

Stowing parachutes, strengthening science

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Conservation has a problem. The disparities between the Global North and Global South lead to neocolonial behaviors, inefficiencies and setbacks, and hinder forward progress on our overarching objectives of protecting the planet and its inhabitants. One characterization, and manifestation, of this general issue is as parachute science (de Vos, 2020; Stefanoudis et al., 2021). Parachute science occurs when researchers from the Global North work in the Global South with no long-term investment, or consideration of ground realities. The partnership between those from the outside and those on the ground is built once resources such as funding are acquired – often too late to ensure the equitable inclusion of local partners. The outsider, the resource holder, wields unequal power and often controls the narrative and research agenda. This in turn results in the work not being aligned with the priorities on the ground but with those of the outsider – enhancing their career trajectory but derailing existing local conservation efforts.

In conservation, parachute science can be a by-product of many interacting factors. The higher levels of biodiversity and imminent threats in the Global South make them targets of conservation for philanthropic organizations, conservation NGO's, and foreign scientists, often with the best of intentions. However, the historic legacy of differential wealth results in differences in educational backgrounds, access to funding, equipment, and expertise that leads to power disparities between parties collaborating on the ground for tasks ranging from project inception and data gathering to application of conservation strategies.

Parachute science is a particular problem for conservation because we recognize the resource constraints that we have and the clear need to maximize our efficiencies in using these resources to develop an understanding of biodiversity, people, and the interactions between people and biodiversity that lead to good conservation outcomes. However, when we perpetuate underlying disparities, it prevents us from using our resources effectively. We are not empowering the local expertise that is best placed to drive outcomes. We are not fostering the development of the local cadre of scientists, practitioners, and policy-makers who have the power to make a difference in the long term. We are instead perpetuating personal injustices that inhibit collaborations from being collaborative.

As the globe struggles with rectifying the wrongs of power disparities, we urge conservation science and practice to confront the issue and embrace the changes needed to stow the parachutes and strengthen our science and practice. The special section in which this contribution sits, addresses the many guises that parachute science may take and offers several strategies for resolving the issue. Elsewhere (de Vos, 2022) I have detailed specific strategies for avoiding becoming or being a parachute scientist (summarized in Table 1). Most of these strategies can be summarized by genuinely applying three well-worn adages that often become platitudes: (1) think before you act; (2) do unto others as you would have them do unto you; and (3) it is better to give than to receive. This is not rocket science. However, it does take an extreme form of mindfulness to think about the words, actions, behaviors, and space we hold. To recognize that even the best intentions

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TABLE 1 Strategies to avoid parachute science. Adapted and condensed from de Vos (2022)

Project planning

- Explicitly recognize multiple potential motivations for a study or a project
 - Advancing science; advancing conservation knowledge, driving conservation impact, advancing one's career, building local capacity
- Conduct a literature review that includes local journals and/or local language publications
- Identify potential local partners and build the collaboration before going after funding
- Understand the science/conservation priorities of the place where the work will be conducted; listen
- Respect the local laws and policies regarding data collection, research permits, and conservation interventions
- Recognize that bringing funding to a new collaboration creates an inherent imbalance that requires managing; requires reparative equity sharing
- Recognize that working outside your home is a privilege and not a right
- Conduct reflexivity exercises with staff/researchers at regular intervals throughout the project to examine their influence and varied positions on the subject being studied

Project structure

- *Build truly collaborative partnerships*
 - Do not partner with local researchers simply to get permits (avoid tokenism)
 - Do not place partners in subjugated roles
 - Define everyone's role on the team; share leadership
 - Coproduce the science to share the benefits
 - Respect knowledge and advice from local partners
- *Invest in capacity building*
 - Invest in training that can lead to jobs
 - Ensure project is self-sufficient and can continue in your absence
 - Provide opportunities for exchange
 - Create opportunities for local students to participate and engage in research
 - Recognize skills and capacity of local partners

Building trust

- Invest time and commit long term
- Understand the role of key local leaders and work with them to drive policy changes
- Create opportunities rather than taking opportunities
- Be mindful about sharing benefits as well as burdens

Sharing knowledge

- Incentivize local team members to lead publications (avoid "gift" authorship)
- Support non-native English speakers through the writing and publication process
- Make collaboration a condition of data use (e.g., open access data, existing databases)

TABLE 1 (Continued)

