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Black Professional Communicators Testifying to Black Technical Joy

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ABSTRACT

This article examines how 14 Black professional communicators publicly share their stories about their career change into software development and other positions in the tech industry. Findings suggest that Black readers looking to shift into the tech field benefit from emotional experiences with professional development resources as they make their strategic career pivots. Black technical joy describes this rhetorical practice to find comfort in and celebration of the strategic ways Black people approach technical communication.

KEYWORDS

Computer science / programming; racial studies / ethnic studies / cultural studies; black technical joy; black rhetoric; qualitative methods; workplace studies / professional practice

Introduction

Computer programming has become the latest type of writing (Vee, 2017) recruited for combating racial inequality by promising to help more diverse groups of people quickly change careers into software development (Jacobs & Keane, 2018; Lohr, 2015). With the promise of social mobility and the need to unravel the whiteness of software development for more inclusive technologies (Dinerstein, 2006; Scott, Martin, McAlear, & Madkins, 2016), formal educational institutions from public schools to higher education to computer code bootcamps have tried to recruit racially marginalized people into tech. And it's not just software development: other non-coding jobs such as leadership positions need more diversity and inclusion (Tomaskovic-Devey & Han, 2018). However, these top-down approaches to recruitment may not be as effective as hearing the personal stories Black people share among themselves (Johnson, Pietri, Fullilove, & Mowrer, 2019). Black digital platforms such as BlackPlanet.com and Black Twitter are spaces for storytelling, community-building, sociopolitical action, commentary on caucasity, and digital literacy learning (Banks, 2005; Brock, 2020; Everett, 2009; Gilyard & Banks, 2018; Price-Dennis, 2016; Squires, 2002). Thus, these Black digital spaces afford the opportunity to understand how Black professional communicators discuss efforts to recruit a racially diverse workforce into the majority-white tech industry.

This article answers the following questions: Given the call for more Black people in tech, what critical cultural competencies (Kirkland & Jackson, 2009) are necessary for Black people to participate in software development specifically and the tech industry in general? In what ways do Black people demonstrate how tech "amplif[ies] the agency of oppressed people – those who are materially, socially, politically, and/or economically under-resourced" (Jones & Walton, 2018, p. 42)?

To address these questions, this article examines how 14 Black[1] professional communicators (the majority of whom are software developers) use Black digital spaces to publicly write about their career switch into software development and other positions in the tech industry. Using constructivist grounded theory, findings suggest that strategic career pivots that specifically consider emotional experiences, along with access to professional development resources, demonstrate critical cultural competence that supports Black job seekers looking to shift into the tech field. Critical cultural competencies involve "an understanding of how [modes of expression] operate within a given social,

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cultural, and political context" and applying social and cultural critique of how these tools evoke "power and desire" (Kirkland & Jackson, 2009, p. 279). This article introduces Black technical joy to describe the rhetorical practice of finding comfort in and celebration of the strategic ways Black people approach technical and professional communication (TPC). We recognize Black technical joy in action when these writers interact with various social and material resources (professional development resources) to learn computer coding and other skills related to tech on their own. Further, their emotional knowledge also drives the stories that they share about their career shifts and interactions that they share with Black readers in Black digital spaces like Twitter. These digital Black stories are rhetorically constructed to feature a range of emotions that point out the humanity of Black people and the ultimate joy they attach to the process of learning TPC: paying the risk, failing fast, trusting the process of failure.

The following section discusses how Black technoculture can enhance how the field of TPC theorizes emotional experiences with the tools of TPC. This review culminates in explaining the value of Black joy and introducing Black technical joy from this study. I then describe my approach to data collection and analysis of Black professional communicators' narratives. Finally, I share my findings on how Black technical joy unfolds as a critical cultural competence for Black people to shift into TPC.

Black technoculture, Black affect, and TPC

A Western view of TPC creates a false objective interpretation of reality, seemingly making it impossible to identify how markers like race and gender shape the design, use, and production of technology and its documentation. The consequences of this view suggest a colonialist approach to knowledge: historically and today, the field "tames" so-called uncivilized non-Western communities and assimilates them into "pure, objective" ways of knowing and being (Del Hierro, 2018; Haas, 2008; Miller, 1979). This scientific basis for TPC valorizes Eurocentric and masculine approaches to research and teaching in the field (Shelton, 2020) while excluding or erasing bodily and emotional ways of knowing.

