Introduction
The New Jim Code

Naming a child is serious business. And if you are not White in the United States, there is much more to it than personal preference. When my younger son was born I wanted to give him an Arabic name to reflect part of our family heritage. But it was not long after 9/11, so of course I hesitated. I already knew he would be profiled as a Black youth and adult, so, like most Black mothers, I had already started mentally sparring those who would try to harm my child, even before he was born. Did I really want to add *another* round to the fight? Well, the fact is, I am also very stubborn. If you tell me I should *not* do something, I take that as a dare. So I gave the child an Arabic first *and* middle name and noted on his birth announcement: "This guarantees he will be flagged anytime he tries to fly."

If you think I am being hyperbolic, keep in mind that names are racially coded. While they are one of the everyday tools we use to express individuality and connections, they are also markers interacting with numerous technologies, like airport screening systems and police risk assessments, as forms of data. Depending on one's name, one is more likely to be detained by state actors in the name of "public safety."

Just as in naming a child, there are many everyday contexts – such as applying for jobs, or shopping – that employ emerging technologies, often to the detriment of those who are racially marked. This book explores how such technologies, which often pose as objective, scientific, or progressive, too often reinforce racism and other forms of inequity. Together, we will work to decode the powerful assumptions and values embedded in the material and digital architecture of our world. And we will be stubborn in our pursuit of a more just and equitable approach to tech – ignoring the voice in our head that says, "No way!" "Impossible!" "Not realistic!" But as activist and educator Mariame Kaba contends, "hope is a discipline."[1] Reality is something we create together, except that so few people have a genuine say in the world in which they are forced to live. Amid so much suffering and injustice, we cannot resign ourselves to this reality we have inherited. It is time to reimagine what is possible. So let's get to work.

Everyday Coding

Each year I teach an undergraduate course on race and racism and I typically begin the class with an exercise designed to help me get to know the students while introducing the themes we will wrestle with during the semester. *What's in a name?* Your family story, your religion, your nationality, your gender identity, your race and ethnicity? What assumptions do you think people make about you on the basis of your name? What about your nicknames – are they chosen or imposed? From intimate patterns in dating and romance to large-scale employment trends, our names can open and shut doors. Like a welcome sign inviting people

in or a scary mask repelling and pushing them away, this thing that is most *ours* is also out of our hands.

The popular book and Netflix documentary *Freakonomics* describe the process of parents naming their kids as an exercise in branding, positioning children as more or less valuable in a competitive social marketplace. If we are the product, our names are the billboard – a symptom of a larger neoliberal rationale that subsumes all other sociopolitical priorities to "economic growth, competitive positioning, and capital enhancement."[2] My students invariably chuckle when the "baby-naming expert" comes on the screen to help parents "launch" their newest offspring. But the fact remains that naming is serious business. The stakes are high not only because parents' decisions will follow their children for a lifetime, but also because names reflect much longer histories of conflict and assimilation and signal fierce political struggles – as when US immigrants from Eastern Europe anglicize their names, or African Americans at the height of the Black Power movement took Arabic or African names to oppose White supremacy.

I will admit, something that irks me about conversations regarding naming trends is how distinctly African American names are set apart as comically "made up" – a pattern continued in *Freakonomics*. This tendency, as I point out to students, is a symptom of the chronic anti-Blackness that pervades even attempts to "celebrate difference." Blackness is routinely conflated with cultural deficiency, poverty, and pathology … Oh, those poor Black mothers, look at how they misspell "Uneeq." Not only does this this reek of classism, but it also harbors a willful disregard for the fact that everyone's names were at one point made up![3]

Usually, many of my White students assume that the naming exercise is not about them. "I just have a normal name," "I was named after my granddad," "I don't have an interesting story, prof." But the presumed blandness of White American culture is a crucial part of our national narrative. Scholars describe the power of this plainness as the invisible "center" against which everything else is compared and as the "norm" against which everyone else is measured. Upon further reflection, what appears to be an absence in terms of being "cultureless" works more like a superpower. Invisibility, with regard to Whiteness, offers immunity. To be unmarked by race allows you to reap the benefits but escape responsibility for your role in an unjust system. Just check out the hashtag #CrimingWhileWhite to read the stories of people who are clearly aware that their Whiteness works for them like an armor and a force field when dealing with the police. A "normal" name is just one of many tools that reinforce racial invisibility.

As a class, then, we begin to understand that all those things dubbed "just ordinary" are also cultural, as they embody values, beliefs, and narratives, and normal names offer some of the most powerful stories of all. If names are social codes that we use to make everyday assessments about people, they are not neutral but racialized, gendered, and classed in predictable ways. Whether in the time of Moses, Malcolm X, or Missy Elliot, names have never grown on trees. They are concocted in cultural laboratories and encoded and infused with meaning and experience – particular histories, longings, and anxieties. And some

people, by virtue of their social position, are given more license to experiment with unique names. Basically, status confers cultural value that engenders status, in an ongoing cycle of social reproduction.[4]

In a classic study of how names impact people's experience on the job market, researchers show that, all other things being equal, job seekers with White-sounding first names received 50 percent more callbacks from employers than job seekers with Black-sounding names.[5] They calculated that the racial gap was equivalent to eight years of relevant work experience, which White applicants did not actually have; and the gap persisted across occupations, industry, employer size – even when employers included the "equal opportunity" clause in their ads.[6] With emerging technologies we might assume that racial bias will be more scientifically rooted out. Yet, rather than challenging or overcoming the cycles of inequity, technical fixes too often reinforce and even deepen the status quo. For example, a study by a team of computer scientists at Princeton examined whether a popular algorithm, trained on human writing online, would exhibit the same biased tendencies that psychologists have documented among humans. They found that the algorithm associated White-sounding names with "pleasant" words and Black-sounding names with "unpleasant" ones.[7]

Such findings demonstrate what I call "the New Jim Code": *the employment of new technologies that reflect and reproduce existing inequities but that are promoted and perceived as more objective or progressive than the discriminatory systems of a previous era.*[8] Like other kinds of codes that we think of as neutral, "normal" names have power by virtue of their perceived neutrality. They trigger stories about what kind of person is behind the name – their personality and potential, where they come from but also where they should go.

