

# **Engineering Firms as Racialized Organizations: The Experiences of Black Male Engineers**

## **Abstract**

Recent studies have shown the barriers that African Americans face in the workplace. Surprisingly, within this body of literature there is little work examining the experiences of Black engineers. We aimed to fill this gap with a qualitative study in which we interviewed a total of 23 practicing engineers. Of those 23, nine were Black males, who constitute the participants for this paper. Participants were asked about their workplace experiences. Interviews were semi-structured, allowing the interviewer to probe particular topics in more detail. Interviews were transcribed and then coded using *a priori* codes based on the tenets of Victor Ray's theory of racialized organizations. The results show the multiple ways in which these engineers experienced their workplaces as racialized organizations. We saw racialized experiences across all of Ray's tenets: agency, resources, credentials and decoupling. We also saw the presence of racialized schemas (default assumptions about how race "works") and explicit acts of racism. Overall, our results show the ways in which engineering firms are racialized to support white normativity.

## **Introduction**

Research on diversity, equity, inclusion, and antiracism within engineering has generally focused on the individual. In addition, much of this work has been conducted in education settings, with less attention on the engineering workplace. Outside of engineering, research has shown that African Americans face multiple barriers in the workplace, including bias in hiring practices, salary inequity, unfairly negative performance evaluations, fewer advancement opportunities, token hiring, placement into positions not associated with core company activities (e.g., human resources), and perceptions of incompetence [1-3]. Within engineering, research has identified a cultural mismatch between dominant white culture and the needs of Black engineers [4-8]. Individuals use personal agency to overcome the barriers they face in the workplace [7-9].

Organizations are often thought of as race- and gender-neutral structures. However, this norm is based on what bell hooks (2000) described as "the imperialist white supremacist capitalist patriarchy" [10](p. 46). Ray theorized about racialized organizations to illuminate the ubiquity of whiteness [11]. There are organizational structures that support the racialized experiences of Black workers. Ray explained that racialized organizations are operated through processes and policies that shape and are shaped by "the racial state and individual prejudice" (p. 27). These processes and policies become engrained in and through the distribution of material and social resources. He proposed a theory of racialized organizations that has four tenets: "(1) racialized organizations enhance or diminish the agency of racial groups; (2) racialized organizations legitimate the unequal distribution of resources; (3) Whiteness is a credential; and (4) the decoupling of formal rules from organizational practice is often racialized" (p. 26). He further discussed schemas, which are default assumptions about 'the way that race works.' Schemas in combination with the tenets result in racialized practices within organizations. In our own research, white engineers – men in particular – illustrated the ways in which their knowledge and experience was valued and reflected in the workplace [12]. By contrast, Black engineers described being passed over for promotions, excluded from certain opportunities, and regularly experiencing micro- and macro-aggressions with little recourse [13].

For this paper we have used Ray's theory to address the research question, how do Black male engineers experience the engineering workplace as a racialized organization? The work presented here is part of a larger study that examines the experiences of engineers across multiple demographic categories.

## **Methodology**

The research presented here is part of a larger study on the experiences of practicing engineers in the information technology (IT) industry. For this paper we report on the experiences of nine Black men. We recruited participants through our personal networks and snowball sampling. We defined the industry broadly to include both stand-alone IT companies and engineers working in IT departments of companies in other fields (e.g., software development for consumer-facing companies). Engineers working in IT support functions were excluded. Participants had worked as professionals in engineering positions in a range from 6 to 25 years. The companies at which they worked ranged from consumer service to software development, and included both large corporations and small start-ups. Because of the small number of Black engineers in the workforce, we are deliberately obscuring their identities and backgrounds. If we were, for example, to name age, years worked, and industry sector for any particular participant we would potentially be compromising their identities.

Interviews were conducted either over Zoom or in person by the fourth and fifth authors. Participants were asked about their workplace experiences with questions such as "What is it like to work at your company?" and "Tell me about an experience at your company that stands out to you." Interviews were semi-structured, allowing the interviewer to probe particular topics in more detail.