Recently, studies have examined technical communicators as knowledge-workers, using emotions to help guide their communicative decision-making. Pickering (2019) identifies case studies that explore emotional intelligence; trust in organizational settings; the ways corporations shape the emotions of employees; and strategies for politeness among clients, management, and coworkers. While these case studies show that emotional intelligence may help technical communicators complete daily workplace goals, another strand of research considers how new technical communicators create emotional strategies as they work in unfamiliar rhetorical situations. Pickering (2019) finds that newcomers to TPC develop their professional identities and agency, with the potential to more quickly adjust to new workplaces.

While scholarship has made progress on the role of emotion in TPC, racialized emotions remain undertheorized in the field as research centers white experience in the workplace. Racialized emotion is "feeling the emotional weight of their [people's] categorical location" as well as emotional response to the positions of other racial groups (Bonilla-Silva, 2019, p. 2). More than a psychological experience, emotions can move through space and time and across geo-political borders via bodies, objects, and language among and within communities (Vieira, 2019). Racialized emotions, then, can "[take] form through collisions of contact between people as well as between people and the objects, narratives, beliefs, and so forth that we encounter in the world" (Micciche, 2007, p. 28). Corrigan (2020) documents extensively how Black feelings of ambivalence and disillusionment with racial liberalism animated the Black Power movement during the Long Sixties. Notably for this article, Black Power as a mood translated into moving Black bodies geographically and temporally against the limits and slowness of progress for racial equality. Black rhetors strategically leveraged emotion into achieving goals for political participation. Thus, racial emotions do rhetorical work through communicative technologies, giving us power to shape our interpretations of our social realities and how we should interact with others in those realities.

Black emotional experiences can also be framed as experiences of bodily terror, and the tools of TPC have been deployed uncritically to uphold white supremacist attitudes in technology. For instance, the design of many artificial intelligence programs that structure our digital ecosystems are embedded with racism and sexism. Noble (2018) identifies how Google's search engine is not a neutral or objective decision-making tool. At the time of her research and writing, Noble found that searches for benign words such as "Black girls" often led to pornographic websites as the top results. These and other "search engine results perpetuate particular narratives that reflect historically uneven distributions of power in society" (Noble, 2018, p. 71). Conceptions and stereotypes of Black women that are complicit in sexualization and sexual violence against them in the past carry forward into the present categorizations of Black women in Google search results. The pornography industry capitalizes on these representations by investing time and money in search engine optimization; they monitor keyword searches and slowly associate them with sexualized images of Black women to appear in the top search results (Noble, 2018). Benjamin (2019) offers the New Jim Code to identify and analyze technologies that seem fairer "than the discriminatory systems of a previous era" but actually "reflect and reproduce existing inequities" (p. 5). New technologies carry codes or narratives about racial groups that continue legacies of "social control" (Benjamin, 2019, p. 6). These technologies uphold existing racial hierarchies, leave unacknowledged social inequity, and perpetuate racial bias rather than alleviate it, and when called out on their racism, technology designers claim color evasiveness[2] and that racial bias is a bug, not a feature (Benjamin, 2019). An example is the modern photography industry, which initially designed cameras and film to show white people clearly but left out techniques that showed darker skin tones in photos. Modern webcam technology has inherited these so-called design challenges: smart cameras that follow the user as they move from one part of the screen to another better perform with light skin tones than dark skin tones. Similar technologies used for surveillance by police departments can do the opposite, overemphasizing Black faces in their databases. As Benjamin (2019) points out, the idea that technology leads to social progress cannot be true when current technological systems inherit the designs, and thus the racial codes, of the past.

The designs of technology serve the interests of patriarchal white supremacy at the expense of misrepresenting, sexualizing, erasing, and incarcerating the bodies and emotions of Black people. However, studying the interactions between Black people and the technical tools of white supremacy does not help us articulate what Black people do with technology. Brock (2020) critiques conceptions of Western technoculture as "progress, efficiency, or in more recent decades, ideological capture" and the narrowing of Black technoculture to focus only on oppression, resistance, and labor (p. 31). Reducing Black digital practices to responses against white supremacy excludes a variety of urges – pleasure, Black cultural critique, deviance, or anti-Blackness – that guide how people use digital technologies. This libidinal economic perspective on Black technoculture accounts for "the distribution and arrangement of Black digital practice as digital labor and desire, as online politics and desire, or as digital representation and desire" (Brock, 2020, p. 34). What he ultimately calls Black joy pushes against Afro-pessimism and argues for a full and human range of all emotions that guide meaning-making strategies and circulation of Black digital practices.

