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Redressing Inequities Within Our Margin of Maneuverability: A Narrative Inquiry Study

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Abstract

This extended example illustrates the ways an individual's margin of maneuverability affects and shapes their approach to redressing inequities. After explicating the relationship between inclusion and oppression, the authors use a case of unjust academic paper reviewing to demonstrate how they walked through the 4Rs: Recognize, Reveal, Reject Replace. This applied theory of inclusion can be deployed in a range of contexts, and its on-the-ground application depends on several elements, including the margin of maneuverability. Rather than report on study findings, as proposed, this paper uses the opportunity of injustice within the review process to directly apply the 4Rs.

Introduction

Across the fields of engineering, higher education, and STEM education, the relative lack of diversity in STEM fields, particularly engineering, has been long lamented[1]. Colleges and universities across the United States have made efforts to diversify representation of faculty and students, but these efforts have not solved the issue of equitable inclusion of people from multiply marginalized and underrepresented (MMU) groups in higher education generally and in engineering specifically. A number of scholars have shown that the perceived norm of an engineer is white and male and that this perceived norm leads to a variety of exclusionary and oppressive practices in academic and professional settings [2], [3]. Many of these practices, like rejecting or berating the work of MMU scholars whose linguistic practices or methodologies do not align with status quo perspective, are systemic and structural—not incidental. These need to be addressed on multiple fronts and acknowledged as systemic and structural [4], [5]

MMU scholars and students in STEM often feel a sense of ostracization in higher education settings, and institutions have long worked to improve retention within such groups. Black women studying engineering at one university felt isolated and hypervisible and faced microaggressions and difficulties forming study groups: "[M]icroaggressions were ingrained in the educational atmosphere for these women" and so "institutions must also develop strategies and policies about how educators and colleagues can confront and mitigate them" [6]. Our applied theory of inclusion moves individuals towards change while also encouraging the development of coalitions for policy and procedural changes. As such, this applied theory offers

one approach faculty can use to confront and mitigate the unjust practices that can accurately be called systemic or structural.

In this paper, we offer an extended example and applied theory of inclusion that aligns with the concerted efforts in STEM to address issues of diversity and inclusion. Such efforts move not only beyond diversity but towards an understanding of inclusion that recognizes both oppression and intersectionality as central to efforts towards institutional change.

From Diversity to Inclusion: Introducing the 4Rs and Margin of Maneuverability

In STEM and engineering education, early arguments for diversity [1], [7], [8]made way for bodies of research that report on individual and institutional efforts to increase the representation of women and racial minorities within STEM fields [9]–[11]. Although diversity continues to be a theme throughout the literature, more recent scholarship acknowledges the need for inclusion in addition to diversity. Lee et al., for example, focus on the need to address campus climate and suggest we consider how our cultural environments can be more "inclusive, allowing students from various backgrounds to feel welcome and comfortable" [12]. Moving to inclusion has raised both institutional and disciplinary awareness that recruiting diverse populations isn't enough to sustain the pipeline of underrepresented groups into the professoriate or workforce. Puritty et al. make this point clear, as they articulate the need for shifts in focus from diversity statistics to the experiences of underrepresented minorities within institutions [13].

Many efforts toward inclusion have emerged as a result, particularly in engineering education [4], [14], [15]. Taskforces and special interest groups on inclusion and diversity have emerged, and a range of efforts to study inclusion quantitatively and qualitatively have peppered both conferences and journals. A recent special issue of *European Journal of Engineering Education* focused on inclusive learning environments, and the editors of that issue called for papers that "focused on the cultures and environments of engineering education programmes as the locus of change" [4]. Such strides indicate that across engineering, the need to make changes to the culture, not just the representation, has been widely accepted. Johnson et al. work towards conceptual change, working to move student participants from an individual view of oppression towards a systemic view of oppression [16]. As an extension, the theory of inclusion we present here is *applied* and works towards dismantling systems of oppression rather than merely recognizing them.