The first author was the primary analyst, with the second and third authors reviewing the analysis as a quality check. Analysis was done in two stages. In the first stage, interviews were coded using concepts from Ray's theory of racialized organizations [11]. During this stage of coding explicit acts of racism were identified, so Racism was added as a category. In the second stage of analysis, inductive coding was done within each category to understand how the participants experienced each of those categories. Open codes were assigned to transcript segments without regard to any prior codes. Open codes were then combined into sub-themes, which were further combined into themes, using constant comparison [14]. In this paper we focus on the four categories that represent the majority (89%) of coded segments in the data.

## **Results**

Table 1 shows the themes associated with each category. In the sections below we describe each of these categories in more detail.

### *Agency*

Companies sought to control the agency of the Black engineers through multiple means. There was a prominent expectation that Black men need to control their emotions to fit into the workplace. Nicholas learned this expectation from an early age.

You know, it helps to be reasonably personable. Probably especially as a Black person, you know, because I don't doubt that I'm probably one of the few or if not the

Table 1: Categories from Ray's theory of racialized organizations [11] and associated themes.

Category	Theme
Agency	Emotional control
	Work structures
	Professionalism
	Personal agency
Credentials	Forms of credential
	Impacts of Blackness
	Overcoming
Resources	Job control
	Financial control
Decoupling	Affinity groups
	Culture
	Lack of diversity

first Black person that a lot of these people have even met. And no one has said that recently, but I remember it like in college or in like elementary school and middle school and high school, that many people have told me that.

James pointed out the way that such expectations are linked to the stereotype of the “angry Black man:”

The other approach of forcing my way in and actually taking charge, even when I see that they don't want my help, I've seen it where other people have done it, it's been, they've been successful at it. I've done it a couple of times myself and you get the stigma associated with it, you know. The people who I've seen do it, it's oh yeah, they're a great leader, you know, they came in, they took charge, they helped drive us but when I do it, I'm arrogant, I'm cocky, I'm pushy, and I'm angry.

In these quotes, both Nicholas and James are showing how normative standards of professionalism constrained the agency of these engineers.

There was a dichotomy in the way that the companies could both use emotional control while providing what appeared to be supportive structures. Roger, who said he didn't want to “rock the boat” by “offer[ing] up attitude” also said that

My boss actually was the one who kind of empowered me to be like hey, yeah, what you say goes, take that and own it. It just took a while of just kind of that mantra being chanted at me for a little while.

Our participants did find ways to assert their personal agency. As a young engineer, Albert took the initiative to request participation on an international project, which opened up future opportunities for him. Ben used his experience as a source of agency, saying

You know, I'm in a position now where I can, you know, speak and not be afraid to. And then, too, not just not be afraid to, but have the confidence to where like if they did let me go, okay, fine, I'll just find another job, you know.

### *Credentials*

Use of credentials were a way for the companies to maintain an air of objectivity while maintaining racial hierarchies. Multiple forms of credential were used. Commonly, our participants noted that it took time for their technical expertise to be recognized. Frank said that, "I basically felt like I had to be there for about a year or two before people would listen to me," even though he was the only engineer with his specialty. Even though it could take time, once that expertise was established it conferred authority on our participants. As stated by Nicholas, "And so now I've got like street cred so everyone like respects my talent." Other forms of credential included education, work ethic, and experience.

Our participants also recognized whiteness as a credential that affected how they were treated. They noted instances of their white colleagues being allowed to act less professionally, receiving higher pay, and being hired into management positions. In these cases it did not appear that other forms of credential were being used as a proxy for race. Instead, our participants identified race as the only factor.

Related, Blackness was a sort of 'reverse credential' that had significant impact on their work experiences. Our participants were often ignored despite their technical expertise. Frank talked about a white coworker who ignored his guidance.

Like we talked about this, he's like well, I know what you said, but I feel like we should've done this, you know. And I think sometimes if I was a white dude that had just as much experience, he would probably listen to me more.

These instances of being ignored were emotionally hurtful, as described by James.

Where it doesn't help out so much is when you feel like you're not being heard and you believe it's due to race or culture. When you feel like you're not on, when you feel like you're not being treated equally. That's when it hurts. It hurts a little bit more when you start to think that it's due to race or your culture.