Others in TPC have studied Black digital practices that relate to Black joy. Lu and Steele (2019) study how legacies of Black oral practices that expressed joy and happiness have carried forward into the present across the multiple digital platforms Black people use. In their analysis of Vine and Twitter, the authors find that Black users deployed song, imagery, and language to describe their humanity as counternarratives to death and despair. Banks (2005) also links the past to the digital present. He argues Black people use their ancestors' rhetorical traditions to create "transformative access" with technology (p. 2). This kind of access carries the conventional definition of including Black users in the digital ecosystems; however, access to those technologies on Black people's own terms leads to redesigning the interfaces of the United States. As Banks (2005) writes, "Black people have hacked or jacked access to and transformed the technologies of American life to serve the needs of Black

people and all its citizens" (p. 45). Both Banks (2005) and Lu and Steele (2019) demonstrate the range of emotions guiding Black digital practice, from resistance to societal transformation, that benefits Black people first and foremost.

Black joy challenges white-centric objectives and positivistic perspectives of technology design, use, and development by accounting for how racial emotions play a key role in how technology is used. I extend this existing scholarship by proposing Black technical joy, the rhetorical practice of finding comfort in and celebration of Black strategies and approaches to computer programming, software development, and tech careers in general. Further, Black technical joy leads to social power for Black folks sharing their career-shifting strategies. While Black joy describes Black digital practice broadly, Black *technical* joy articulates relationships Black people have with technology that allows them to leverage TPC practices and training. The field of TPC should recognize and welcome these moves in Black communities, as Black technical joy centers the humanity of Black people separate from the ways TPC has assisted in oppression of Black bodies so often documented in scholarship. Black technical joy, a rhetorically embodied and emotional practice, sophisticates the purviews of framing a justice-informed approach to professional development in TPC (Agboka & Dorpenyo, 2022; Walton, Moore, & Jones, 2020) and in computer programming in particular (Vakil, 2018).

Methods: marking digital boundaries and ethical considerations of internet research

In August 2017, I noticed that the online publishing platform *Medium* regularly emailed me stories through their Daily Digest about switching from non-tech jobs to software development. Some of these stories were written by Black professionals in tech. I wondered why there were so many stories, how many were published on other websites in other forms, and when taken together, how were these Black writers describing for Black readers the value of learning computer programming in a short time? Guided by this question, I began collecting stories that came through my inbox and from my searches online.

These stories often use titles that catch attention because they challenge assumptions that one must attend a four-year college or university to become a computer programmer. Titles may go, "How I Went from Teaching Writing to Engineering at Age 45" or "I Became a Coder in 6 Months!" These titles sound like rhetorical clickbait, but the content does contain meaningful Black perspectives on learning computer programming. My keyword search in Google incorporated some version of this title formula, such as "How I switched careers into tech" or "career change into computer programming." Search results included more articles on *Medium, FreeCodeCamp, People of Color in Tech* (POCIT), *Codeburst, Dev*, and *The Muse*. Some articles had been published on more than one digital platform, such as a post on *Medium* re-published by POCIT. (POCIT then links to the original author's *Medium* post.) My search also led me to stories in other media formats, such as podcasts and YouTube videos. At first, I focused data collection on narratives in general, leaving questions of medium, authorship, demographics, and content for another time.

I concluded data collection in Fall 2019 with 36 articles, dozens of podcast episodes, and a few YouTube videos. While I was initially interested in collecting narratives from Black coders alone, I discovered stories from Black professionals working in other positions such as marketing. Expanding my scope to include these positions helped enrich my analysis, as I could then consider Black experiences throughout the tech industry, not just software development. As I have indicated, both coding and non-coding Black professionals offer overlapping advice and experiences. I began systematically assessing the collection of stories for where they were published, who had written them across race/ethnicity and gender, and for their content. The mountains of content that circulate in digital networks make Internet research overwhelming and endless. To narrow existing data, I created a "bounded system" with "guiding goals" to "create a coherent way of looking at objects of inquiry" (Gallagher, 2019, p. 3). Three areas to consider when creating boundaries around digital data include where the data is located and what Internet users exist in that space, the length of time to collect and study digital data, and "who is included (the number of participants and who they are) as well as the

rationale for why these people are included" (Gallagher, 2019, p. 5). Having concluded the length of time to collect data, I created spatial and relational boundaries to complete my bounded system based on the following criteria:

(1) Focus on articles rather than other media for textual analysis
(2) Written by Black professionals in tech themselves
(3) Describes their switch from a job or an education background that's not in programming to a software programming position or related tech job
(4) Excluded testimonies told by other BIPOC, women, and white men, as I intended to understand Black perspectives on computer programming and tech
(5) Black writers must indicate that they're writing for a public readership[3]

I use constructivist grounded theory (Charmaz, 2014) to help make sense of the tech industry's meaning in Black digital contexts. Unlike grounded theory, constructivist grounded theory "aims to locate the research participants within the social, cultural, temporal, and situational conditions in which they live and to recognize how structural conditions and positions affect the researcher and the research process" (Charmaz, 2020, p. 168). To this end, constructive grounded theory uses an iterative analytic process of identifying broad topics line-by-line in the authors' "use of language and symbols" to understand how "actions shape meanings and meanings evoke actions" (Charmaz, 2016, p. 38). Finally, constructivist grounded theory uses a pragmatist sense of doubt and openness from research question to analysis, which "lessens the likelihood that constructivist grounded theorists will reify conventional definitions of empirical problems or take an uncritical view of their nascent analyses" (Charmaz, 2016, p. 39).

By refusing conventional definitions, reflecting on my own positionality, and questioning common assumptions regarding computer programming, TPC, and race, this analytical framework allows me to interrogate power, inequality, and marginality and the institutional policies and practices that reinforce oppression in public spheres (Charmaz, 2020). Attention to language and symbol reveal hidden discourses that construct narratives outside dominant framing of reality, opening possibilities that research serves to bring balance in oppressive societies.

I used Hypothesis to privately code articles line-by-line and store the annotations in a stable location under a secure account. The software also enabled me to read within the original digital environment the articles were published, so I could experience the articles as potential readers would. I captured the digital life of the article by Googling authors' names and the title of the articles to identify where else they were published, furthering my sense of intended readership and circulation. Taking the 14 articles together, I logged 1,711 annotations, which include open codes and analytical memos. A round of closed coding soon followed to narrow the annotations into core themes cutting across the stories into a clear understanding of the writers' lived experiences. My interpretation of these codes – through memo writing and theoretical sampling – root the writers' language in their cultural, social, and historical contexts to "enrich the resulting analysis" (Charmaz, 2020, p. 170) on "why . . . people act in ways that produce patterned outcomes" (Charmaz, 2016, p. 38).

However, my lived experience, training, and teaching with and about race and technology influence my interpretations of these stories. This article's argument comes from a Black American who understands race and racism in the context of the United States; my method for data collection invited the experiences of Black professionals from the African diaspora. In addition to the United States, Great Britain, Nigeria, and Kenya are also represented. While all four countries have overlapping histories with racism, I also cannot assume a monolithic experience with race and racism and their impact on access to digital technologies. Given my own limited knowledge of the complex histories these countries have with colonialism, technology, and racism, my analysis focuses on the contexts each writer discusses in their stories. I then direct analysis toward how they describe the practice of shifting into tech and the value the career shift has to Black readers given these named contexts; it is the conditions from which they come to TPC that guide my analysis.

Results

In this section, I describe the themes that cut across many of the 14 Black professionals' narratives about their career change into tech: paying the risk, failing fast, and trusting the process. These emotions are evident as these professionals engage the multiple resources and tools for training into computer programming and the tech industry in general. These narratives suggest that Black technical joy is an important cultural competency for engaging with TPC. This type of knowledge celebrates Black struggles and triumphs with the technologies of TPC for significant payoffs that come at the end of the process of learning.