Across engineering education and the academy at large, scholars have articulated the need to do more than rely upon numerical representation as evidence of diversity and, further, have acknowledged that diversity must be paired with inclusion [4], [9]. Inclusion, however, can be achieved only through the dismantling of structural and systemic oppression [17], [18].

Despite recognizing this need, the field of engineering education (broadly construed) struggles with how to go about meeting it; we still have few specific strategies for dismantling oppressive structures. Further, as institutions and disciplines (including engineering education) fail to account for power differentials, change-makers within those institutions and disciplines find their work hampered and constrained. This is largely because inclusion and equity work requires attending to the ways in which an individual's privilege, positionality, and power (theorized as the "3Ps" by Walton, Moore, & Jones [17], [18]) interact differently in various contexts. Privilege, the types and extents of uncarned advantages we are accorded, and positionality, what our identity means in particular contexts of action, affect the kinds and amounts of power we have for taking action in pursuit of justice. In other words, the 3Ps comprise an individual's margin of maneuverability.

Illustrating Margin of Maneuverability

The margin of maneuverability illustrates the limited moves any single person might make in response to inequities and provides a useful framework for decision-making when an individual attempts to address an exclusionary or inequitable practice. As such, understanding one's own margin of maneuverability allows for activists and institutional change-makers to optimize their individual and collective potential. It also allows change-makers to navigate situationally complex systems of inequity. In this paper, we provide an extended example to demonstrate the need for new approaches to closing the gap between recognizing inequity and replacing those inequitable practices with more inclusive practices.

For example:

A coalition of cisgender Black and white women scholars propose a narrative inquiry study to an equity and inclusion track of a conference. The study presents a new concept that helps explicate how social justice might be enacted within the academy and draws on Black women theorists in order to frame the project.

The lead author, a white woman, receives the reviews, only to find that the reviewer has disparaged the writing style and the methodology, demanding graphs and charts and analysis! The tone of the review is troubling, particularly for a social justice track: as their qualitative study (along with decades of research) shows, the preference for a particular style of writing, for charts and quantitative analysis, often reveals and upholds patriarchal, Western and white supremacist values.

Key to social justice, the lead author thinks, is an acceptance of difference.

In addition to being angry at the treatment, the author is worried about exposing her coauthors and the stories of her multiply marginalized participants to this kind of treatment in the conference. What can or should she do?

Luckily, the author has her applied theory to inform her decision-making:

Two justice-centered pillars inform the next step: (1) in deciding how to proceed, center and prioritized the most marginalized and vulnerable and (2) use your coalition and margin of maneuverability to figure out what to do next [17].

This case provides a useful example of how the margin of maneuverability works. The author has relative privilege: she is white and though she was raised in poverty, she is now middle class; positionally, her tenured position in the university solidifies her class in a way that, years ago, it might not have. Her coalition members are also tenured, though some are multiply marginalized.

In taking steps to redress inequities, Walton, Moore, and Jones suggest four steps that can enact change:

- 1. recognize injustice,
- 2. reveal that injustice,
- 3. reject that injustice (ideally with a coalition member), and
- 4. **replace** that unjust behavior or system with something else.

In the case above, the lead author walks through each of these steps, knowing that, given her privilege and positionality, she has a certain amount of power to address what she has recognized as an unjust behavior. In the rest of this paper, we explain the way this actor worked through each of the 4Rs given her margin of maneuverability. The case demonstrates how this applied theory of inclusion might be deployed by faculty across the field of engineering education when they encounter injustices and oppression.

Recognize: What is the nature of the injustice? And how is it recognized?

