

Understanding & Dismantling Privilege

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Engineering as a Space of White Privilege

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Abstract

Engineering has had a continual concern with diversity due to the low numbers of minority and female majors. Although race is recognized as socially constructed, the rhetoric around race in engineering for the most part takes it as an immutable characteristic of certain individuals (Black, Hispanic, Native American, etc.). Further, the approach to improving diversity takes on a colonial perspective, with programs to help these students better “assimilate” into college life and to “fix” their perceived deficiencies in basic math and science. Some authors have examined the experiences of various minorities within engineering. However, there is almost no work that examines the privileges that inherently accrue to the majority White male in engineering. I take a Critical White perspective and build on Peggy McIntosh’s concept of the “invisible knapsack” to describe how I, as a white, heterosexual, male, was inherently advantaged throughout my career as an engineer.

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I joined the University of Florida in 1996, and that fall the College of Engineering held a banquet to welcome its new faculty. There were a few new faculty of Color and quite a large number of Asians. I was finally introduced, along with the other new faculty in my department, and as I returned to my seat an older faculty member said to me, "It's nice to see one of us up there." I was so shocked that I couldn't respond. I wonder what he would have thought if I had responded "Don't get too excited. I'm Jewish."¹¹

While we might not expect to see such overt displays of racism, engineering has long struggled with diversity. Despite efforts that include science, technology, engineering, and math (STEM) outreach to elementary, middle, and high schools, efforts to recruit women and minorities, and readiness programs, female and minority participation in engineering remains stagnant. For example, from 2000 to 2011 the percentage of engineering bachelor's degrees awarded to women remained constant at approximately 20%, while the percentage awarded to Blacks remained constant at approximately 4% (National Science Foundation, 2014). In light of these statistics, there continue to be calls for improving diversity in engineering (National Academy of Engineering, 2011) and grant programs specifically to fund approaches to increasing the number of women and minorities who receive engineering degrees (e.g., National Science Foundation ADVANCE and Broadening Participation in Engineering programs).

However, engineering's focus on remediation and "numbers" to improve diversity severely limits the ways in which engineering can become a more inclusive

field. For example, the National Academy Report on increasing the number of minorities in STEM fields focuses its recommendations on programs such as bridge programs to remediate math skills, professional training for faculty at Historically Black Colleges and Universities (HBCUs), development programs such as Upward Bound, and outreach programs to attract minorities to STEM fields (National Academy of Engineering, 2011). What these recommendations ignore, however, are the normative standards for engineering that serve to exclude those who are not seen as future engineers. Slaton (2010) has examined the history of race in engineering education through six historical case studies of institutions. She shows how, in the desire to maintain institutional prestige, universities have increased their performance and admissions standards. These standards, while purported to be race-neutral, actually serve to perpetuate opportunities that are available to some students but not others. In particular, the "rigorous" standards of engineering admissions serve to exclude those who do not come from privileged backgrounds, whether that is students of Color, students of low economic status, or students from other marginalized groups.

Similarly, the desire to increase the number of women and minorities in engineering limits what diversity can mean for engineering programs. Tienda (2013), for example, discusses the ways in which a "diverse" institution does not necessarily promote inclusivity. She defines inclusion as "organizational strategies and practices that promote meaningful social and academic interactions among persons and groups who differ in their experiences, their views, and their traits" (p. 467). Unless there is a

specific focus on bringing different groups together, people's tendency to create homogenous groups will prevail. In her view, even cultural events focused on specific cultural or ethnic groups can be problematic in this sense. Similarly, Riley, Slaton, and Pawley (2014) point out that "counting white and nonwhite, male and female persons present in engineering ... has been a self-limiting reformist exercise. Reflexivity is too easily foreclosed in such quantitative excursions" (p. 336, emphasis in original).