Codes are both reflective and predictive. They have a past and a future. "Alice Tang" comes from a family that values education and is expected to do well in math and science. "Tyrone Jackson" hails from a neighborhood where survival trumps scholastics; and he is expected to excel in sports. More than stereotypes, codes act as narratives, telling us what to expect. As data scientist and *Weapons of Math Destruction* author Cathy O'Neil observes, "[r]acism is the most slovenly of predictive models. It is powered by haphazard data gathering and spurious correlations, reinforced by institutional inequities, and polluted by confirmation bias."[9]

Racial codes are born from the goal of, and facilitate, social control. For instance, in a recent audit of California's gang database, not only do Blacks and Latinxs constitute 87 percent of those listed, but many of the names turned out to be babies under the age of 1, some of whom were supposedly "self-described gang members." So far, no one ventures to explain how this could have happened, except by saying that some combination of zip codes and racially coded names constitute a risk.[10] Once someone is added to the database, whether they know they are listed *or not*, they undergo even more surveillance and lose a number of rights.[11]

Most important, then, is the fact that, once something or someone is coded, this can be hard to change. Think of all of the time and effort it takes for a person to change her name legally.

Or, going back to California's gang database: "Although federal regulations require that people be removed from the database after five years, some records were not scheduled to be removed for more than 100 years."[12] Yet rigidity can also give rise to ingenuity. Think of the proliferation of nicknames, an informal mechanism that allows us to work around legal systems that try to fix us in place. We do not have to embrace the status quo, even though we must still deal with the sometimes dangerous consequences of being illegible, as when a transgender person is "deadnamed" – called their birth name rather than chosen name. Codes, in short, operate within powerful systems of meaning that render some things visible, others invisible, and create a vast array of distortions and dangers.

I share this exercise of how my students and I wrestle with the cultural politics of naming because names are an expressive tool that helps us think about the social and political dimensions of all sorts of technologies explored in this book. From everyday apps to complex algorithms, *Race after Technology* aims to cut through industry hype to offer a field guide into the world of biased bots, altruistic algorithms, and their many coded cousins. Far from coming upon a sinister story of racist programmers scheming in the dark corners of the web, we will find that the desire for objectivity, efficiency, profitability, and progress fuels the pursuit of technical fixes across many different social arenas. *Oh, if only there were a way to slay centuries of racial demons with a social justice bot!* But, as we will see, the road to inequity is paved with technical fixes.

Along the way, this book introduces conceptual tools to help us decode the promises of tech with historically and sociologically informed skepticism. I argue that tech fixes often hide, speed up, and even deepen discrimination, while appearing to be neutral or benevolent when compared to the racism of a previous era. This set of practices that I call the New Jim Code encompasses a range of discriminatory designs – some that explicitly work to amplify hierarchies, many that ignore and thus replicate social divisions, and a number that aim to fix racial bias but end up doing the opposite.

Importantly, the attempt to shroud racist systems under the cloak of objectivity has been made before. In *The Condemnation of Blackness*, historian Khalil Muhammad (2011) reveals how an earlier "racial data revolution" in the nineteenth century marshalled science and statistics to make a "disinterested" case for White superiority:

> Racial knowledge that had been dominated by anecdotal, hereditarian, and pseudo-biological theories of race would gradually be transformed by new social scientific theories of race and society and *new tools of analysis*, namely racial statistics and social surveys. Out of the new methods and data sources, *black criminality* would emerge, alongside disease and intelligence, as a fundamental measure of black inferiority.[13]

You might be tempted to see the datafication of injustice in that era as having been much worse than in the present, but I suggest we hold off on easy distinctions because, as we shall see, the language of "progress" is too easily weaponized against those who suffer most under oppressive systems, however sanitized.

Readers are also likely to note how the term New Jim Code draws on *The New Jim Crow*,

Michelle Alexander's (2012) book that makes a case for how the US carceral system has produced a "new racial caste system" by locking people into a stigmatized group through a colorblind ideology, a way of labeling people as "criminals" that permits legalized discrimination against them. To talk of the *new* Jim Crow, begs the question: What of the *old*? "Jim Crow" was first introduced as the title character of an 1832 minstrel show that mocked and denigrated Black people. White people used it not only as a derogatory epithet but also as a way to mark space, "legal and social devices intended to separate, isolate, and subordinate Blacks."[14] And, while it started as a folk concept, it was taken up as an academic shorthand for legalized racial segregation, oppression, and injustice in the US South between the 1890s and the 1950s. It has proven to be an elastic term, used to describe an era, a geographic region, laws, institutions, customs, and a *code* of behavior that upholds White supremacy.[15] Alexander compares the old with the new Jim Crow in a number of ways, but most relevant for this discussion is her emphasis on a shift from explicit racialization to a colorblind ideology that masks the destruction wrought by the carceral system, severely limiting the life chances of those labeled criminals who, by design, are overwhelmingly Black. "Criminal," in this era, is code for Black, but also for poor, immigrant, second-class, disposable, unwanted, detritus.

What happens when this kind of cultural coding gets embedded into the technical coding of software programs? In a now classic study, computer scientist Latanya Sweeney examined how online search results associated Black names with arrest records at a much higher rate than White names, a phenomenon that she first noticed when Google-searching her own name; and results suggested she had a criminal record.[16] The lesson? "Google's algorithms were optimizing for the racially discriminating patterns of past users who had clicked on these ads, learning the racist preferences of some users and feeding them back to everyone else."[17] In a technical sense, the writer James Baldwin's insight is prescient: "The great force of history comes from the fact that we carry it within us, are unconsciously controlled by it in many ways, and history is literally *present* in all that we do."[18] And when these technical codes move beyond the bounds of the carceral system, beyond labeling people as "high" and "low" risk criminals, when automated systems from employment, education, healthcare, and housing come to make decisions about people's deservedness for all kinds of opportunities, then tech designers are erecting a digital caste system, structured by existing racial inequities that are not just colorblind, as Alexander warns. These tech advances are sold as morally superior because they purport to rise above human bias, even though they could not exist without data produced through histories of exclusion and discrimination.