In this situation, the lead author recognizes the reviewer response as more than prickly or an angry "reviewer two." As described above, the reviewer denies the coalition of scholars the opportunity to engage in their own linguistic practices and demands the integration of data analysis and visualization that is clearly counter to the methodology being used (narrative inquiry). Although some might take this review response as "just part of the game," these scholars are a part of a coalition of authors who have penned an anti-racist reviewer's guide [19]. In the development of this guide, the coalition has identified this kind of behavior for what it is: the centering of a particular way of knowing and communicating *to the exclusion* of other ways. The reviewer's exclusionary behavior maps onto several faces of oppression, most notably, marginalization (of particular ways of making knowledge) [20]. Further, the proposed communication and knowledge-making suggested by the reviewer reflects Western ways of

knowing, making knowledge, and communicating [21]; as such, this aligns with cultural imperialism and, following Dotson, is a form of epistemic violence [22], [23] Because reviewers serve as gatekeepers of knowledge, the review is not merely preferential. The reviewer has power over how the coalition of authors shapes their work. Indeed, if the coalition had not been tenured scholars, they might have heeded this advice. Instead, the lead author **recognized** it as injustice and moved on to the next step: **Reveal**.

Reveal: How did the injustice get communicated? Who gets these communications and how do the receivers enable or constrain action?

In this situation, the lead author makes two important **reveal** steps: 1) to the coalition and 2) to an organizational leader.

Revealing to the Coalition: Before taking any steps, the lead author discusses the reviews with her coalition of women co-authors (who differ in race, religion, and class). First, she shares the review. Then, she offers this analysis:

Y'all this is supposed to be an equity and inclusion track—*that's why we put this work in there.* I know I am the one who wanted to present this work here, but honestly, I don't know if we want to expose our participants' stories to this kind of audience. Heck, I don't know if I want to expose *you* to this kind of audience.

The coalition jumps in and affirms the injustice and then comes up with a plan.

Here, the first reveal becomes a reject.

Reject: To agree in coalition that something needs to **change or be done differently** and to make a plan.

In this case, the coalition came up with a two-prong plan:

(1) **Reveal** – Since the coalition isn't clear about how decisions about reviewing are made for this particular track, they decide one step can be another reveal. This time to the track organizer.

Possible Replaces – a) work with the track organizer to coordinate another reject
+ reveal move or b) withdraw the piece in order to protect the project.

We want to offer three analytical notes to clarify how the 4Rs and the margin of maneuverability work as an applied theory of inclusion:

First, these moves are highly contextualized based upon the coalition members' *margin of maneuverability*. The risks in these two moves (the reveal and possible replaces described above) are notable, and the authors' privilege and positionality allow them to strategize this way. Pre-tenure faculty or graduate students would *not be wise* to contact some track coordinators because, depending on the conference, this can get early-career scholars blackballed or labeled as

"difficult," especially white women and scholars of color. Similarly, early-career scholars cannot always risk withdrawing a paper that has been accepted for publication simply because the reviewer doesn't accept their methodological or linguistic choices.

Second, the power of the reject in most cases (as in this one) is that it is a coalitional move—the purpose of a reveal is to seek out others who might be willing to work with you to replace unjust behaviors, procedures, etc. In this case, the lead author was able to **reveal** directly to her coalition of authors, who immediately **recognized** and **rejected** the behavior. It's feasible that the coalition might have disagreed with the lead author, shut down the move from **reveal** to **reject**, and stopped the next steps.

Third, in most cases, **replacing** unjust behaviors, policies or procedures is a process that requires a series of steps, including additional reveals. Coalitions working together to move from reject to replace often establish multiple plans. The importance of coalitions here cannot be overstated. Coalitions can shift and form quickly, as soon as a reveal turns into a reject. Some coalitions are long-lasting; others are momentary. Coalitional thinking, however, orients us to "a possibility for coming together within or to create a juncture that points toward...change" [24]. This orientation towards others who want to make change allows individuals to tack in and out of their own margins of maneuverability, to "borrow" another's margin so as to widen their own ability to act.