Peggy McIntosh was one of the first to discuss the role of White privilege. In her seminal 1989 paper (McIntosh, 1989) she defined white privilege "as an invisible package of unearned assets which I can count on cashing in each day, but about which I was 'meant' to remain oblivious" (para. 3). Importantly, this means that racism does not exist solely (or even most importantly) in "individual acts of meanness." Rather, racism is perpetuated by the everyday acts of White people, going about their business without interrogating how being White gives them inherent advantages. In this paper she coined the term "invisible knapsack" to describe the list of unearned advantages enjoyed by Whites, a term I borrow to describe the unearned advantages of Whites in engineering.

White privilege exists in part because of five myths that permeate Whites' views of themselves (McIntosh, 2009a): the myths of meritocracy, manifest destiny, White racelessness, monoculture, and White moral elevation. These myths permeate society and lead to a resistance to even acknowledge that racism exists or should be talked about. They are evident in the concepts of a "color-blind" society, the American Dream, etc. (McIntosh, 2009b). And these beliefs define how diversity is

generally considered in engineering education (Schoepke, 2008). In particular, "success"² is a result of individual effort and ability. To fail means one has not worked hard enough or isn't smart enough to handle the rigorous curriculum. Thus, much of the diversity work in engineering is based on the deficit model, in which lack of success is attributed to individual deficits, ignoring larger organizational and structural issues. However, this ignores the lived realities of many students. Many minority students are first-time college attendees, without the social or cultural capital that the privileged have. Without this capital they come to the university ill prepared to meet the normative expectations of engineering. These norms include entering with appropriate math and science preparation; the time needed to study and do homework; even an understanding of what engineering is and what being an engineer entails. These normative expectations contrast sharply with the realities of these students' lives. Our associate dean maintains a pantry of food that any student is welcome to access at any time. When our students do not have enough to eat, when they have to choose between a job and studying, how can we expect them to succeed? And while many see these issues as isolated to particular individuals, I emphasize again how they in fact reflect the lack of power and privilege these students have.

It is also important to understand what White privilege is not. In a recent op-ed on the *Time Magazine* website (Fortang, 2014), a Princeton student argues against the popular phrase "check your privilege." His argument is that success comes from hard work, and that even though he is White, he and his family had to overcome significant obstacles to succeed. As he puts it: "Assuming they've benefitted from 'power systems' or other conspiratorial imaginary

institutions denies them credit for all they've done, things of which you may not even conceive. You don't know whose father died defending your freedom" (para. 8). And I am sure he is right, that his success comes from hard work and overcoming of significant obstacles. But that is not what White privilege is about. White privilege means that he and his family had the *opportunity* to overcome those obstacles. Those without power and privilege cannot get over those obstacles as easily, or in some cases not at all.

White privilege has been examined in several professional fields, including bioethics (Anijar, 2003; Arekapudi & Wynia, 2003; Baker, 2003; Chambers, 2003; Karsjens & Johnson, 2003; Kasman, 2003; Miles, 2003; Myser, 2003; Seiler, 2003; Trachtman, 2003; Waldman, 2003), anthropology (Sahin-Hodoglugil, 2003), music education (Koza, 2009), and the airline industry (Mills, 1995). Less has been done to explicitly examine whiteness in engineering. The only report that I could find was a PhD dissertation (Schoepke, 2008). In this study Schoepke interviewed eight White male engineering faculty to understand their views on the reasons for overrepresentation of Whites and underrepresentation of minorities at their large public research university. She found that these faculty do not see themselves as having a racial identity, thus normalizing the White male experience. Further, engineering is viewed as a color-blind meritocracy and that discrimination and racism do not represent institutional problems but are the acts of individuals. All of these views echo McIntosh's (2009a) myths. Schoepke argues that through these views the faculty are able to deflect any responsibility for a poor climate away from themselves.

