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The Exigence of Ethical AI: Understanding Algorithmic Bias and Moving Towards Anti-Racism. Book Review of *More Than a Glitch: Confronting Race, Gender, and Ability*: Meredith Broussard, MIT Press, 2024.

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Abstract: Meredith Broussard's "More Than a Glitch" explores the biases in AI, focusing on race, gender, and ability. The book highlights how technology often fails marginalized groups, with examples from facial recognition, predictive policing, and medical diagnostics. Broussard introduces "technochauvinism," the belief that computational solutions are superior, and critiques this mindset. She emphasizes the need for AI systems to be designed with fairness and accountability, advocating for public interest technology. The book calls for a change in mindset to build nonsexist, antiracist technology, stressing the importance of addressing biases to prevent harm and ensure equity.

Reviewer Bio: Anatasia Pestova is a PhD student researching how generative AI influences instruction of rhetoric in interdisciplinary fields, including practical exercises in rhetorical analysis, rhetorical elements in technical production, and teaching methodologies of delivering and transcribing technical thought. This includes identifying how AI affects instrumental discourse, communication and inquiry, and the interaction of experience and expression.

More Than a Glitch: Confronting Race, Gender, and Ability. **Meredith Broussard, MIT Press, 2024. https://mitpress.mit.edu/9780262548328/more-than-a-glitch/**

If you were to split a chocolate chip cookie with a friend, would the remaining pieces result in a fair 50/50 split? Meredith Broussard's work opens with an introduction to the world of technology and equity through multiple perspectives. This book addresses AI harms and precarities by showing inequity through various lived experiences and grounding solutions that could improve technology. To answer the above cookie query, she suggests that an arithmetically fair split of the cookie would constitute one half to each individual. In reality, this is often impossible, demonstrating that computers can then only calculate one type of fairness and probability and that mathematical and social truths are fundamentally different systems.

Dr. Broussard is a data journalist who teaches at the Arthur L. Carter Journalism Institute at New York University and leads research at the NYU Alliance for Public Interest Technology. Her research has centered on the intersection of technology and social practice, with expertise in the areas of investigative reporting and ethical AI. This book builds upon her previous work, *Artificial Unintelligence: How Computers Misunderstand the World* (2018), which introduced the topic of accountability in algorithms by exploring poorly designed systems as they seem to take over human activities like hiring, driving, and dating. *More Than a Glitch: Confronting Race, Gender, and Ability Bias in Tech* further explores these themes by presenting specific examples of failures in facial recognition technology, predictive policing, and medical diagnostic systems as part of larger conversations and beliefs around computing machines. A central theme of this book therefore is that technology is not inherently fair; some people benefit from innovation, while others suffer from its unchecked progression and deployment.

The chapters coalesce around Broussard's definition of *technochauvinism,* a kind of impartiality that considers computational solutions to be superior to all others. The author coins this term to demonstrate how embedded bias is predicated on assumptions that computers are better than humans or that they make neutral decisions because their decisions are based on mathematics. This perspective is part of the larger conversation in technical and professional communication (TPC) and decolonial scholarship (Agboka, 2013, 2014; Itchuaqiyaq, 2020, 2021; Haas, 2007, 2012; Tuck, 2011; Tuck & Yang, 2012) that aims to address the intersections of race, rhetoric and technology by tackling the Digital Divide (Banks, 2005) from various vantage points. The digital divide is the technology gap that occurs when minoritized and disadvantaged people do not have the same access to training, information, and machines as the rest of society.

Through this lens, Broussard examines how fairness and bias manifest inside structural technological and social systems by exploring the many ways that ideas about race, gender, and ability are historically imbedded and reproduced in today's systems. Broussard adds to existing dialogues by situating her research within her deep experience in data journalism, offering accessible examples of how software is developed and presenting case studies for its functionalities and malfunctions.

The first chapter begins by introducing the reader to what algorithms can and cannot do by briefly acquainting us with their specific malfunctions. Broussard weaves in instances of computers that failed to monitor or detect hate speech, failed to replace social works in public

assistance programs, and software that was created to 'predict crime', select job applicants, identify faces, and grade papers and its failures. Broussard starts with these poignant examples in order to reify the themes of the rest of the work: that we should not cede control of essential civic functions to tech systems, or claim that they are better, or more innovative, until and unless those technical systems work for every person regardless of skin color, class, age gender, ability.

The second chapter starts by defining "what's real" and "what's imaginary" about algorithmic systems by classifying AI as a sub-branch of computer science in the same way algebra is part of mathematics. Broussard then goes on to explain the mechanics of the field and how it functions as a branch of computational statistics distinguishing between different types of "learning" to explain mathematical points and to help readers understand how computers became tasked with determining eligibility for a loan or mortgage.