Coalitional Reveal: In order to reveal the injustice to organizational leaders, the coalition crafted an email together, kindly explaining their concerns. This took some time: they wanted to be clear about the problems they were experiencing, the risks of having their participants' stories exposed the disparaging reviewer attitudes, and offer some potentials for shared rejection and replacement of the reviewer's behavior. In the end, the email shared a full copy of the reviewer's report, details about how the coalition understood the review as a form of injustice, and a query about whether this kind of behavior was typical (systemic and accepted) or atypical (an individual actor behaving outside of the accepted organizational culture and norms).

Was the reveal successful? Did it turn into a coalitional rejection and replacement? In some ways, yes: the organizational leader responded to say that this was not accepted behavior but that it was in some ways systemic. In fact, they had already inquired about this actor's behavior in other contexts and was in conversations about how to deal with it; additionally, the organization was seeking to revise its reviewing guidelines. But the exclusionary behavior remained systemic: the organization had not developed a clear strategy for **revealing**, **rejecting**, and **replacing** the bad actor's behavior. And in the meantime, multiply marginalized and underrepresented (MMU) scholars with limited power, given their privilege and positionality, potentially continued to be on the receiving end of these exclusionary behaviors.

Activists and change-makers ought to be wary of this kind of response to recognized systemic injustice. Institutions are slow [25]. Bureaucracies are slower. As organizations work for change, the status quo often remains systemically oppressive. As such, the leader of the organization, who was working for change and working to address policies, needs other actors to invest in additional forms of intervention. The organizational leader's margin of maneuverability might be wider in this particular organization, but it is not the same as the lead author. They need one another to keep working within their own spaces to **reject** and **replace** where each can, in whatever way they can.

Replace: *How did you replace the unjust behavior?* In this case, the organization was already working on replacement, but as we note above, not quickly enough to prevent the kind of epistemic violence the authors experienced [22]. The coalition of authors understood from experience that this kind of reviewer might very well show up to the conference session and, without knowing how and if their participants would attend the session in which they reported the storied data, the authors feared their participants might be harmed if the same reviewer (and colleagues with similar positions) decided to share their opinions. So, the authors had a clear option: although they could not replace the reviewer's initial behavior, they could withdraw the paper and prevent the potential harm both to their participants and to themselves: after all, their participants occupied marginalized and multiply marginalized positions in the academy and had experienced their fair share of exclusion and inequity throughout their careers.

In this case, the coalition toyed with an understandable and reasonable option: **harm reduction or prevention as replacement.** Prevention or harm reduction as replacement often occurs when actors have reached the bounds of their margin of maneuverability. In this case, the system was closed in many ways: the scholars didn't know who the reviewer was, and although the organizational leader was working on a replacement plan, the plan wasn't fully formed. So, rather than an explicit replacement, the coalition had a plan to prevent harm to themselves and their participants. In other words, the prevention of **future recognized injustice** was one strategy for disrupting the cycle of injustice.

Given the margin of maneuverability, this plan worked.

And yet. Margin of maneuverability is a dynamic concept: our margins aren't always clear or stable. As they planned to withdraw their paper, the coalition of authors began learning through their research participants that one powerful space for academics to address injustice is in scholarly venues, like conference proceedings and talks. One of their participants, for example, shared that they had used some of their scholarship to redress the inequities they recognized being perpetuated by their Institutional Review Board office; another participant used a scholarly presentation to address the kinds of inequities imparted by their upper administration (see Moore, Walton, and Jones, forthcoming). Of course! This seemed obvious in retrospect, but the lead

author needed exposure to others who had used this strategy before returning to the coalition and explaining a plan to really maximize their margin of maneuverability.

Because all coalition members were tenured, well-published in many venues (with a dozen or so awards under their belts), the lead author proposed to the coalition that they might **replace** their participants' stories with their own experiences, using the review as a case to explain the theory in the way they had intended to do with their narrative inquiry data. The coalition of authors turned their replacement into a large-scale **reveal**, hoping that by publishing their own account, they might (1) demonstrate the potential strength of the question, *What can I do in this situation given my margin of maneuverability?* and (2) invite readers to **recognize** the kinds of harm done in many reviewing contexts, **reject** these behaviors, and **replace** them both individually and systemically with anti-racist, inclusive and kind practices.