This is not to say that there are not others working to dispel the normativity of the White, male, heterosexual, middle-class engineer. Riley, et al. (2014) discuss how critical approaches could be used to examine power issues and create social justice within engineering education. They begin by pointing out that conventional ways of counting diversity, through numbers of underrepresented groups, does not result in inclusion. This echoes Tienda (2013), who discusses how the mere presence of diversity does not necessarily result in inclusion and a multiplicity of understanding. Riley, et al. (2014) go on to show how a critical epistemology has the potential to create true reform in classroom practices, institutional practices, and research methods and assessment. Some of these areas are "invisible." For example, they discuss how the content of engineering education reflects privilege, such as the relationship between a designer who *creates* solutions for the *benefit* of a user. I have chosen the words in italics to deliberately highlight the differential power relationship. Possible solutions are defined by the designer, with the client relegated to accepting the designer's approach. Nieuwma (2004) cites several examples from the literature, including how the design of microwave ovens is influenced by the assumed skills of the users and the ways in which a focus on consumers results in "creating products aimed at satisfying a narrow group of people" (p 21). Thus, design solutions are invariably based on the positivist-empiricist epistemology of White European culture, ignoring alternative considerations (Kasman, 2003). In contrast, Nieuwma (2004) describes a concept he calls "appropriate design" which is intended to consider social power in design and address the needs of marginalized groups.

Others have examined the experiences of minorities and women in engineering, looking at issues such as the lack of role models for students (Fleming, Ledbetter, Williams, & McCain, 2008) and outsider status (Foor, Walden, & Trytten, 2007). The undercurrent to all of these studies is the presence of White, male privilege, unacknowledged and yet an integral part of what these students experience. In this paper I seek to undermine the normative practices of engineering by exposing the ways in which I, as a White, heterosexual male, have been advantaged in engineering.

In the remainder of this paper I borrow McIntosh's (1989) concept of the invisible knapsack and apply it to engineering. As she points out, this list is personal, it comes out of my experiences. Others will have a different list. What is important here is the list itself, making it apparent and transparent, as a means for challenging and disrupting the status quo.

I am asked to serve on committees because of my qualifications, not the color of my skin.

As a White male I am raceless in the eyes of society, and thus my presence at any professional meeting is a result of what skills or knowledge I bring to that meeting. Although my intersectionality as a White male of Jewish heritage may mark me as different, the physical markers of my Jewishness are not as apparent as physical markers of being, for example, African American or Hispanic. Thus, I am not expected to represent my race (Seiler, 2003). Of course asking a Hispanic person to serve on a committee in order to provide a Hispanic perspective is itself an act of White privilege. While Whites are allowed to have a variety of views on a given subject,

somehow all Hispanics (or African Americans, Native Americans, etc.) are expected to have a monolithic perspective. In order to deconstruct this privilege we can recognize that race is a social construct (Jacobson, 1998; Omi & Winant, 1986). As a person of Jewish heritage, there was a time in U.S. history when I would not have been considered White. So when I serve on a committee, am I bringing a Jewish perspective, serving as a representative for all Jews? Of course not, no more than the Hispanic member of the committee represents all Hispanics. Where the voice of the Hispanic becomes important is to make evident the ways in which she, as an individual, has faced barriers due to White privilege, thus exposing the ways in which others may have also been disadvantaged. Of course, this is not exclusively a Hispanic issue. Even I can examine the barriers I have created and make them transparent, as I am doing in this paper. By doing so I can identify ways to eliminate those barriers in the ways I interact with my engineering colleagues and students. Of course I have never seen this happen in a committee, and in practice, the presence of the "token" minority serves as another diversity success that can be checked off.

I will be taken seriously as a knower.

As a member of the privileged class, I am recognized as someone who is competent and as a result I am expected to have useful knowledge. Here the intersectionality of my White maleness with my Jewishness may work to my advantage given the stereotype of Jews as intellectuals who fill the ranks of doctors, lawyers, and financial professionals. Contrast that with someone who looks different from me – tattoos, dreadlocks, dark skin, etc. A person whose looks marks them as "different" is automatically placed in a category of

unknowing. Frank (2013) discusses epistemic injustice, how different ways of knowing can be silenced by those in power. Although he discusses this in the context of educational research, it has applicability to the general question of White privilege. In particular, testimonial injustice describes how an individual's status as a "competent knower" can be undermined through our perceptions of what a knower looks like. As Frank puts it, "In order to work against testimonial injustice, we must acknowledge that we have an image in our mind of who a competent knower is, and we must also acknowledge that this image can lead us astray. The paradigmatic image of a knower will be highly educated; White, male, middle class, heterosexual, able-bodied, and, more generally, privileged ... ; and speak Standard English" (p. 366).