Paying the risk

Black professionals' narratives show that the abundant tools and resources for learning coding and other pathways into tech are a double-edge sword. On one hand, the interest in computer programming has helped create low barriers for Black access to coding literacy. For example, *FreeCodeCamp* in 2014 provided links to outside sources such as Code Academy. But 7 years later, *FreeCodeCamp*'s in-house curriculum includes HTML, CSS, and JavaScript, and certifications in everything from information security to machine learning with Python. These same resources challenge Black professionals' emotional and sociocognitive practices; Black professionals on this journey must sacrifice their sociomaterial protections for switching into software development and tech. Even though many authors disliked their jobs and lack of opportunities to reach their full potential (McNaught, 2020; Ndukwe, 2018), they nevertheless had the means to support themselves and thus had to balance what they did for a living with learning computer programming. For example, Hunter (2018) opens his story in this way: "Changing careers while holding a 9–5 can feel downright impossible at times. It requires a great amount of discipline, motivation, inspiration, and most importantly, courage" (para. 1). Hunter (2018) "spent 30–40 hours teaching myself how to code depending on what curveball life threw at me" while holding down "a fulltime job and an hour commute each way to work" (para. 23). Hunter includes in his story a schedule for learning programming to show that he tried to maximize 168 hours. I found that Black professionals suggest that readers interested in a career pivot may need to pay the risk, or give up the social and financial security of their present lives, to make time and labor needed for strategically meandering their way from one learning tool to another. However, the discomfort that results from giving up what these Black professionals did to make a living gives them hope for the opportunities yet to come.

Paying the risk appears most clearly when Black authors show their vulnerability about learning coding or taking pathways into joining the tech sector. Harris (2016), for example, was a first-generation college graduate who at age 26 became the lead manager for developing programs that strengthened the global employee community in a finance company.. She was "a Black, millennial woman whose opinions were greatly valued by employees of all levels – from Analysts to Managing Directors. I was in a position to make changes to the corporate culture, while being the voice of employees my age" (Harris, 2016, para. 3). A culture that emphasized power-seeking over innovative change and relationship building led Harris to leave this lucrative and prestigious job. The period learning how to transition into tech before finding a new job required her developing a fixed budget so what was left from her corporate salary could carry her through any financial challenges.

Uche's (2018) risky decision came when he turned down the opportunity to move up from unpaid intern to full-time software developer. With 8 months left before entering required military service for Nigeria, Uche learned ASP.NET and VB.NET and HTML and CSS at his startup internship. He did so well that Uche's boss switched him to learn backend coding. A combination of self-learning and joining a community of developers made him valuable human capital to the company. Why turn down a dream job? By the time Uche received the job offer, he was already shifting to a different resource in his orbit: the recruitment cycle for the Andela Learning Community. If Uche could "build a full stack JavaScript app in 4 weeks: 2 weeks offsite and the remaining 2 weeks onsite with [a] client," Andela

would pay him to learn more computer programming and become a "world-class" programmer (2018, para. 16). He questioned himself at this stage: "Impostor syndrome crept back in and got the better of me," (Uche, 2018, para. 36). "Everything happened so fast. I had a hard time leveling up so I wasn't selected for the final week of the Bootcamp" (para. 36). Uche sacrificed financial security for a bootcamp that didn't even accept him; his plan to build on his current practices with coding literacy rather than be content with what his job had given him backfired and left him adrift.

The examples above highlight how Black individuals shared negative experiences from the initial decision to pivot into computer programming and tech. Stepping away from stable conditions and opportunities in pursuit of more ambitious social positions in tech not only taxes the material conditions these Black adults sacrifice but also their social standing among others. The vulnerability these authors feel suggest that leaving stable positions to learn new skills may seem powerful and impractical at the same time, despite the abundant ways to learn these skills and the low barriers to accessing those methods of learning coding. The authors of these career-pivot narratives are honest about the contexts in which they use these tools, and the opportunities waiting for them in and outside of tech. They show a complicated relationship with coding literacy not often acknowledged in popular discourse. So how do these examples relate to Black technical joy? These writers have hope that their sacrificing relatively comfortable lives will lead to better gains.

An example is Mboya (2018), who came from a prestigious educational background. Mboya left Kenya to study economics and film at Yale University. The weight of an Ivy League's name on its own meant that Mboya was "highly literate," and she would return to Kenya with skills valuable to their economy. Yet that prestige came with equally heavy expectations for herself and peers to make a safer, more well-trodden pathway toward social mobility. After working as a data analyst in a startup company, Mboya sunk her own money into learning how to code narratives in virtual realities. To Yale and her cohort, Mboya writes, learning coding is a step into the "abyss" (Mboya, 2018, para. 10). Mboya imagined going to a five-year reunion where her peers are well-off rich people and she lives in poverty because she failed at coding, an embarrassment to Yale alumni. Despite this fear, Mboya did achieve the outcome her sacrifice aimed to make.