In fact, as this book shows, colorblindness is no longer even a prerequisite for the New Jim Code. In some cases, technology "sees" racial difference, and this range of vision can involve seemingly positive affirmations or celebrations of presumed cultural differences. And yet we are told that how tech sees "difference" is a more objective reflection of reality than if a mere human produced the same results. Even with the plethora of visibly diverse imagery engendered and circulated through technical advances, particularly social media, bias enters through the backdoor of design optimization in which the humans who create the algorithms

are hidden from view.

Move Slower …

Problem solving is at the heart of tech. An algorithm, after all, is a set of instructions, rules, and calculations designed to solve problems. Data for Black Lives co-founder Yeshimabeit Milner reminds us that "[t]he decision to make every Black life count as three-fifths of a person was embedded in the electoral college, an algorithm that continues to be the basis of our current democracy."[19] Thus, even just deciding *what problem* needs solving requires a host of judgments; and yet we are expected to *pay no attention to the man behind the screen.*[20]

As danah boyd and M. C. Elish of the Data & Society Research Institute posit, "[t]he datasets and models used in these systems are not objective representations of reality. They are the culmination of particular tools, people, and power structures that foreground one way of seeing or judging over another."[21] By pulling back the curtain and drawing attention to forms of coded inequity, not only do we become more aware of the social dimensions of technology but we can work together against the emergence of a digital caste system that relies on our naivety when it comes to the neutrality of technology. This problem extends beyond obvious forms of criminalization and surveillance.[22] It includes an elaborate social and technical apparatus that governs all areas of life.

The animating force of the New Jim Code is that tech designers encode judgments into technical systems but claim that the racist results of their designs are entirely exterior to the encoding process. Racism thus becomes doubled – magnified and buried under layers of digital denial. There are bad actors in this arena that are easier to spot than others. Facebook executives who denied and lied about their knowledge of Russia's interference in the 2016 presidential election via social media are perpetrators of the most broadcast violation of public trust to date.[23] But the line between bad and "neutral" players is a fuzzy one and there are many tech insiders hiding behind the language of free speech, allowing racist and sexist harassment to run rampant in the digital public square and looking the other way as avowedly bad actors deliberately crash into others with reckless abandon.

For this reason, we should consider how private industry choices are in fact public policy decisions. They are animated by political values influenced strongly by libertarianism, which extols individual autonomy and corporate freedom from government regulation. However, a recent survey of the political views of 600 tech entrepreneurs found that a majority of them favor higher taxes on the rich, social benefits for the poor, single-payer healthcare, environmental regulations, parental leave, immigration protections, and other issues that align with Democratic causes. Yet most of them also staunchly opposed labor unions and government regulation.[24] As one observer put it, "Silicon Valley entrepreneurs don't mind the government regulating other industries, but they prefer Washington to stay out of their own business."[25] For example, while many say they support single-payer healthcare *in theory*, they are also reluctant to contribute to tax revenue that would fund such an

undertaking. So "political values" here is less about party affiliation or what people believe in the abstract and more to do with how the decisions of tech entrepreneurs impact questions of power, ethics, equity, and sociality. In that light, I think the dominant ethos in this arena is best expressed by Facebook's original motto: "Move Fast and Break Things." To which we should ask: *What about the people and places broken in the process?* Residents of Silicon Valley displaced by the spike in housing costs, or Amazon warehouse workers compelled to skip bathroom breaks and pee in bottles.[26] "Move Fast, Break People, and Call It Progress"?

"Data sharing," for instance, sounds like a positive development, streamlining the bulky bureaucracies of government so the public can access goods and services faster. But access goes both ways. If someone is marked "risky" in one arena, that stigma follows him around much more efficiently, streamlining marginalization. A leading Europe-based advocate for workers' data rights described how she was denied a bank loan despite having a high income and no debt, because the lender had access to her health file, which showed that she had a tumor.[27] In the United States, data fusion centers are one of the most pernicious sites of the New Jim Code, coordinating "data-sharing among state and local police, intelligence agencies, and private companies"[28] and deepening what Stop LAPD Spying Coalition calls the stalker state. Like other techy euphemisms, "fusion" recalls those trendy restaurants where food looks like art. But the clientele of such upscale eateries is rarely the target of data fusion centers that terrorize the residents of many cities.

If private companies are creating public policies by other means, then I think we should stop calling ourselves "users." Users *get used*. We are more like unwitting constituents who, by clicking submit, have authorized tech giants to represent our interests. But there are promising signs that the tide is turning.

According to a recent survey, a growing segment of the public (55 percent, up from 45 percent) wants more regulation of the tech industry, saying that it does more to hurt democracy and free speech than help.[29] And company executives are admitting more responsibility for safeguarding against hate speech and harassment on their platforms. For example, Facebook hired thousands more people on its safety and security team and is investing in automated tools to spot toxic content. Following Russia's disinformation campaign using Facebook ads, the company is now "proactively finding and suspending coordinated networks of accounts and pages aiming to spread propaganda, and telling the world about it when it does. The company has enlisted fact-checkers to help prevent fake news from spreading as broadly as it once did."[30]

In November 2018, Zuckerberg held a press call to announce the formation of a "new independent body" that users could turn to if they wanted to appeal a decision made to take down their content. But many observers criticize these attempts to address public concerns as not fully reckoning with the political dimensions of the company's private decisions. Reporter Kevin Roose summarizes this governance behind closed doors:

Shorter version of this call: Facebook is starting a judicial branch to handle the overflow for its executive branch, which is also its legislative branch, also the whole thing is a monarchy.[31]

The co-director of the AI Now Research Institute, Kate Crawford, probes further:

Will Facebook's new Supreme Court just be in the US? Or one for every country where they operate? Which norms and laws rule? Do execs get to overrule the decisions? Finally, why stop at user content? Why not independent oversight of the whole system?"[32]

The "ruthless code of secrecy" that enshrouds Silicon Valley is one of the major factors fueling public distrust.[33] So, too, is the rabid appetite of big tech to consume all in its path, digital and physical real estate alike. "There is so much of life that remains undisrupted." As one longtime tech consultant to companies including Apple, IBM, and Microsoft put it, "For all intents and purposes, we're only 35 years into a 75-or 80-year process of moving from analog to digital. The image of Silicon Valley as Nirvana has certainly taken a hit, but the reality is that we the consumers are constantly voting for them."[34] The fact is, the stakes are too high, the harms too widespread, the incentives too enticing, for the public to accept the tech industry's attempts at self-regulation.

It is revealing, in my view, that many tech insiders choose a more judicious approach to tech when it comes to raising their own kids.[35] There are reports of Silicon Valley parents requiring nannies to sign "no-phone contracts"[36] and opting to send their children to schools in which devices are banned or introduced slowly, in favor of "pencils, paper, blackboards, and craft materials."[37] *Move Slower and Protect People*? All the while I attend education conferences around the country in which vendors fill massive expo halls to sell educators the latest products couched in a concern that all students deserve access – yet the most privileged *refuse it*? Those afforded the luxury of opting out are concerned with tech addiction – "On the scale between candy and crack cocaine, it's closer to crack cocaine," one CEO said of screens.[38] Many are also wary about the lack of data privacy, because access goes both ways with apps and websites that track users' information.

In fact the author of *The Art of Computer Programming,* the field's bible (and some call Knuth himself "the Yoda of Silicon Valley"), recently commented that he feels "algorithms are getting too prominent in the world. It started out that computer scientists were worried nobody was listening to us. Now I'm worried that too many people are listening."[39] To the extent that social elites are able to exercise more control in this arena (at least for now), they also position themselves as digital elites within a hierarchy that allows some modicum of informed refusal at the very top. For the rest of us, nanny contracts and Waldorf tuition are not an option, which is why the notion of a *personal* right to refuse *privately* is not a tenable solution.[40]

The New Jim Code will not be thwarted by simply revising user agreements, as most companies attempted to do in the days following Zuckerberg's 2018 congressional testimony.

And more and more young people seem to know that, as when Brooklyn students staged a walkout to protest a Facebook-designed online program, saying that "it forces them to stare at computers for hours and 'teach ourselves,'" guaranteeing only 10–15 minutes of "mentoring" each week![41] In fact these students have a lot to teach us about refusing tech fixes for complex social problems that come packaged in catchphrases like "personalized learning."[42] They are sick and tired of being atomized and quantified, of having their personal uniqueness sold to them, one "tailored" experience after another. They're not buying it. Coded inequity, in short, can be met with collective defiance, with resisting the allure of (depersonalized) personalization and asserting, in this case, the sociality of learning. This kind of defiance calls into question a libertarian ethos that assumes what we all *really* want is to be left alone, screen in hand, staring at reflections of ourselves. Social theorist Karl Marx might call tech personalization our era's opium of the masses and encourage us to "just say no," though he might also point out that not everyone is in an equal position to refuse, owing to existing forms of stratification. *Move slower and empower people*.

Tailoring: Targeting

In examining how different forms of coded inequity take shape, this text presents a case for understanding race itself as a kind of tool – one designed to stratify and sanctify social injustice as part of the architecture of everyday life. In this way, this book challenges us to question not only the technologies we are sold, but also the ones we manufacture ourselves. For most of US history, White Americans have used race as a tool to denigrate, endanger, and exploit non-White people – openly, explicitly, and without shying away from the deadly demarcations that racial imagination brings to life. And, while overt White supremacy is proudly reasserting itself with the election of Donald Trump in 2016, much of this is newly cloaked in the language of White victimization and false equivalency. What about a White history month? White studies programs? White student unions? No longer content with the power of invisibility, a vocal subset of the population wants to be recognized and celebrated as White – a backlash against the civil rights gains of the mid-twentieth century, the election of the country's first Black president, diverse representations in popular culture, and, more fundamentally, a refusal to comprehend that, as Baldwin put it, "white is a metaphor for power," unlike any other color in the rainbow.[43]

The dominant shift toward multiculturalism has been marked by a move away from one-size-fits-all mass marketing toward ethnically tailored niches that capitalize on calls for diversity. For example, the Netflix movie recommendations that pop up on your screen can entice Black viewers, by using tailored movie posters of Black supporting cast members, to get you to click on an option that you might otherwise pass on.[44] Why bother with broader structural changes in casting and media representation, when marketing gurus can make Black actors *appear* more visible than they really are in the actual film? It may be that the hashtag #OscarsSoWhite drew attention to the overwhelming Whiteness of the Academy Awards, but, so long as algorithms become more tailored, the public will be given the illusion of progress.[45]

Importantly, Netflix and other platforms that thrive on tailored marketing do not need to ask viewers about their race, because they use prior viewing and search histories as proxies that help them predict who will be attracted to differently cast movie posters. Economic recognition is a ready but inadequate proxy for political representation and social power. This transactional model of citizenship presumes that people's primary value hinges on the ability to spend money and, in the digital age, expend attention … browsing, clicking, buying. This helps explain why different attempts to opt out of tech-mediated life can itself become criminalized, as it threatens the digital order of things. Analog is antisocial, with emphasis on *anti* … "what are you trying to hide?"