Chapter three presents lived experiences of people whose lives were tremendously impacted by algorithms by explicitly showing how algorithms tend to work against minoritized populations. For example, Broussard provides examples of cascading disasters in multiple recent cases illustrating the problems of facial recognition systems. In one instance of demonstrating how algorithmic technology is used in marginalized communities for policing, she recounts the wrongful arrest of Robert Julian-Borchak Williams, a case where Facial Recognition Technology (FRT) wrongly identified him as a suspect in a robbery that happened in 2019. In this and other cases her analysis shows how data is not objective and that true antiracism needs to go beyond merely implementing the most seemingly statistically fair solution.

The next chapter more closely examines the allure of "precognition" and statistical fairness by cataloging the history of predictive policing by demonstrating the inefficacy of person-based and place-based forms of technology. Broussard recounts the historical conception of policing as originating from a "broken windows" policy where quantification of crime statistics was prioritized over accountability. This example reflects the broader issue of technochauvinism, as flawed software continues to be adopted and financed in police departments despite repeated failures.

Chapter five focuses on algorithms "predicting" students' grades and how this adoption of grading furthers existing divides in schools already affected by economic inequality and racial disparity. Examples of specific students that were harmed by this technology are brought to light, revealing broader patterns of unfairness in remote surveillance software and the potential harm of spreading of biased edtech in education systems. In one example, she recounts the case of Isabel Castañeda, an International Baccalaureate (IB) student, who typically earned excellent marks, received an automated failing score from an algorithm when tests were cancelled and grades were predicted by an algorithm. The algorithm was largely based on a flawed statistical formula that had access to students' geographic locations and economic backgrounds.

Chapter six speaks to the pitfalls of technology as it fails to address disability, bringing to the foreground a particular case of an employee who worked at an Apple store. She highlights the case of Richard Dahan, a longtime Apple store employee who was an expert in team development and troubleshooting, and who was Deaf. However, despite being a committed staff member, Dahan faced difficult situations on many levels which led asking him to ask for

specialized ASL interpreter. The Apple manager did not provide accommodations for him during meetings or try to make the space easier to access. The precarity of accommodations was coupled with the narrative that Apple's applications and products could 'cure; Dahan's disability, as he recounts. Like similar examples in the book, Broussard shows this case as a failure or technology that aims "empower" individuals with disability, but ignores the case-by-case and actual needs of the user of the technology. This is part of the criticism of a one-size-fits-all approach and the nuanced discussion of the value of including diverse lived experiences. Broussard applies this to the broader discourse about the outer limits of assistive technology and the way technology and ableism are intersectional.

In chapter seven, Broussard addresses technology's broad historical inadequacies in supporting equal gender rights from the standpoint of databases. Opening with the case of Jonathan Ferguson, a tech writer who made headlines for announcing his gender transition in 1958, she presents the bureaucratic issue of changing gender markers, which remain relevant today despite advancements in technology. She then outlines how early computer systems encoded gender as a binary value, a rigidity that persists in legacy systems today. In another example, she shows how updating public assistance systems or university databases requires significant effort due to strict data types and interconnected systems. In this way, Broussard skillfully demonstrates how virtually all popular platforms grapple with issues of gender in coding by showing us how Binary code and Boolean variables in computing enforce cis-normativity, where it became the prototype around which database optimization efforts were/are organized.

With this, Broussard segues into the medical field in chapter eight by demonstrating how medical forms and their descendants, electronic medical record systems, are rarely set up to deal with the nuances of racial identity or gender. In this case, Broussard speaks candidly about her own experience in the obstetrician's office by demonstrating how, in addition to devaluing Black, Indigenous, and People of Color (BIPOC) lives, medical systems and treatment protocols often rely on problematic and oversimplified racial categorizations. This leads to disparities in care and inaccuracies in diagnostics. In one instance, she recounts how people of color face higher risks during childbirth due to biases in pain assessment and care. Historical race "correction" in medical technology involved and involves adjusting medical thresholds based on race, often linked to pseudoscientific and racist ideas. These adjustments often disadvantage minoritized populations and have direct economic effects that end up upholding white supremacy. Consequently, the integration of AI into medicine perpetuates existing biases that perpetuate structural harm.