> I took a risk into the unknown — something few people are willing to do because we're concerned about how we will look and we are scared about how we will fail. I don't get to escape these feelings either — but letting go of them is how I've been able to grow, learn and create the most. (para. 5)

Black technical joy can sometimes begin in relatively stable conditions that seem desirable on their own. No need to ask for more. Mboya, for example, gained a prestigious education for a certain future; yet those conditions gave her space to consider deeper interests in digital technology. What resulted was an animated desire to give up the projected path for success to learn tools in TPC. Stepping away from that path made her emotionally vulnerable to social judgment for refusing to fulfill the implicit expectations of Yale and her peers. But that risky decision was necessary for solidifying her own well-being in ways Yale, media, and economics could not. This analysis isn't meant to suggest that all emotional experiences begin in pain and, from that pain, move into joy. The Black experience seems to be understood as response to the redundancies of white supremacy. Here, however, Mboya's experience accounts for being motivated by, and celebrating, the hope that comes with paying risks.

Failing fast

Black professionals narrate multiple points of failure as they train themselves to switch careers into computer programming and tech. In popular thinking, fail fast is often misunderstood as chaotic production of ideas for the tech marketplace. However, in Agile,[4] fail fast means trying to reduce time needed to find a problem and then relaying feedback to the appropriate engineer. Then the engineer can pivot to a new more likely winning strategy for the product or system they are developing. Black professionals in this study describe similar changes as they encounter new challenges learning computer programming from the many resources and tools available to them. If paying the risks

means abandoning present conditions to achieve the hopes of social power and privilege, failing fast names the meandering emotional paths Black people can take along the journey. While many authors failed and tried new directions to succeed, I draw on two writers who explicitly address the value of being frustrated with failure.

Edwards's (2020) story details an ambitious pursuit from music to coding. The similar ways both music and software programs are created helped Edwards understand the relevance of his computer programmer career to music. He begins, "Looking back 5 years, I feel like I've failed many times over when I made the decision to leave a job in finance to pursue a music career in NYC" (Edwards, 2020, para. 1). Never really making it in music in New York City and Atlanta left him feeling isolated, uncertain, and doubtful of his prospects to do well. His first foray into learning computer programming left him "simultaneously frustrat[ed]and highly [gratified]" (Edwards, 2020, para. 7). To him, "everything I was learning was straight jibberish" but his "curiosity" carried him to "greener pastures" (Edwards, 2020, para. 7). Although at the time of his story, Edwards was 2 weeks into a computer code bootcamp, he had spent enough time learning code to offer this final advice on trusting the resources and the failure that comes with using them: Edwards hopes his story will "inspire folks to go above and beyond, do things they may have never dreamt of, even it means failing. I'd just encourage all who do so to *fail fast* so that you can get back to the drawing boards" (2020, para. 9).

Another example of this theme comes from Castelly (2020). A one-day event co-hosted by AfroTech and Spotify in 2017 and 2018 brought together Castelly's (2020) interests in Black tech, culture, and music. This conference set him on a path to a career in tech, not as a coder, but as a strategic marketing consultant with Spotify; nevertheless, he went through a long process of learning how to leverage his education and experience into a match for cultures of tech and to gain a fundamental understanding of tech, music, and marketing. His story is organized around seven pieces of advice. Number three suggests to readers, "Embrace Failure, It's The Best Coach You'll Ever Have" (#3 – Embrace Failure, It's The Best Coach You'll Ever Have, para. 17). The seventh and final advice teaches readers to "Trust Your Struggle" (#7 – Trust Your Struggle, para. 32). To demonstrate number three, Castelly describes going on "countless interviews" with no success (para. 13). Reflecting on what he could have done differently, Castelly would have reset his attitude on failing despite using his social networks to prepare himself for interviews: "When my relationship with failure changed so did my outlook on life. If you're not failing, how are you growing? Failing teaches you to be better for the next opportunity because they'll always be another opportunity" (Castelly, 2020, para.19). Castelly (2020) adopted a "growth mindset" (para. 20) while, in practice, he took feedback from his friends and other professionals to revise his approach to interviewing for tech companies. To trust his struggle, Castelly first wondered if he was too ambitious and wholly unprepared for shifting into tech marketing: all that work preparing but no real results. Similar to Edwards above, Castelly (2020) declared that quitting wasn't the answer to failure: "If the plan doesn't work, change the plan not the goal" (para. 33). To change the plan, Castelly articulated his motivations for getting work in the tech sector; he wasn't struggling for the opportunity just to get a job: "LIFE was clearly happening to me" (Castelly, 2020, para. 32).