Meanwhile, multiculturalism's proponents are usually not interested in facing White supremacy head on. Sure, movies like *Crazy Rich Asians* and TV shows like *Black-ish*, *Fresh off the Boat*, and *The Goldbergs* do more than target their particular demographics; at times, they offer incisive commentary on the racial–ethnic dynamics of everyday life, drawing viewers of all backgrounds into their stories. Then there is the steady stream of hits coming out of Shondaland that deliberately buck the Hollywood penchant for typecasting. In response to questions about her approach to shows like *Grey's Anatomy* and *Scandal*, Shonda Rhimes says she is not trying to diversify television but to normalize it: "Women, people of color, LGBTQ people equal WAY more than 50 percent of the population. Which means it ain't out of the ordinary. I am making the world of television look NORMAL."[46]

But, whether TV or tech, cosmetic diversity too easily stands in for substantive change, with a focus on feel-good differences like food, language, and dress, not on systemic disadvantages associated with employment, education, and policing. Celebrating diversity, in this way, usually avoids sober truth-telling so as not to ruin the party. Who needs to bother with race or sex disparities in the workplace, when companies can capitalize on stereotypical differences between groups?

The company BIC came out with a line of "BICs For Her" pens that were not only pink, small, and bejeweled, but priced higher than the non-gendered ones. Criticism was swift. Even *Business Insider*, not exactly known as a feminist news outlet, chimed in: "Finally, there's a lady's pen that makes it possible for the gentler sex to write on pink, scented paper: Bic for Her. Remember to dot your i's with hearts or smiley faces, girls!" Online reviewers were equally fierce and funny:

> Finally! For years I've had to rely on pencils, or at worst, a twig and some drops of my feminine blood to write down recipes (the only thing a lady should be writing ever) … I had despaired of ever being able to write down said recipes in a permanent manner, though my men-folk assured me that I "shouldn't worry yer pretty little head." But, AT LAST! Bic, the great liberator, has released a womanly pen that my gentle baby hands can use without fear of unlady-like callouses and bruises. Thank you, Bic![47]

No, thank *you*, anonymous reviewers! But the last I checked, ladies' pens are still available for purchase at a friendly online retailer near you, though packaging now includes a nod to "breast cancer awareness," or what is called pinkwashing – the co-optation of breast cancer

to sell products or provide cover for questionable political campaigns.[48]

Critics launched a similar online campaign against an IBM initiative called Hack a Hair Dryer. In the company's efforts to encourage girls to enter STEM professions, they relied on tired stereotypes of girls and women as uniquely preoccupied with appearance and grooming:

> Sorry @IBM i'm too busy working on lipstick chemistry and writing down formula with little hearts over the i s to #HackAHairDryer"[49]

Niche marketing, in other words, has a serious downside when tailoring morphs into targeting and stereotypical containment. Despite decades of scholarship on the social fabrication of group identity, tech developers, like their marketing counterparts, are encoding race, ethnicity, and gender as immutable characteristics that can be measured, bought, and sold. Vows of colorblindness are not necessary to shield coded inequity if we believe that scientifically calculated differences are somehow superior to crude human bias.

Consider this ad for ethnicity recognition software developed by a Russian company, NTech Lab – which beats Google's Facenet as the world's best system for recognition, with 73.3 percent accuracy on 1 million faces (Figure 0.1).[50] NTech explains that its algorithm has "practical applications in retail, healthcare, entertainment and other industries by delivering accurate and timely demographic data to enhance the quality of service"; this includes targeted marketing campaigns and more.[51]

What N-Tech does not mention is that this technology is especially useful to law enforcement and immigration officials and can even be used at mass sporting and cultural events to monitor streaming video feed.[52] This shows how multicultural representation, marketed as an individualistic and fun experience, can quickly turn into criminalizing misrepresentation. While some companies such as NTech are already being adopted for purposes of policing, other companies, for example "Diversity Inc," which I will introduce in the next chapter, are squarely in the ethnic marketing business, and some are even developing techniques to try to bypass human bias. What accounts for this proliferation of racial codification?

Figure 0.1 N-Tech Lab, Ethnicity Recognition

Source: Twitter @mor10, May 12, 2018, 5:46 p.m.

Why Now?

Today the glaring gap between egalitarian principles and inequitable practices is filled with subtler forms of discrimination that give the illusion of progress and neutrality, even as coded inequity makes it easier and faster to produce racist outcomes. Notice that I said outcomes and not beliefs, because it is important for us to assess how technology can reinforce bias by what it does, regardless of marketing or intention. But first we should acknowledge that intentional and targeted forms of White supremacy abound!

As sociologist Jessie Daniels documents, White nationalists have ridden the digital wave with great success. They are especially fond of Twitter and use it to spread their message, grow their network, disguise themselves online, and generate harassment campaigns that target people of color, especially Black women.[53] Not only does the design of such platforms enable the "gamification of hate" by placing the burden on individual users to report harassers; Twitter's relatively hands-off approach when it comes to the often violent and hate-filled content of White supremacists actually benefits the company's bottom line.

This is a business model in which more traffic equals more profit, even if that traffic involves violently crashing into other users – as when *Ghostbusters* star Leslie Jones received constant threats of rape and lynching after noted White supremacist Milo Yiannopoulos rallied a digital mob against her: a high-profile example of the macro-aggressions that many Black women experience on social media every day.[54] In Daniels' words, "[s]imply put, White supremacists love Twitter because Twitter loves them back."[55] Jones for her part reached out to her friend, Twitter's CEO Jack Dorsey; and Dorsey is now considering artificial

intelligence (AI) of the kind used on Instagram to identify hate speech and harassment.[56]

And, while the use of social media to amplify and spread obvious forms of racial hatred is an ongoing problem that requires systematic interventions, it is also the most straightforward to decode, literally. For example, White supremacists routinely embed seemingly benign symbols in online content, cartoon characters or hand signs, that disseminate and normalize their propaganda. However, these are only the most visible forms of coded inequity in which we can identify the intentions of self-proclaimed racists. The danger, as I see it, is when we allow these more obvious forms of virulent racism to monopolize our attention, when the equivalent of slow death – the subtler and even alluring forms of coded inequity – get a pass. My book hopes to focus more of our attention on this New Jim Code.

