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WGS367: The Politics of Gender and Health

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Critical Reflection One: Science, Gender, Language, Mathematics

Recently I have begun thinking about how I know what I know, and the kinds of assumptions I have while engaging with anyone on a discussion of any topic. As I further my studies into mathematics and women and gender studies, I begin to see how the framework we set ourselves in and begin with will only produce ideas built off of the framework, and how the language we choose to use will either enforce current biases or challenge them and suggest new lines of thinking. The scariest is that this subtle linguistic bias, like "sleeping metaphors" (Martin 501), appear even in seemingly value-neutral fields such as science and medicine.

Despite the mainstream belief that through the scientific method we can make value-neutral observations and conclusions about the world, much evidence in areas such as biology, medicine, and evolutionary psychology suggest otherwise. Emily Martin demonstrates how traditional cultural gender stereotypes sneak into the ways that science is presented by personifying the egg cell as a damsel-in-distress, a servant and mother, and a dangerous spider waiting in her web to capture and tether her prey (Martin 498), but the sperm cell as a proactive and brave hero. I had never questioned the validity of describing the egg call as passively waiting for the sperm cell, because I had believed that it was the absolute, scientific truth. In reality, however, Martin explains that many studies have observed that the egg and sperm play equally active roles in fertilization. Despite these new discoveries, biologists and biology textbooks circulated today still cling to the older descriptions which enlarge sex and gender differences

with an unwillingness to rephrase and rethink the fertilization process. This is just one way that science implicitly and subtly implants ideas about sex- and gender-based behaviours through a seemingly objective lens. In reality, cultural stereotypes shape science, which is then used to support the cultural stereotypes. As science is crowned as value-neutral, we often commit the "naturalistic fallacy": since in nature, females are nurturing and males are aggressive, humans must also be naturally the same way (Fehr 60)! This logic of Parental Investment Theory is flawed; I believe that when scientists begin with the mindset that women are passive and submissive and that men are active and dominant, or the mindset that a female's sexuality should be coy and reserved whereas a male's competitive and insistent, they will read and describe their observations according to these pre-established values and frameworks. This way, science sustains and reproduces all the preexisting structures: patriarchy, neoliberalism, heterosexism, and cisnormativity. I also wonder if the fact that science relies so heavily on observed and recorded evidence is a deterrent in how science progresses: we have not yet seen much evidence of marginalized members of the community succeeding, or much significant work done by marginalized people, and hence we are less open to listen to them and value their inputs. We are unwilling to let go of our assumptions and give new ideas from new voices our attention.

As a significant part of scientific advancement is to communicate and distribute one's work, we can observe that a scientist's own values and preconceptions seep through their writing and the way they phrase their findings and conclusion. To communicate, we use language. I am beginning to doubt just how much I trust the words describing science, and mathematics as an extension of that. Admittedly, math is often described as if it exists in a vacuum and free from real-life tangibility - what even is a "vector space", and who will hand me a copy of RP7 tomorrow and ask me questions about it? - yet those who have developed these theories have

personalities, cultural backgrounds, and very specific beliefs and experiences. This not only affects the way they do mathematics, but also affects the way they write about mathematics and the way they expect others to build on their work. Though I do not have much research experience yet, I am intrigued by how it is "traditionally" done and want to explore just how different personalities, assumptions, and backgrounds come together into the supposedly abstract space.

With the right language and right awareness, such as one that uses a feminist framework, I believe we can make our best attempts at minimizing the amount of harm done by our own biases and cultural influences, and have "words for every body" as proposed by Briggs and George in their article outlining why inclusive language for describing gendered body parts is an important practice. Mathematicians know the importance of establishing mutually agreed-upon language and notations. One symbol may mean different things, while different symbols can be used to refer to the same concept, depending on context. It could get confusing, but we should always take the time to establish the notation and a convention before reading a piece of mathematical writing or engaging in discussion and exchange (if we do not, I would argue that it is poor writing - hard to read, confusing, inaccessible, presumptuous, almost self-absorbed…) Inclusive language should receive even more attention and respect - after all, the derivative of a function is never truly "mine", but my vagina is mine, and I should be able to refer to it however I want while retaining the respect and care I deserve from medical professionals, and everyone else.

As Malika Sharma points out, "no research is truly theory free, for all research is situated within a so-called grand theory or way of viewing the world" (571). Through empathetically and patiently working through our differences and diversity, paying attention to "wake up sleeping

metaphors" (Martin 501), we can not only change the way science is done, but also change society as a whole. I also wonder, as a mathematician and feminist, how my language and the ways in which I carry myself affects those around me, and those who learn knowledge and experiences from me - will they take with them a part of me too?

Works Cited

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