While failing to succeed seems obvious or universal to anyone learning computer programming, failure has a different social and material meaning under critical perspectives on race. Software development, and TPC more broadly, is a majority-white and majority-male industry; thus, failure can be rhetorically positioned as a privilege for white people alone. Processes of discovery require mistakes and limited consequences with success as the outcome. Black people do not have similar access to failure; instead punishment can be more severe. For example, dominant white culture may associate failure with Black linguistic practices and success with writing and speaking in Standard American English. Black students in public schools can learn to internalize anti-Black linguistic racism from this kind of literacy education (Baker-Bell, 2020).

In their stories, Black storytellers implicitly and explicitly draw on the fail-fast principle in an Agile approach to claim failure as a privilege that they themselves can leverage. The authors encounter the emotional desire to give up their attempted career switch when they fail to initially reach their goals

with the resources of computer programming and TPC. Instead, they practice Black technical joy by reframing failure as particularly empowering for themselves and other Black people. While they remain realistic and honest about the prospects of learning on their own – risking poverty and their emotional well-being – they also show that failure is for them and it can be rewarded with greater knowledge of the tools to leverage new social power. But failing fast for these Black professionals is a collective effort, relying on feedback from those resources to quickly pivot to a new tool, event, or person to continue the path forward. In other words, Black technical joy celebrates these meandering, shifting emotions that guide authors to new opportunities.

Trusting the process

Changing plans in response to failure and then taking confidence in those next plans overlaps with a trust in the process for learning coding from their variety of resources. Paying the risk and embracing failure ultimately culminate in feeling trust from beginning to end in spite of frustrations and setbacks. Trust in these tools reflects already-documented understandings of Black technophilia. In their narratives, Black professionals tie these interests to the material and social conditions that surround their engagement with the resources for learning computer programming and TPC.

Hunter (2018) acknowledges that navigating these resources is up to the individual and their circumstances, the forces that make work with these resources difficult or easy. Offering strategies for navigating these resources, Hunter (2018) writes,

> There's no one size fits all answer. If you're more of a visual learner, video content and in person teaching could be ideal. I wouldn't bang your head against a wall trying to get through [the] curriculum simply because it's free. Does it work for you? If not, use another resource. (para. 20)

Hunter advocates jumping from source to source, based on readers' sociomaterial conditions and what fits in their own approach to learning. Hunter suggests, then, that this jumping around widens the pathways to computer programming, rather than a set curriculum established by the industry and academic institutions, which may be, and are, more constraining to some Black people. But being able to set the terms of learning computer programming makes coding literacy more appealing, and welcoming, to Black people. Knowing one can control the curriculum helps encourage trusting the resources for literacy learning.

Opal (2019) was in the final year of her second degree in Business & French Language when she decided to attend furtHER, a four-mouth computer code bootcamp in the United Kingdom. Accepted students would be interviewed for junior software engineers and developers positions throughout the country. While the program itself immersed Opal in "Front End Web Development, Python, Test Driven Development & Agile" (para. 12), she went an extra step in her learning by investing in the #100DaysofCode challenge on Instagram. The challenge encouraged coders to commit to one-hour of learning computer programming each day for 100 days; participants must publicly commit to the challenge and use the hashtag to report their progress each day. Participants must also encourage two people to also take on the challenge. Opal benefitted from this extra homework in three ways. First, it held her "accountable to ensure that I learn something new every day" and to openly share what she had learned "but I also shared what I didn't understand, what I was struggling with even emotionally" (Opal, 2019, para. 12). Sharing her emotional struggles with the computer code bootcamp allowed Opal to give an honest accounting for others interested in following a similar path. Second, Opal writes that she was able to connect with other coders around the world and those connections led to "blog features, interviews, being given advice on what I was struggling with, and being asked for advice too, which I was truly humbled by" (Opal, 2019, para. 13). Addressing her Afro-Caribbean community, Opal encourages others to trust the #100DaysofCode challenge: "You are needed & you are valuable. Your voice is important so if you are learning to code, share your journey with the #100DaysOfCode challenge & apply for those tech jobs even if you don't think you are ready" (Opal, 2019, para. 12).