These experiences led Albert to think about how to support younger Black engineers.

[I can] never forget that somebody else is coming into that same position. So if I make it, I can't forget that there's somebody else down there that's looking at the same thing [and thinking], "Wow, I don't see anyone that looks like me, how am I going to make it?" So I have to continue to mentor through this process.

### *Resources*

The companies where our participants worked also maintained racial hierarchies through control of two types of resources: who had access to jobs and financial resources. A common way of

controlling access to jobs was through the hiring process. Will alluded to implicit bias in the hiring process when he said

This isn't the first company I've been at where [there was] a very small amount of Black people at the company. It seems to be a common thing in technology. I think race could have something to do with that as far as people doing the hiring, if they're all white and they all a similar background, there aren't being any efforts put in place that would stop that from happening...The issue definitely is people who are in the position to change these things, aren't really putting anything in a place to make it better.

While implicit bias may be a factor in any individual hiring decision, from an organizational standpoint Will's company could create structures to mitigate that bias, but doesn't.

The control of jobs through racial hierarchies resulted in an expectation that other engineers would be white. Nicholas was thus surprised when he encountered another Black engineer.

So the first time I show up to [other IT company] and I've been talking with this guy over the email for a long time and so I'm going to go meet him. I look him up and I go into a little place where he is and there's an aha moment because, "Oh, damn, you Black."

Salary and other rewards were distributed on the basis of race. Ben told a story about a project that was struggling that he took over. His supervisor promised him a raise and tickets to a professional basketball game if he was able to complete the project successfully. He did, but the promised rewards did not come.

Long story short, I was the team lead on the project and we, you know, we ended up finishing the project successfully. And so that project as big, as visible as it was, the only thing I got from that project was a pin that my manager literally got from a gumball machine that said, good job. That was it, no raise, no extra money, nothing. Literally, I'm watching other people around me, you know, get promoted for way less.

Nicholas constantly questioned if his race affected his salary.

Like in the old days like I'm going to church and like one of the old Black guys, older than myself, he says them folks are sneakier now because in the old days they'd call you boy right to your face and you knew what the deal was. He says in the new order you just don't get as much money in your raise, you just don't get the opportunity. And you don't know, it's like well, I didn't work hard enough or...[trails off].

Some of our participants were able to use their personal agency to obtain the salary they deserved. Nicholas talked about how his company has fewer Black workers than it used to because they left for higher paying jobs as the company's culture changed, while Daniel left his company to found a start-up.

## *Decoupling*

Decoupling occurs when stated commitments to diversity, equity, and inclusion do not actually work to dismantle racial hierarchies. Many of the companies had affinity groups for their Black employees. In some cases these affinity groups served as safe spaces for Black employees to share their experiences and receive support, as noted by Albert. More commonly, however, affinity groups served to at best educate others about Black culture, and at worst were ignored. Ralph talked about how he created an affinity group, which suddenly made the Black employees of his company visible.

I started the Black [affinity group] and the moment we had our first Black History Month event, folks came out and I'm like wait, what? People are actually doing things for this and yeah, we're here. "It's just never really occurred to us." So it's like literally just like a veil was unveiled and they can finally see you.

Will's company asked the affinity group for names of charities to donate to. While positive in the sense that the company was looking to support the Black community, the approach was one which used the affinity group as a "gateway" to the Black community, separating this charitable act from core organizational values.

Another form of decoupling occurred in the way company culture led to a lack of diversity, even as companies extolled the benefits of diversity. Ralph compared the culture of his former and current employer.

Like even earlier today [the CEO] started off a meeting saying stuff that's happening in Minneapolis, we need to do something about it and here is what the company's going to do to help. Straight off the bat, this is what's happening. I can say my previous company they're, "We're just not going to talk about it, it's not for politics." It's nothing to do with politics, just at least uplift your people a little bit.

Our participants pointed out the many ways that company culture impacted diversity. Nicholas talked about how diversity wasn't even part of the conversation. Daniel thought that as a Black man he would be someone his company would want to mentor, but instead, "I was just another employee." James had experiences with being left out of groups, which led to an overall culture of exclusion.

