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Book Review

Review of "Misconceiving Merit: Paradoxes of Excellence and Devotion in Academic Science and Engineering"

By Mary Blair-Loy and Erin A. Cech
The University of Chicago Press, 2022, 232 pages. https://press.uchicago.edu/ucp/books/book/chicago/M/bo161019313.html

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The belief that science is meritocratic is baked into the culture of academic science, technology, engineering, and mathematics (STEM). Scientists often react in knee-jerk fashion to even the suggestion that biases *could* exist in how STEM opportunity-, recognition-, and reward-structures operate. Yet, research has shown time and again that not all scientists' productivity is equally valued or rewarded.

Mary Blair-Loy and Erin A. Cech's *Misconceiving Merit* interrogates that which few academic scientists themselves dare to—i.e., how the failure among scientists to question the foundational beliefs and values that comprise the *culture of science* contributes to inequities in how scientists' accomplishments are rewarded. Focusing on a single, highly ranked, US research university, the book first presents a theoretical framework for dissecting academic STEM culture, and then an analysis of why scientists resist questioning their own beliefs about the presumably meritocratic processes that overvalue and reward some while undervaluing others.

Misconceiving Merit's overarching arguments are necessarily bold. Blair-Loy and Cech assert up front that much of the previous research on inequities in academic STEM focuses too narrowly on the consequences of individual-level biases and interpersonal discriminatory practices, and not enough on the calcified meaning systems that cultivate misperceptions of scientific excellence and productivity in the first place. Rectifying systemic inequities requires systems-level analyses, which are exactly what this book presents.

The professional culture of science, the authors explain, is comprised of hegemonic beliefs about what constitutes good science and the kinds of people who do good science. Once socialized into the culture of science, scientists-in-training are expected to align themselves with it. In so doing, they gain the respect of fellow scientists. Those who reject science's hegemonic beliefs risk being cast as incompetent failures. The culture of science, as detailed in Chapters 2 and 3, is comprised of two primary schemas: the *work devotion schema* and the *schema of scientific excellence*. These schemas serve as cognitive, moral, and emotional roadmaps for processing information, forging identities, and expressing feelings. They undergird scientists' confidence in themselves as knowledge creators and in science as objective and socially valued. The *work devotion schema* involves accepting/identifying with and investing in long work hours and departmental and disciplinary values. The *schema of scientific excellence* involves embracing, identifying with, and investing in creativity, assertive leadership, relational skills, and diversity promotion—though not all of these are valued equally.

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While the richness of the book's claims about scientists' misperceptions of scientific excellence and productivity come from the authors' 85 in-depth interviews with STEM professors, it is their incorporation of extensive quantitative data that demonstrates the extent to which the productivity of racially minoritized faculty, women (especially Latinx and Black women), and LGBTQ faculty is systematically undervalued and the productivity of heterosexual white and Asian men overvalued. Quantitative analyses are based on 266 STEM faculty survey respondents (from the case study university), and university personnel data for 506 STEM faculty. Blair-Loy and Cech also use the Scholarly Production Indices database, which provides standardized measures of researcher productivity/visibility, to bolster their argument that unequal reward systems persist despite actual levels of faculty productivity across intersecting faculty demographics. Finally, they use supplemental data from a STEM Inclusion Study (led by Cech) to support their argument that dimensions of the scientific excellence schema they identified in the case study university data likely reflect patterns evident across academic STEM nationally.

Because science is presumed to be unbiased so too are the meanings embedded in the schemas that comprise the culture of science. Yet, as Blair-Loy and Cech explain in Chapter 4, dominant expectations associated with the schemas of work devotion and scientific excellence align with presumptions of whiteness, masculinity, heterosexuality, and an ideal worker norm that emphasizes freedom from the responsibilities of family care work. Scientists whose identities and backgrounds already align with these schemas are presumed to be more research productive, whereas scientists whose identities and backgrounds align less with dominant schemas are presumed less productive. Inaccurate perceptions, in turn, influence the actual rewards and recognition that scientists as faculty members receive for their work net of the actual productivity levels of the scientists.