The knowledge shared in these two examples suggests that shifting to coding literacy for a career in software development requires trust in the resources the economy has produced for computer programming and TPC. While Hunter trusts the process for giving him control over the directions his personal curricula can take, Opal is both humbled and inspired by the community that participants in a similar process of becoming and knowing themselves as coders. Participating with others alongside the same journey solidifies Opal's own resolve to move forward with the resources and tools to learn coding and TPC. In both emotional experiences, and for other storytellers in my analysis, authors speak to their happiness and comfort in engaging with the process of learning. They speak this joy into existence and welcome readers to step into this work. Narratives like these underscore why Black technophilia persists: trust even in technologies not necessarily intended for Black people can be another political mood to how government policies and laws fail to enact racial justice. Technologies of TPC do collaborate with racial injustice, but they also leave themselves accessible to Black thought, knowledge, and feeling. Taking these themes together as a thread–paying the risk, failing fast, and trusting the process–make for a Black technical joy as a rhetorical practice to commit to learning TPC on Black terms.

Conclusion and implications

Black technical joy is a rhetorical practice to find comfort in and celebration of the strategic ways Black people approach TPC. Emerging from the accounts of several Black professionals who switched careers into computer programming and tech, Black technical joy is one important critical cultural competence Black readers need to shift into computer programming and into tech more broadly. Black technical joy is a rhetorical approach to how the technologies of TPC "operate within a given social, cultural, and political context"; the narratives in this study apply social and cultural critique of how these tools evoke "power and desire" within themselves (Kirkland & Jackson, 2009, p. 279). Black technical joy includes rhetorical practices for responding to the emotional interactions Black people have with an abundance of tools, people, and resources for career change. Circulating the material manifestation of Black technical joy around Black digital spaces in these stories offers an emotional knowledge not often found in formalized educational institutions on computer programming and TPC. While Black technical joy may challenge institutional structures of racism in TPC, it occurs separate from, not in response to, white supremacy. Nevertheless, TPC should consider how the full and human range of racialized emotions may create a bridge between the field and antiracist practices, uprooting TPC as a cognitive and objective practice and more inclusive of bodily and emotional rhetorical moves. Acknowledging these other ways of knowing opens new points of access for Black communities.

Notes

1. Black professionals in this article represent the United States, the United Kingdom, Nigeria, and Kenya. I use *Black* to encompass these nationalities.
2. Annamma, Jackson, and Morrison (2016) argue that "color-blind racism" points out the problem of refusing to acknowledge race while associating disability with ignorance and passivity. They suggest that color-evasiveness "allows for both comprehensively situating the conceptualization and critique of color-blindness as well as thoughtfully considering how to move the underlying ideology forward expansively" (p. 158).
3. For this study, I referred to McKee and Porter (2008) and Quinton and Reynolds (2018) for advice on the ethics of doing my Internet research study. Rather than determining if online content is private or public, "we need to think about the sensitivity of the subject we might be researching as well as the vulnerability of the research participants" (Quinton & Reynolds, 2018, p. 159) to decide if informed consent is required. University institutional review boards (IRB) may not have clear guidance on how to assess the ethics and harm of Internet research (My university determined my study was exempt from further review because I was not speaking directly to the authors.). In response to limited guidance or policy from IRB, scholars should make an empathetic, humanizing "probable judgment" (McKee & Porter, 2008, p. 725) and reflect if "it's reasonable to assume that [the authors] desire their content to be disseminated and also commented upon, which includes the analysis of their content as a data resource for research" (Quinton & Reynolds, 2018, p. 159).

4. Agile is an incremental and iterative collaborative approach to project management that emphasizes teams' quickly delivering versions of a product or service to clients in a two-week sprint to receive feedback. Teams can then implement desired changes to the product or service in another two-week sprint. This process of iterative discovery helps teams reduce risks and ensure the product adapts to new requirements. Agile was first developed in software development in 2001 and has since been implemented in other industries.

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No potential conflict of interest was reported by the author(s).

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