Today explicitly racist laws are no longer on the books, yet racism continues in many areas of life as a result of a vast carceral apparatus that facilitates legal discrimination against those "marked" with a criminal record. So, while Black people in the abstract enjoy greater freedom of movement, in practice many are immobilized by an elaborate penal system. Not only those who are convicted, but entire families and communities are stigmatized and penalized by association – they carry a badge of dishonor with widespread consequences, such as restrictions on where people can live, work, and move around.[57] This is the paradox Michelle Alexander documents: the legalized discrimination afforded by the US penal system at a time when de jure segregation is no longer acceptable. Thanks to the work of Alexander and many others, social awareness about the carceral system is growing and people are looking for "more humane" alternatives, such as ankle monitors, and "more objective" measures, such as crime prediction software, to decide who should be caged and for how long. As widespread concern over mass incarceration increases, people are turning to technological fixes that encode inequity in a different form.

Growing exposure of social problems is fueling new forms of obfuscation. For instance, public discourse is filled with frequent and widespread condemnation of blatant acts of racism, albeit often euphemized through the language of "racial incidents." No longer limited to television or newspapers, condemnation on social media makes the practice of "dragging" people through the virtual public square easier and swifter. Viral hashtags and memes allow almost anyone to publicize racist transgressions, sometimes as they are happening, with the potential for news to spread globally in a matter of minutes. Dragging can be entertaining, and it is profitable for corporations by driving up clicks; but it is also cathartic for those who previously had their experiences of racism questioned or dismissed. It offers a collective ritual, which acknowledges and exposes the everyday insults and dangers that are an ongoing part of Black life. Video recordings, in particular, position viewers as witnesses whose judgment may have political and professional repercussions for those whose blatant racist actions are on view.

For example, in the spring of 2018, the TV network ABC cancelled the revival of the sitcom *Roseanne,* after the show's eponymous lead actress, Roseanne Barr, tweeted a series of racist messages ending with one that directed racially coded slurs at Valerie Jarrett, former advisor to Barack Obama. Hashtags like #CancelRoseanne operate like a virtual public square in

which response to racial insults are offered and debated. Memes, too, are an effective tool for dragging racism. One of the most creative and comedic depicts a White woman at Oakland's Lake Merritt who called the police on a Black man who was barbecuing with the "wrong" type of grill. BBQBecky's image from the video recording has been cut and pasted at the scene of many "crimes" – she is depicted calling the police on the 1963 March on Washington, on Rosa Parks sitting on the bus, on Michelle and Barack Obama getting sworn into office, and even on the Black Panther as he greets cheering crowds at the Wakanda waterfalls – among many other faux offenses.

In a context in which people are able to voice their discontent and expose the absurdity of everyday insults, the pervasiveness of race talk can serve as a proxy for more far-reaching social progress. Paradoxically, as platforms like Twitter, Instagram, and YouTube give more opportunities to put blatant acts of racism on trial, many of these same companies encode more insidious forms of inequity in the very design of their products and services. By drawing our attention to Roseanne-like slurs or BBQBecky-like citizen policing, dragging may obscure how the New Jim Code operates behind the scenes.

Similarly, the hypervisibility of Black celebrities, athletes, and politicians can mask the widespread disenfranchisement of Black communities through de facto segregation and the punishment apparatus. How can a society filled with millions of people cheering for LeBron, singing along to Beyoncé, tuning in to Oprah, and pining for the presidency of Obama be … racist? But alas, "Black faces in high places" is not an aberration but a key feature of a society structured by White supremacy.[58] In hindsight, we would not point to the prominence of Black performers and politicians in the early twentieth century as a sign that racism was on the decline. But it is common to hear that line of reasoning today.

Tokenism is not simply a distraction from systemic domination. Black celebrities are sometimes recruited to be the (Black) face of technologies that have the potential to deepen racial inequities. For example, in 2018 Microsoft launched a campaign featuring the rapper Common to promote AI:

> Today, right now, you have more power at your fingertips than entire generations that came before you. Think about that. That's what technology really is. It's possibility. It's adaptability. It's capability. But in the end it's only a tool. What's a hammer without a person who swings it? It's not about what technology can do, it's about what you can do with it. You're the voice, and it's the microphone. When you're the artist, it's the paintbrush. We are living in the future we always dreamed of … AI empowering us to change the world we see … So here's the question: What will you do with it?[59]

Savvy marketing on the part of Microsoft, for sure. What better aesthetic than a Black hip-hop artist to represent AI as empowering, forward-thinking, cool – the antithesis of anti-Black discrimination? Not to mention that, as an art form, hip-hop has long pushed the boundaries of technological experimentation through beatboxing, deejaying, sampling, and more. One could imagine corporate-sponsored rap battles between artists and AI *coming to a platform near you*. The democratizing ethos of Common's narration positions the listener as a protagonist in a world of AI, one whose voice can direct the development of this tool even

though rarely a day goes by without some report on biased bots. So what is happening behind the screens?

A former Apple employee who noted that he was "not Black or Hispanic" described his experience on a team that was developing speech recognition for Siri, the virtual assistant program. As they worked on different English dialects – Australian, Singaporean, and Indian English – he asked his boss: "What about African American English?" To this his boss responded: "Well, Apple products are for the premium market." And this happened in 2015, "one year after [the rapper] Dr. Dre sold Beats by Dr. Dre to Apple for a billion dollars." The irony, the former employee seemed to imply, was that the company could somehow devalue *and* value Blackness at the same time.[60] It is one thing to capitalize on the coolness of a Black artist to sell (overpriced) products and quite another to engage the cultural specificity of Black people enough to enhance the underlying design of a widely used technology. This is why the notion that tech bias is "unintentional" or "unconscious" obscures the reality – that there is no way to create something without some intention and intended user in mind (a point I will return to in the next chapter).