Broussard expands on this topic in the chapter nine by retelling the story of her own breast cancer diagnosis and treatment as part of a larger dialogue on the implementation and efficacy of medical diagnostics systems. She walks us through a replication study the results of which demonstrate how algorithmic models are not always able to update their frames of reference as quickly or as flexibly as human experts. This allows readers to further interrogate the value of medical AI diagnosis outside of highly constrained circumstances.

Chapter ten introduces optimism by way of power solutions journalism and its ability to tell stories about technology failures and the proposed remedies for those shortcomings. Broussard

advocates for public interest technology, which aims to create technologies that prioritize societal good while supporting projects that hold algorithms and their creators accountable.

So, which groups get prioritized in the definition of "liberation by technology?" As Broussard shows us, the answer to this question is forever in flux as bias is multidimensional and tends to show up in glitches or after a technology has been released. The examples in Broussard's work should cause alarm, because unless we build AI systems with nimble inputs that are deliberate about eradicating racism, ableism, and sexism at every step, there is a high potential of harm.

Readers may be wondering how to intervene in unjust technologies and algorithms. One helpful framework Broussard offers is cognitive justice, which directly challenges biased intellectual history and the dominant social attitudes in the field of computer science by putting into question the pervasive adoption of "whiteness" as a sort of "unremarked optimum" (p. 109). Another possibility lies in algorithmic medicine and the narratives that center technological application — highlighting the need for multidimensional solutions, such as addressing cognitive fallacies, to ensure effective implementation. Through this, we can actively counter physical, computational, and interpretation bias (pp. 131–32). As technical communicators, we can use these frameworks to advance decolonizing our field and technologies by redistributing agency, justice and ownership, while dismantling settler colonialism technical trends.

Broussard's application toward technology can be also used as part of practical pedagogical implication in the technical communication classroom; for instance, educators can apply her framework to assist with a decolonial rewriting of TC syllabi pertaining to algorithmic software by showing students how to "recognize, reveal, reject and replace unjust and oppressive practices" (Walton et al., 2019). Broussard's call for empowerment in computational literacy can contribute to this by directly challenging racist, ableist and biased mainstream technological claims (2024, pp. 172–73). We can then suggest that teaching students about the full gamut of AI limitations will contiguously center indigenous epistemologies and critical imperative practices (Smith, 1999).

Broussard's approach aligns with the 4Rs framework 4Rs (Walton, Moore and Jones, 2019) offering heuristics that help readers recognize and reveal systemic injustices masked by technocentric discourse. Her work also provides the tools to critically reject and question harmful algorithmic practices (Broussard, 2024, pp. 133–34). Additionally, as Broussard provides reporting methods and groups that serve as sites of intersectional coalition-building, her approach could also help amplify and include voices of historically marginalized communities. This could serve as a bridge between the conversations of the design and development of algorithmic technology and representation, equity, and inclusion of its users.

Another practical pedagogical possibility may focus on equipping students to intervene in technology's implications and deployment. This can mean creating exercises where students analyze the language in proposed local AI legislation and having students reflect on whether risks are adequately addressed (Broussard, 2024, p. 174). Another method could involve introducing students to various groups that are working for social justice in technology, like STOP LAPD Spying, Data for Black Lives, Data & Society, and AI for People (Broussard, 2024,

pp. 176–179). Organizations like these inform communities about racial justice implications and help us examine patterns that challenge social fairness.

The potential limitations for Broussard's approach lie in the accessibility of institutional resources available at the local level to promote awareness of AI biases and harms. This precarity is often coupled with impossibility of opting out of many software applications. One recent example is the move for higher institutions to adopt proprietary generative AI systems that will take on some of the tutoring and writing center work, replacing the face-to-face interactions. Instructors of TPC may struggle to counter the push and application of new technology which occurs at the macro, micro, and meso levels (Spinuzzi, 2013). This book's gaps may also lie in theoretical approaches that are based in examples grounded in the U.S. and function within our political paradigms. Because technical communication has traditionally seeded a complicated relationship with traditional Western modes of thinking, knowing and production, this work could be expanded by focusing on interviews or case studies from elsewhere. One example is Owusu-Ansah's (2023) exploration of AI technologies which ascribe neocolonial definitions of writing and assign values and meanings that can perpetuate imperialist framing. Another example is Agboka's (2014) case study of designer localization documentation failures that showcase how technical communication methods have historically represented the world in a way that commoditizes unenfranchised groups, nations and peoples.

However, what is common across different disciplines in TC is the dialogue between the content and the audience which assists or motivates the reader to take action. In this case, if we stay vigilant to AI biases, everybody wins—interrogating and redressing AI harms while promoting equitable design practices can help technical communicators practice access while dismantling settler paradigms, both theoretical and tangible.

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