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Peer reviewed

# Mentorship practices that improve the culture of peer review

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*The current system of peer review drives racial and gender disparities in publication and funding outcomes and can suppress the perspectives of marginalized scholars. Established researchers have an opportunity to help build a fairer and more inclusive peer review culture by advocating for and empowering their trainees.*

Imagine researching a fundamental problem in psychology that has real-world implications. Now imagine having that work desk rejected because “the focus on race is ideologically motivated and cannot be trusted” or “this paper is better suited for a specialty journal”. These are paraphrased excerpts from peer reviews on manuscripts reporting findings on racial bias, taken from our own experiences and an unpublished preprint<sup>1</sup>. In principle, peer review should promote rigor and improve research, fairly considering all research topics and study populations. However, in practice the current peer review culture leads to disproportionately negative outcomes for marginalized scholars. This systemic bias in peer review is perpetuated through individual-level biases (including preferences for work by authors who share the reviewer’s and/or editor’s gender and/or racial identities) as well as structural-level biases (including devaluation of topics or methods pursued by marginalized scholars)<sup>1,2</sup>. These biases lead current peer review culture to prioritize research advanced by a narrow and privileged slice of society—the largely white, male-dominated culture that shaped current scientific perspectives—and ultimately limits psychological knowledge.

Ethically, it is problematic to gatekeep scientific publications based on biases that disproportionately impact marginalized groups. Yet, there are numerous documented biases that do exactly that<sup>2</sup>. For example, U.S. National Institutes of Health grant applications by white authors are funded at a rate of 17.7%, whereas applications by African American or Black authors are funded at a rate of 10.7%<sup>3</sup>. These racial disparities are driven at least in part by reviewers’ preferences for some topics over others and their decisions to discuss an application or not<sup>3</sup>.

Reviewers are subject to confirmation bias, tending to favor evidence that fits with their pre-existing views<sup>2</sup>. This bias can contribute to the perception that work based in traditionally accepted perspectives, topics, and methods is more meritorious than other work<sup>2,4</sup>, which can lead to differential funding or publication outcomes<sup>1,3,4</sup>. The perspectives and research of marginalized scholars might therefore be suppressed<sup>1</sup> and common approaches in some areas of psychology (such as qualitative research in cultural psychology) can be devalued. Furthermore, homophily biases of white individuals on editorial boards<sup>5</sup> and reviewers can have consequences for publication outcomes. Authors who share identities with reviewers are more likely to have their papers accepted<sup>2</sup>. Furthermore, the bias to see white individuals and white-associated dominant methods as the ‘default’<sup>1,6</sup> leads to the assumption that research findings in white individuals will automatically generalize to other groups, whereas research focused specifically on communities of color is seen as necessarily particularized and requiring explicit justification. These biases shape scientific discourse and limit important discoveries<sup>7-9</sup>. More broadly, underrepresentation limits the depth of research<sup>9</sup> and perpetuates existing imbalances within academia, further marginalizing voices that are crucial for a comprehensive understanding of racism and other forms of bias.

We call for a change in how peer review is conducted as well as what and who it serves. Ideally, peer review should be conducted with an eye toward cultivating excellence, consisting of constructive and actionable feedback that promotes diverse perspectives and a more inclusive understanding of psychological phenomena, instead of gate-keeping

A shift in peer review culture will require change at multiple levels, from the actions of individuals to the practices and policies of institutions. Established researchers who mentor and advise PhD students and other emerging scholars have the opportunity to directly shape the evolution of peer review by supporting, advocating for, and empowering these future reviewers and journal editors. Changing the culture of peer review is a ‘prefiguration exercise’ — a means to envision and enact the changes we aspire to see in the broader scientific community.

### **Include trainees in peer review**

Advisors should empower the next generation of researchers by integrating them into the peer review process. One way to include trainees is to offer formal or informal reviewer training. Training can take many forms, such as a mock review process for manuscripts from other students. A particularly powerful training exercise is for established researchers to add their Ph.D. student as a co-reviewer when invited to review a manuscript. Co-reviewing can simultaneously demystify the review process and enrich the student’s research capabilities. Advisors should communicate norms and policies around reviewer ethics and offer advice on evaluating scientific rigor and constructive feedback. For instance, they can help trainees identify strengths and weaknesses of the manuscript (recognizing that not all weaknesses are fatal flaws and prioritizing major issues) and facilitate a reviewer report that is critical yet kind and developmental.