Discussion

In this paper, we have literally applied our theory of inclusion, asking readers to **reject** and **replace** traditional approaches to reviewing that can function to exclude marginalized and multiply marginalized scholars, that serve as gatekeeping mechanisms for particular voices *and* particular kinds of research [19], [26], [27]. We originally planned to share findings from a qualitative study in which our participants (many of whom are MMU scholars) shared stories of how they redressed injustices. Similar to the story above, we analyzed the ways these participants proceeded through the 4Rs and sought to understand how their margin of maneuverability affected their decisions. The 24 interviews resulted in over 200 stories of how inequities can be approached by both MMU and more privileged faculty members and graduate students. Although we are sorry our participants' stories are not centered here, this story--our story--explicates several key takeaways from our research and, further, calls the field into action as a site of injustice.

Key Takeaways from Our Story:

- Any actor has a limited *margin of maneuverability*, depending on their positionality, privilege, and power, but working in coalition can expand your *margin of maneuverability*.
- Because positionality, privilege, and power are dynamic and shift over time and across particular spaces, an actor's *margin of maneuverability* is also dynamic and shifts across contexts.
- The 4Rs (recognize, reveal, reject, replace) provides a heuristic approach to addressing inequities and injustice when we encounter them. How an actor moves through the 4Rs depends on their *margin of maneuverability*.

Call to Action

• All academic reviewing processes, from conference reviews to program reviews to Tenure and Promotion reviews, have the potential to enact inequities and injustice and to harm those with less power through epistemic and other forms of violence. As members of this community, we should commit to anti-racist, inclusive approaches to review that inhere an ethic of care and hold one another accountable [19], [28]

Limitations and Further Research

As is obvious by now, this is not the paper we thought we were going to write; much more work can, will, and has been done to illustrate the 4Rs as an empirically understood heuristic [29]. The limits of this single example are many: as a single example case, it doesn't clarify the many ways academic reviewing processes do harm for scholars from different positionalities or illustrate the many strategies authors can use to recognize, reveal, reject, and replace the harm and inequity they encounter. However, these additional strategies are illustrated in our findings and suggest that the 4Rs and the margin of maneuverability comprise an applied theory useful for addressing inequities within and outside of the academy.

- [1] D. E. Chubin, G. S. May, and E. L. Babco, "Diversifying the Engineering Workforce," *J. Eng. Educ.*, vol. 94, no. 1, pp. 73–86, Jan. 2005.
- [2] J. C. Lucena and J. A. Leydens, "From sacred cow to dairy cow: Challenges and opportunities in integrating of social justice in engineering science courses," ASEE Annu. Conf. Expo. Conf. Proc., vol. 122nd ASEE, no. 122nd ASEE Annual Conference and Exposition: Making Value for Society, 2015.
- [3] D. M. Riley and A. L. Pawley, "Complicating difference: Exploring and exploding three myths of gender and race in engineering education," *ASEE Annu. Conf. Expo. Conf. Proc.*, 2011.
- [4] K. Beddoes, G. Panther, and S. Ihsen, "Inclusive learning environments," *European Journal of Engineering Education*, vol. 43, no. 3. Taylor and Francis Ltd., pp. 327–329, 04-May-2018.
- [5] J. A. Leydens, "Sociotechnical communication in engineering: An exploration and unveiling of common myths," *Eng. Stud.*, vol. 4, no. 1, pp. 1–9, 2012.
- [6] E. Blosser, "An examination of Black women's experiences in undergraduate engineering on a primarily white campus: Considering institutional strategies for change," *J. Eng. Educ.*, vol. 109, no. 1, pp. 52–71, Jan. 2020.
- [7] G. S. May and D. E. Chubin, "A retrospective on undergraduate engineering success for underrepresented minority students," *Journal of Engineering Education*, vol. 92, no. 1. Wiley-Blackwell Publishing Ltd, pp. 27–39, 2003.
- [8] *Diversity in Engineering*. National Academies Press, 2002.
- [9] K. Watson and J. Froyd, "Diversifying the U.S. Engineering Workforce: A New Model," *J. Eng. Educ.*, vol. 96, no. 1, pp. 19–32, Jan. 2007.
- [10] G. E. Slaughter, "The Richmond Area Program for Minorities in Engineering: Summer Engineering Institute," *Proc. Front. Educ. Conf. FIE*, pp. 1–7, 2008.
- [11] T. L. Killpack and L. C. Melón, "Toward inclusive STEM classrooms: What personal role do faculty play?," *CBE Life Sci. Educ.*, vol. 15, no. 3, pp. 1–9, 2016.
- [12] W. Lee, H. Matusovich, and P. Brown, "Measuring Underrepresented Student Perceptions