How might we address the problematic aspects of science culture? Though *Misconceiving Merit* provides no secret recipes for overhauling the culture of science, researchers and university administrators alike would do well to heed the authors' warning that it's not enough to engage faculty in workshops about how to recognize and interrupt implicit biases and microaggressions. While such trainings may help temporarily moderate the instances and effects of biases and discriminatory practices, they fail to fully dismantle the overarching belief structures that sustain systemic inequities.

Blair-Loy and Cech offer four suggestions as starting places for addressing problematic issues associated with the culture of academic science. First, they recommend greater interrogation of what "excellence" in academic science means. Second, they call upon scientists who recognize the shortcoming of meritocratic ideals to advocate for a broader, more inclusive understanding of excellence in science. Third, they endorse universities' efforts to provide family caregiving policies and to destigmatize those who would use them. Fourth, they argue that if scientists who are presumed already to embody the ideals of work devotion and scientific excellence were to take a more active lead in peer mentoring about how biases actually operate, such efforts would help to normalize and legitimate questions about what constitutes excellence and how to appropriately and fairly reward it.

After reading *Misconceiving Merit*, two primary questions remain. First, what incentives do those who benefit most from science's hegemonic cultural schemas and prevailing reward systems have for interrogating, much less rectifying, misconceptions of merit? The schema of scientific excellence, as Blair-Loy and Cech so convincingly demonstrate, is a rather "warped yardstick" that overvalues the contributions of majority group faculty while devaluing the contributions of women, Latinx, Black, and LGBTQ scientists. But are enough STEM faculty (and their non-STEM colleagues) ready and willing to dispose of that yardstick? As other studies have shown, those who align with masculinist, hetero-, racialized ideals of science commonly view their family roles and professional lives as positively and mutually reinforcing and thus remain unmotivated to reject the work devotion schema and the ideal worker norms that uphold their relative advantages (e.g. Berdahl et al. 2018; Bird and Rhoton 2021; Rhoton 2011; Thébaud and Pedulla 2016).

Second, what concrete strategies might leaders in academia and in other STEM workplaces use to correct the widespread misperceptions of merit embedded in the culture of science? One promising direction in higher education research can be found in O'Meara et al.'s (2019) work focusing on faculty workload equity. O'Meara et al. concede upfront that faculty are notoriously poor judges of their own and their colleagues' relative productivity, and that academic leaders are generally ill-equipped to hold faculty members accountable to equitable workloads (see also Misra et al. 2021). After years of developing and implementing practical tools for making faculty workloads more transparent and accountable, O'Meara et al. assess the effectiveness of these tools for equitably crediting faculty productivity and excellence. They provide empirical evidence that greater transparency helps increase faculty perceptions of fairness and equity. Though O'Meara et al. focus mainly on the service and teaching aspects of faculty workloads, the logic of their approach suggests that by making faculty research productivity (and the conditions that constrain the amount of time individual faculty have for doing research) more transparent to all, universities can begin to address the widespread misconceptions of merit and inequities in faculty reward structures.

Misconceiving Merit is a must-read for researchers, students, and academic administrators interested in transforming STEM professions and institutions of higher education in ways that equitably attract, reward, and retain scientists in academia. Scholars of occupations, organizations, and paid labor have theorized for years that institutionalized organizational cultures and structures are gendered and racialized in ways that sustain workplace inequities (e.g. Acker 2006; Ray 2019; Wingfield 2012). None, however, provide the comprehensive and thought-provoking analysis that Blair-Loy and Cech do of the *culture* of academic STEM. *Misconceiving Merit* should serve as a wake-up call to researchers and academic administrators alike. We must tackle head on the overarching cultures and structures of inequity that produce systemically biased and unequal reward systems.

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