Advisors must also educate trainees about biases in the current peer-review system. Knowing where biases likely influence the production of knowledge helps increase the ability to detect them and the motivation to correct them. Advisors should provide strategies for writing constructive and anti-racist reviews (resources collected by [Reviewer Zero](#) can be found [here](#)). Some key principles include actively acknowledging and challenging one’s biases, fostering a tone of respect and inclusion, and ensuring a fair and balanced evaluation of research irrespective of topic or racial and ethnic background of the authors. Reviews should seek to promote diversity of thought alongside academic rigor, give due consideration to alternative perspectives and methodologies, and provide constructive feedback that supports the growth and development of all scholars involved in the publication.

Advisors can also empower trainees by highlighting their agency. Trainees have a say in the culture of peer review and can improve it through their actions. Advisors and trainees might brainstorm together what a better peer review culture would look like and practice those principles in co-written reviews, for instance by anticipating and pre-empting biased comments from other reviewers. For example, when relevant they could include arguments that the research topic or study population has not received sufficient attention or develop arguments that key questions and methods have been unfairly devalued in the published literature due to biases in peer review.

### **Support and advocate for junior researchers**

Advisors should help trainees thrive in the current flawed peer review system. This support and advocacy can take multiple forms.

The current culture of peer review often results in receiving harsh and potentially biased feedback. Receiving a destructive review can be distressing, especially for trainees. It can reduce their feelings of confidence, motivation, and belonging; or lead them to abandon a project altogether<sup>2</sup>. Unfortunately, neither the trainee nor the advisor can control the tone or quality of the reviews they receive. We therefore recommend that advisors devote sufficient time and support to reading reviews with trainees and provide instruction on how to respond to reviews. For example, advisors can remind trainees that negative reviews are unfortunately common and do not reflect their abilities as a scientist; demonstrate how trainees can push back on unfair, incorrect, or biased comments and requests for unnecessary revisions; and transform vague criticisms into specific action items for the revision.

Advocacy in the peer review process can also involve working with trainees to appeal unfair editorial decisions or write rebuttal letters. For example, mentors can guide trainees in effectively communicating the importance of their work, especially when the work challenges prevailing norms or introduces novel perspectives. Mentors can take the lead in formulating rebuttal arguments that highlight the value of the work so that trainees can feel empowered to do the same in the future. This advocacy can build confidence in addressing reviewers' concerns while maintaining the integrity of the trainee's original contributions, and foster resilience and perseverance in navigating the academic publishing landscape.

Advisors can also advocate broadly for a more inclusive scientific culture. In their own reviews and evaluations, they should emphasize the quality of work rather than falling back on flawed metrics such as journal impact factors. When they see harsh or culturally insensitive reviews written by others, they should flag them to the editor for a closer look. They should call out biases in reviews, hiring decisions, departmental seminars, and conferences, including those that promote white or WEIRD (Western, Educated, Industrialized, Rich, and Democratic) participant samples as the default<sup>6</sup>, or view dominant methods as more meritorious. Advocating for a more inclusive scientific culture is particularly important because biases that systematically disadvantage marginalized scholars compound over time and across contexts.

### **Build a more inclusive future**

Individuals who mentor and train junior scholars can help nurture a new generation of scientists who will continue to enact positive change in the culture of peer review. By supporting and advocating for their trainees and fighting against broader bias in their field, advisors help ensure that their trainees' scholarship is fairly evaluated and that they have the tools to fairly evaluate the work of others.

The current culture of peer review, and the biases within it, offer an important lesson in how concentrations of power and social position can influence the production of knowledge and lead to less rigorous and generalizable research than if more diverse perspectives are valued<sup>10</sup>. Changing the culture of peer review will ultimately make science more inclusive and help enact changes for a more just scientific community.

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