For now, the Siri example helps to highlight how just having a more diverse team is an inadequate solution to discriminatory design practices that grow out of the interplay of racism and capitalism. Jason Mars, a Black computer scientist, expressed his frustration saying, "There's a kind of pressure to conform to the prejudices of the world … It would be interesting to have a black guy talk [as the voice for his app], but we don't want to create friction, either. First we need to sell products."[61] How does the fist-pumping empowerment of Microsoft's campaign figure in a world in which the voices of Black programmers like Mars are treated as conflict-inducing? Who gets muted in this brave new world? The view that "technology is a neutral tool" ignores how race also functions like a tool, structuring whose literal voice gets embodied in AI. In celebrating diversity, tokenistic approaches to tech development fail to acknowledge how the White aesthetic colors AI. The "blandness" of Whiteness that some of my students brought up when discussing their names is treated by programmers as normal, universal, and appealing. The invisible power of Whiteness means that even a Black computer scientist running his own company who earnestly wants to encode a different voice into his app is still hemmed in by the desire of many people for White-sounding voices.

So, as we work to understand the New Jim Code, it is important to look beyond marketing rhetoric to the realities of selling and targeting diversity. One of the companies, Diversity, Inc., which I will discuss in more detail in Chapter 1, creates software that helps other companies and organizations tailor marketing campaigns to different ethnic groups. In the process it delineates over 150 distinct ethnicities and "builds" new ones for companies and organizations that want to market their goods or services to a subgroup not already represented in the Diversity, Inc. database. Technologies do not just reflect racial fault lines but can be used to reconstruct and repackage social groupings in ways that seem to celebrate difference. But would you consider this laudable or exploitative, opportunistic or oppressive? And who ultimately profits from the proliferation of ethnically tailored marketing? These are

questions we will continue to wrestle with in the pages ahead.

Finally, the New Jim Code is part of a broader push toward privatization where efforts to cut costs and maximize profits, often at the expense of other human needs, is a guiding rationale for public and private sectors alike.[62] Computational approaches to a wide array of problems are seen as not only good but necessary, and a key feature of cost-cutting measures is the outsourcing of decisions to "smart" machines. Whether deciding which teacher to hire or fire or which loan applicant to approve or decline, automated systems are alluring because they seem to remove the burden from gatekeepers, who may be too overworked or too biased to make sound judgments. Profit maximization, in short, is rebranded as bias minimization.

But the outsourcing of human decisions is, at once, the insourcing of coded inequity. As philosopher and sociologist Herbert Marcuse remarked, "[t]echnological rationality has become political rationality." Considering Marcuse's point, as people become more attuned to racial biases in hiring, firing, loaning, policing, and a whole host of consequential decisions – an awareness we might take to be a sign of social progress – this very process also operates as a kind of opportunity for those who seek to manage social life more efficiently. The potential for bias creates a demand for more efficient and automated organizational practices, such as the employment screening carried out by AI – an example we will explore in more depth. Important to this story is the fact that power operates at the level of institutions and individuals – our political and mental structures – shaping citizen-subjects who prioritize efficiency over equity.

It is certainly the case that algorithmic discrimination is only one facet of a much wider phenomenon, in which what it means to be human is called into question. What do "free will" and "autonomy" mean in a world in which algorithms are tracking, predicting, and persuading us at every turn? Historian Yuval Noah Harari warns that tech knows us better than we know ourselves, and that "we are facing not just a technological crisis but a philosophical crisis."[63] This is an industry with access to data and capital that exceeds that of sovereign nations, throwing even that sovereignty into question when such technologies draw upon the science of persuasion to track, addict, and manipulate the public. We are talking about a redefinition of human identity, autonomy, core constitutional rights, and democratic principles more broadly.[64]

In this context, one could argue that the racial dimensions of the problem are a subplot of (even a distraction from) the main action of humanity at risk. But, as philosopher Sylvia Wynter has argued, our very notion of what it means to be human is fragmented by race and other axes of difference. She posits that there are different "genres" of humanity that include "full humans, not-quite humans, and nonhumans,"[65] through which racial, gendered, and colonial hierarchies are encoded. The pseudo-universal version of humanity, "the Man," she argues, is only *one* form, and that it is predicated on anti-Blackness. As such, Black humanity and freedom entail thinking and acting beyond the dominant genre, which could include telling different stories about the past, the present, and the future.[66]

But what does this have to do with coded inequity? First, it's true, anti-Black technologies do

not necessarily limit their harm to those coded Black.[67] However, a universalizing lens may actually hide many of the dangers of discriminatory design, because in many ways Black people *already* live in the future.[68] The plight of Black people has consistently been a harbinger of wider processes – bankers using financial technologies to prey on Black homeowners, law enforcement using surveillance technologies to control Black neighborhoods, or politicians using legislative techniques to disenfranchise Black voters – which then get rolled out on an even wider scale. An #AllLivesMatter approach to technology is not only false inclusion but also poor planning, especially by those who fancy themselves as futurists.

Many tech enthusiasts wax poetic about a posthuman world and, indeed, the expansion of big data analytics, predictive algorithms, and AI, animate digital dreams of living beyond the human mind and body – even beyond human bias and racism. *But posthumanist visions assume that we have all had a chance to be human.* How nice it must be … to be so tired of living mortally that one dreams of immortality. Like so many other "posts" (postracial, postcolonial, etc.), posthumanism grows out of the Man's experience. This means that, by decoding the racial dimensions of technology and the way in which different genres of humanity are constructed in the process, we gain a keener sense of the architecture of power – and not simply as a top-down story of powerful tech companies imposing coded inequity onto an innocent public. This is also about how we (click) submit, because of all that we seem to gain by having our choices and behaviors tracked, predicted, and racialized. The director of research at Diversity, Inc. put it to me like this: "Would *you* really want to see a gun-toting White man in a Facebook ad?" Tailoring ads makes economic sense for companies that try to appeal to people "like me": a Black woman whose sister-in-law was killed in a mass shooting, who has had to "shelter in place" after a gunman opened fire in a neighboring building minutes after I delivered a talk, and who worries that her teenage sons may be assaulted by police or vigilantes. Fair enough. Given these powerful associations, a gun-toting White man would probably not be the best image for getting my business.