Some of the other places I worked at, they talked inclusion, but their culture didn't allow it. You had these cliques and if you weren't part of that clique, you're just an outsider. And they made it known.

The overall culture at these companies led to a lack of diversity and tokenization. Nicholas said that one of the reasons he was sent to a prestigious annual conference was that "maybe they want to show that there's some diversity."

## **Discussion**

The results of our research describe the ways the Black male engineers in our study experienced their workplaces as racialized organizations. They described the way these companies maintained racial hierarchies through control of agency, credentials, and resources, and by decoupling diversity initiatives from corporate practice. However, these means of control do not

exist in isolation from each other. They are mutually reinforcing, supporting what Ray calls schemas, default assumptions about the way race “works” [11].

The primary schema evident in our data is that Black engineers are not as competent as their white colleagues. As a result, Black engineers are hired at a lower rate (Resources), receive lower pay (Resources), take longer to have their expertise recognized (Credentials), and do not have the emotional capacity to take on leadership roles (Agency).

## Conclusion

Our research shows how engineering firms operate as racialized organizations. Their practices and cultures serve to maintain racial hierarchies while remaining supposedly “objective.” These results highlight the dangers of colorblindness [15]. Proponents of colorblindness claim that by avoiding acknowledgment of race, all people will be treated objectively. But racialized organizations maintain structures of hierarchy that work despite any individual’s desire to promote equity. Avoiding discussion of race allows those structures to continue to work. It is only by naming racialized practices that they can begin to be dismantled.

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## References

- [1] J. R. Feagin and M. P. Sikes, *Living with racism: The Black middle-class experience*. Boston: Beacon Press, 1994.
- [2] D. A. Thomas and J. J. Gabarro, *Breaking through—the making of minority executives in corporate america*. Brighton, MA: Harvard Business Review Press, 1999.
- [3] P. B. Jackson, P. A. Thoits, and H. F. Taylor, "Composition of the workplace and psychological well-being: The effects of tokenism on America's Black elite," *Social Forces*, vol. 74, pp. 543-557, 1995.
- [4] G. A. Dotson, "No employee left behind: The lived workplace experiences of inclusion/exclusion of African American engineering professionals within the semiconductor industry," PhD, Capella University, 2008.
- [5] T. S. Gibbs, "From retention to detention: A phenomenological study of the African-American engineer experience," PhD, Walden University, 2008.
- [6] D. N. Rice, "The career experiences of African American female engineers," PhD, Texas A&M University, 2011.
- [7] M. S. Ross, "A unicorn's tale: Examining the experiences of Black women in engineering industry," PhD, Purdue University, 2016.
- [8] M. S. Ross and A. Godwin, "Engineering identity implications on the retention of Black women in engineering industry," in *ASEE Annual Conference*, New Orleans, LA, 2016.
- [9] M. S. Ross, J. L. Huff, and A. Godwin, "Resilient engineering identity development critical to prolonged engagement of Black women in engineering," *Journal of Engineering Education*, vol. 110, pp. 92-113, 2021.
- [10] b. hooks, *Feminism is for everybody: Passionate politics*: South End Press, 2000.
- [11] V. Ray, "A theory of racialized organizations," *American Sociological Review*, vol. 84, pp. 26-53, 2019/02/01 2019.

- [12] E. P. Douglas, G. A. Dietz, and E. D. McCray, "Whiteness and race in the engineering workplace," in *Frontiers in Education Conference*, online, 2020.
- [13] G. A. Dietz, R. Brown, E. P. Douglas, E. D. McCray, and P. G. Richardson, "Manifestations of racism in the engineering workplace," *Studies in Engineering Education*, in review, n.d.
- [14] H. Boeije, "A purposeful approach to the constant comparative method in the analysis of qualitative interviews," *Quality & Quantity*, vol. 36, pp. 391-409, 2002.
- [15] E. Bonilla-Silva, *Racism without racists: Color-blind racism and the persistence of racial inequality in America*, 5th ed. Lanham, MD: Rowman & Littlefield, 2018.