of Inclusion within Engineering Departments and Universities | Request PDF," Int. J. Eng. Educ., vol. 30, no. 1, 2014.

- [13] C. Puritty *et al.*, "Without inclusion, diversity initiatives may not be enough," *Science*, vol. 357, no. 6356. American Association for the Advancement of Science, pp. 1101–1102, 15-Sep-2017.
- [14] K. M. DeGoede, B. Read-Daily, and J. C. B. Abreu, "GIFTS: Strengthening Inclusive Group Dynamics," Jul. 2019.
- [15] S. Lezotte, H. Hartman, S. Farrell, and T. R. Forin, "Disability and Engineering : A Case of "Othering "? Disability and Engineering : A Case of 'Othering "?," ASEE Annu. Conf. Expo., 2014.
- [16] R. M. Johnson, M. K. Bothwell, D. Montfort, and K. Furman, "Measuring the conceptualization of oppression and privilege," in *CoNECD 2019 - Collaborative Network for Engineering and Computing Diversity*, 2019.
- [17] R. Walton, K. R. Moore, and N. N. Jones, *Technical Communication After the Social Justice Turn: Building Coalit.* Routledge, 2019.
- [18] N. N. Jones, K. R. Moore, and R. Walton, "Disrupting the Past to Disrupt the Future: An Antenarrative of Technical Communication," *Tech. Commun. Q.*, vol. 2252, no. 4, pp. 211–229, 2016.
- [19] "Anti-racist scholarly reviewing practices: A heuristic for editors, reviewers, and authors." 2021.
- [20] "Five Faces of Oppression* IRIS MARION YOUNG," 2014.
- [21] L. Tuhiwai Smith, *Decolonizing Methodology: Research and Indigenous Peoples*, 2nd ed. New York: Zen Books, 2012.
- [22] K. Dotson, "Tracking Epistemic Violence, Tracking Practices of Silencing," *Hypatia*, vol. 26, no. 2, pp. 236–257, Mar. 2011.
- [23] I. Young, Justice and the Politics of Justice. Princeton University Press, 2014.
- [24] K. Chavez, *Queer Migration Politics: Activist Rhetoric and Coalitional Possibilities*. UI Press, 2011.
- [25] J. E. Porter *et al.*, "A Rhetorical Institutional Critique : for Change Methodology," *Coll. Compos. Commun.*, 2000.
- [26] N. N. Jones, "Shifting Paradigms for Citation Practices." 2021.
- [27] C. Medina and P. Luna, "Publishing Is Mystical': The Latinx Caucus Bibliography, Top-Tier Journals, and Minority Scholarship," *Rhetor. Rev.*, vol. 39, no. 3, pp. 303–316, Jul. 2020.
- [28] P. H. Collins, *Black Feminist Thought: Knowledge, Consciousness, and the Politics of Empowerment.*, 2nd ed. Routledge, 2008.
- [29] K. Moore, R. Walton, and N. N. Jones, "Contextualizing the 4Rs Heuristic with Participant Stories.".