It is assumed that I can be successful.

The intersectionality of my White maleness with my socioeconomic status conferred on me particular advantages as I progressed through my schooling. As I look back on my life I can recognize the path that led me to engineering. Both of my parents were professionals – my father a PhD in chemical engineering, my mother a dental hygienist. I grew up in an upper-middle-class town. I was tracked into honors classes and there was never any question that I would attend college. It was just an assumed fact of life, and my test scores and GPA indicated that I was "college ready." But although this seemed "normal" to me at the time, I now can recognize that my experience was not universal. In fact, it represents the myth of meritocracy, a myth that does not hold for those who are not privileged. For example, Amah (2012) describes the experiences of two African American, low-performing high school students as they navigate the path to college.

Although not considered "college bound" due to their academic performance, both of these students find alternate paths in an attempt to be successful. Importantly, Amah shows how their difficulties are due to their lack of power in the academic environment, rather than a "deficit" of these students as individuals. As one of her participants put it, "What are you doing if you're only letting the ones who are already ahead of the game get there? What about all those other people who don't get that opportunity? That's just dragging us down" (p. 225). This student, in particular, challenges many of the stereotypes of low-performing students through his participation in extra-curricular activities, including leadership roles, his interest in writing poetry, and his eloquence in speaking. It is through these qualities that he was accepted to a four-year university, despite his low GPA. Jones and Vagle (2013) also discuss this point in the context of class. They point out that "[p]artial, messy, and inaccurate perceptions of students grounded in classism often construct the false idea that students' capabilities are somehow already known, a fixed variable eerily reproductive of social class status outside school walls" (p. 135). One consequence of this is tracking, ostensibly based on ability, but in reality a class-based grouping. They call for a class-sensitive pedagogy in which teachers continually interrogate the ways in which their practices may perpetuate classism.

I can associate with people like me.

This is the most difficult privilege for me to discuss because it means admitting my own failings at inclusiveness. I can look back on the classes I have taught and see how I have tended to interact more with students who look like me. Of course, I talk to other students, but it feels unnatural and forced. Tienda (2013) discusses how this is a

natural, perhaps even evolutionary phenomenon that developed out of the need to distinguish friend from foe, perhaps important in prehistoric times but no longer relevant. That gives me some measure of relief, but does not relieve me of my responsibility to create an inclusive classroom. While it is easy for me, as a member of the majority, to find faculty and students that I am comfortable with, what I must do, what is imperative for me to do, is to make myself uncomfortable. By embracing people who are not like me I can begin to create a classroom that is inclusive, not just diverse.

How do we overcome these privileges? As a member of the privileged class I have the opportunity to open barriers that others face. For example, I run a summer research program for undergraduate students. One of the primary considerations for faculty to accept students to work in their

labs is the students' GPAs. It is a very competitive program so anyone with a GPA under 3.0 is not going to be accepted. But what would happen if I turned that requirement around? What if the requirement for being accepted was that your GPA was less than 3.0? That would force us to find other reasons to believe a student would be successful in the program and open it up to those who would not normally have an opportunity. I am not sure that my faculty colleagues would accept such a requirement, steeped as they are in the norms of engineering education. But the more we can interrogate these issues and identify the ways in which power and privilege work to exclude certain people, the more opportunities we have to create an inclusive atmosphere.

¹ I was raised in a Jewish home, attended Hebrew school at a conservative synagogue, and had my Bar Mitzvah at age 13. For 20 years I did not practice religion. In 2002 I converted to Christianity and was baptized in the United Methodist Church.

² I use the word "success" in quotes to emphasize that I am using this term in the conventional sense, i.e., high GPA, high SAT, ACT, and GRE scores, etc. As discussed by Amah (2012) this is a limiting view of success that devalues other skills and paths to knowledge.

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