance among different regions of the globe. Lack of broad institutional and societal representation is certainly a valid criticism of our work, and a limitation we ourselves drew attention to in our article. However, de Gracia overlooks 3 important aspects of Jucker et al. (2018). First, our goal was not to set new conservation priorities, but to develop a method to reevaluate existing ones; second, the approach we developed actively seeks to increase representation (albeit imperfectly) and third, despite our shared institutional affiliation, as authors we actually represent a diverse group of early-career researchers (ECRs).

First, Jucker et al. (2018) was not a conventional priority-setting exercise as we did not aim to identify new priority research areas. Instead, what motivated our work echoes several of de Gracia's general criticisms of current priority-setting exercises. Recently, priority-setting research has become increasingly popular in the environmental sciences (Dey et al., 2020), with at least 35 such articles published between 2006 and 2016 (see Figure S12 in Supporting Information in Jucker et al. [2018]). However, continuously identifying new areas of priority research might not necessarily be the best way to advance conservation, particularly if no attempt is made to determine how the broader conservation community judges their relative importance. We, therefore, set out to develop a framework to revisit existing priority questions and identify key knowledge gaps that remain. We used the 100 questions posed in Sutherland et al. (2009) as our case study because it was one of the first exercises of its kind explicitly focused on conservation. Using these as a reference, we asked 2 basic questions: how much effort had gone into addressing each of the 100 questions over the past decade and are these topics still perceived as highly relevant to achieving global conservation goals? We did this using a 2-pronged approach: a literature review to estimate effort and an online survey to assess relevance (the latter of which is the focus of de Gracia's Comment). We acknowledge that by choosing these specific 100 questions as our reference, we implicitly legitimize them, even if in our article we were careful to highlight lack of broad representation as a major limitation of Sutherland et al. (2009). However, it is important to keep in mind that at its heart ours was a methodological exercise—a first attempt to develop a framework for reevaluating existing priority topics across any field of research.

Second, by using an online survey to assess relevance, our approach aimed to address de Gracia's major criticism of priority-setting exercises: lack of representation. Our survey reached 222 conservation scientists and practitioners, 5 times as many as those who originally contributed to Sutherland et al. (2009), including respondents from the Global South (South America, Africa, and Asia, excluding Japan), which, despite being a minority (17%), generally tended to assign relevance scores that were broadly consistent with those of respondents from Europe, North America, and Australia (Pearson's correlation coefficient = 0.47, $p = 0.002$ for questions with at least 5 respondents from both groups). This is not to say that our approach was perfect or that it went far enough in addressing the issue of representation. Beyond the obvious geographic biases in the survey that de Gracia focuses on, there are also less visible ones linked to age, gender, ethnicity, disability, socioeconomic status, and education that could have affected our results. These are important limitations of our work, which we documented and discussed in our original article. However, while acknowledging these limitations, our approach did at least take a first step toward broadening participation in priority-setting exercises.

Third, although the authors of Jucker et al. (2018) were all based at the University of Cambridge and its Conservation Research Institute (UCCRI), we did not reflect the typical makeup of a priority-setting group. For one, at the time this project was undertaken, all 45 authors were ECRs (PhDs, postdocs, or research fellows), not established experts in our respective fields. For practical purposes (including funding constraints), we needed to restrict participants to those based in Cambridge, hence the strong institutional bias. We were, nonetheless, conscious that the composition of the team was critical because this factor strongly influences how collaborative and interdisciplinary research is perceived, theorized, and implemented (Aijazi et al., 2021). To encourage inclusivity and participation, diverse voices from academia and nongovernmental organizations were consulted during the design phase of the project. This included ECRs from across disciplines in the natural and social sciences—geography, land economy, law, plant sciences, and zoology—who participated in this planning process. Collaboration in the project emerged from an open call to ECRs,

irrespective of ethnicity, race, gender, or area of expertise. Of the 45 authors, two-thirds were women, and although certainly not a majority, several were from the Global South, including 1 of the 2 project leaders. There are of course many factors beyond age, gender, and ethnicity that determine who participates in priority-setting research, and we cannot (and did not) claim to represent everyone with a stake in the conservation of the world's biodiversity. But we did make a concerted effort to broaden this group.

THE FUTURE OF PRIORITY-SETTING RESEARCH IN CONSERVATION

Reflecting on the need to broaden participation when prioritizing conservation objectives, de Gracia ultimately comes to the conclusion that "until this work is seriously undertaken, articles such as Jucker et al. are harmful and inappropriate." A deeper debate is needed about how conservation science tackles the issue of representation and whether incremental progress should be accepted while limitations are acknowledged (as was the spirit of Jucker et al. [2018]) or whether a more radical shift in practices needs to occur first. What we certainly agree with is that as conservation scientists we can and should do more to narrow the representation gap. Thinking practically, one thing to do is set clear authorship guidelines that ensure people from diverse backgrounds are given the opportunity to participate in and lead priority-setting research. This is similar to the model that the Intergovernmental Science-Policy Platform on Biodiversity and Ecosystem Services (IPBES) follows when nominating contributing authors (although this too has been criticized for not going far enough [Báldi & Palotás, 2021]).

Language is another important barrier to participation, which one can take concrete steps to remove (Amano et al., 2016), although it is by no means the only one. For instance, subsequent work led by authors who contributed to Jucker et al. (2018) looked to canvass a broader group of people by translating their questionnaire into 5 languages (Rose et al., 2018).

Finally, it is important that conservation scientists think of diversity and representation holistically. de Gracia puts a strong emphasis on the Global North–South divide. But diversity and inclusion are much more complex than just geography. Opportunities to contribute to decision-making vary dramatically not just between the Global North and South, but also within them due to factors, such as age, gender, ethnicity, religion, access to education, disability, and socioeconomic status. In striving for greater geographic representation, conservation science must not lose sight of this fact.

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