- Provide training necessary to access and use data collected
- Publish open access whenever possible
- Increase access to research through social and traditional media and translate into local languages when possible

Driving change

- *Journals, editors, and reviewers*
 - Check for evidence of meaningful collaboration, inclusion of local partners, and co-authorship
 - Require acknowledgement of research permit with relevant details
 - Require an inclusion and diversity statement for each submission
 - Recruit more reviewers and editors from underrepresented groups
 - Provide mentoring for early career editors
 - Consider publishing articles if grammar is imperfect but core message is clear
 - Consider publishing online summaries in local languages of authors
 - Look at alternative models for supporting open access publishing
- *Funders*
 - Fund workshops for proposal writing with partners
 - Fund foreign research only where local partners are meaningfully included
 - Directly fund local institutes/organizations and support them to manage larger funds where capacity does not exist
 - Support salary compensation and training of local teams
 - Support open access publication
 - Fund local researcher participation in meetings and conferences (local and international)
 - Mandate dissemination of results particularly to communities within study areas
- *Institutions and societies*
 - Introduce alternative metrics of success
 - Issue best practice guidelines that ensure equal partnerships
 - Issue best practice guidelines for volunteers accepting internships abroad
 - Provide training on colonial histories and how their legacy impacts conservation today

coupled with an eagerness to do good can result in unintended consequences that negate positive actions.

It is difficult to constantly consider how we are interpreted by others. For those in the Global North working outside their own borders, what does it say if they are, or are not, willing to invest time in growing local expertise, or recognizing that there is much to learn from those on the ground? That there are more equitable ways to partner with local teams, or a need to defer to local expertise for on-the-ground decision making and in conversations

with policy-makers? Can their goals include writing themselves out of a project in the long term by strategically nurturing and growing sustainable conservation leadership on the ground? For those from the Global South, how does it reflect if they accept resources (particularly funding) from the Global North, insist on particular roles in collaborative projects, or push to integrate career development of others in a collaborative project?

I believe that we share a collective interest in developing conservation as a global community of science and practice. As an editor of *Conservation Science and Practice*, this can take three immediate and personal guises. First, should we accept articles where the English grammar is weak? One's initial reaction may be: of course not. Thinking about this more deeply, you find that the hegemony of English means that for many in the Global South, scientific advancement and conservation advances are tied to writing articles in English language peer-reviewed journals when English is not the author's language of comfort. Finding editorial help may not be something that an author can access through their personal networks and paying for the service may be beyond what many can afford. Similarly, journals can take on this editorial task, but most cannot afford this professionally and rely on what help reviewers and handling editors provide. So, yes, we should be ready to accept articles where the grammar is imperfect, but sufficient that a reader can understand the core message.

The second issue relates to increasing access. For conservation to be successful, we need as large and diverse an audience and team as possible. To broaden our reach, should we consider publishing online summaries in the language of comfort of the lead authors and thereby the research site? Too often, articles that are written in non-English languages are relegated to regional or local journals that are not easily accessible or readily accessed by the science and conservation community. If, however, we encouraged and supported the work to be published in visible, high-impact journals like *Conservation Science and Practice* and allowed a foreign language summary to be published online, we can take steps toward preventing the assumptions that there is no work being done locally—that a country must solely rely on external expertise to address its conservation issues.

The third issue is how a journal should respond with respect to waiving author publication fees. I imagine that everyone would rather not pay to have their science published. The economic model of scientific publications has clearly shifted toward open access, to the benefit of countries that cannot afford pricey subscriptions. Yet, to publish articles, it costs money that many from the Global South do not have. Should a journal inflate prices so that those who can afford subsidize those who cannot? What other choice is available?

More broadly, it is important for journal editors to check for evidence of meaningful collaboration, inclusion of local partners, and co-authorship. Acknowledgment of research permits detailing the name of the issuing authorities should be a minimum requirement. While efforts to actively recruit reviewers and editors from underrepresented groups—perhaps through open calls to prevent appointment of those who are already well networked in the system—must be prioritized.

These are issues that we struggle with as journal editors, irrespective of where we are doing our own research. This exemplifies the fact that global disparities in opportunities, often directly leading to parachute science, impact all of us at some level.

Solutions, therefore, come from within each of us. How we embrace and empower the broadest, most diverse global conservation community over the next decade will make all the difference in whether conservation is a popular global value or if it retains its air of elitism. We choose the former.

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