But there is a slippery slope between effective marketing and efficient racism. The same sort of algorithmic filtering that ushers more ethnically tailored representations into my feed can also redirect real estate ads away from people "like me." This filtering has been used to show higher-paying job ads to men more often than to women, to charge more for standardized test prep courses to people in areas with a high density of Asian residents, and many other forms of coded inequity. In cases of the second type especially, we observe how geographic segregation animates the New Jim Code. While the gender wage gap and the "race tax" (non-Whites being charged more for the same services) are nothing new, the difference is that coded inequity makes discrimination easier, faster, and even harder to challenge, because there is not just a racist boss, banker, or shopkeeper to report. Instead, the public must hold accountable the very platforms and programmers that legally and often invisibly facilitate the New Jim Code, even as we reckon with our desire for more "diversity and inclusion" online and offline.

Taken together, all these features of the current era animate the New Jim Code. While more

institutions and people are outspoken against blatant racism, discriminatory practices are becoming more deeply embedded within the sociotechnical infrastructure of everyday life. Likewise, the visibility of successful non-White individuals in almost every social arena can obscure the reality of the systemic bias that still affects many people. Finally, the proliferation of ever more sophisticated ways to use ethnicity in marketing goods, services, and even political messages generates more buy-in from those of us who may not want to "build" an ethnicity but who are part of New Jim Code architecture nevertheless.

The Anti-Black Box

Race after Technology integrates the tools of science and technology studies (STS) and critical race studies to examine coded inequity and our contemporary racial landscape. Taken together within the framework of what I term *race critical code studies,* this approach helps us open the Black box of coded inequity. "Black box" is a metaphor commonly used in STS to describe how the social production of science and technology is hidden from view. For example, in *The Black Box Society,* legal scholar Frank Pasquale (2014) interrogates the "secret algorithms" that are fundamental to businesses, from Wall Street to Silicon Valley, and criticizes how the law is used to aggressively protect commercial secrecy while ignoring our right to privacy.[69] His use of the term "Black box" draws on its double meaning, as recording device and as mysterious object; and here I recast this term to draw attention to the routine anti-Blackness that inheres in so much tech development. What I call the *anti-Black box* links the race-neutral technologies that encode inequity to the race-neutral laws and policies that serve as powerful tools for White supremacy.

An example is the Trump administration's proposed "work for welfare" policy, which imposes mandatory work requirements on anyone who receives healthcare benefits through Medicaid. Correction: not anyone. Some Republican-controlled states have found a way to protect poor White Americans from the requirement by instituting a waiver for people living in areas with a high unemployment rate. Taken at face value, this looks like a fair exception and seems to be race-neutral in that it could benefit poorer Americans of all backgrounds. In practice, however, people living in urban centers would not qualify because of their proximity to wealthier suburbs, which pull the overall unemployment rate down for the majority of Black urban residents.

Public policy, then, like popular discourse, is filled with racial coding. Rural :: White and urban :: Black; so, without ever making race explicit, state lawmakers are able to carve out an exception for their White constituents. In a country as segregated as the United States, geography is a reliable proxy for race. If zip codes are a relatively low-tech device for instituting racism, how might we apply this insight to computer codes? How do they reinforce racist norms and structures without explicitly invoking race? And can we develop a race-conscious orientation to emerging technology, not only as a mode of critique but as a prerequisite for designing technology differently?

Race as Technology

This field guide explores not only how emerging technologies hide, speed up, or reinforce racism, but also how race itself is a kind of technology[70] – one designed to separate, stratify, and sanctify the many forms of injustice experienced by members of racialized groups, but one that people routinely reimagine and redeploy to their own ends.

Human toolmaking is not limited to the stone instruments of our early ancestors or to the sleek gadgets produced by the modern tech industry. Human cultures also create symbolic devices that structure society. Race, to be sure, is one of our most powerful tools – developed over hundreds of years, varying across time and place, codified in law and refined through custom, and, tragically, still considered by many people to reflect immutable differences between groups. For that reason, throughout this book, we will consider not only how racial logics enter the design of technology but how race itself operates as a tool of vision and division with often deadly results.

Racism is, let us not forget, a means to reconcile contradictions. Only a society that extolled "liberty for all" while holding millions of people in bondage requires such a powerful ideology in order to build a nation amid such a startling contradiction. How else could one declare "[w]e hold these truths to be self-evident, that all men are created equal, that they are endowed by their Creator with certain unalienable Rights," and at the same time deny these rights to a large portion of the population[71] – namely by claiming that its members, by virtue of their presumed lack of humanity, were never even eligible for those rights?[72] Openly despotic societies, by contrast, are in no need of the elaborate ideological apparatus that props up "free" societies. Freedom, as the saying goes, *ain't free*. But not everyone is required to pay its steep price in equal measure. The same is true of the social costs of technological progress.

Consider that the most iconic revolt "against machines," as it is commonly remembered, was staged by English textile workers, the Luddites, in nineteenth-century England. Often remembered as people who were out of touch and hated technology, the Luddites were actually protesting the *social costs* of technological "progress" that the working class was being forced to accept. "To break the machine was in a sense to break the conversion of oneself into a machine for the accumulating wealth of another," according to cultural theorist Imani Perry.[73] At a recent conference titled "AI & Ethics," the communications director of a nonprofit AI research company, Jack Clark, pointed out that, although the term "Luddite" is often used today as a term of disparagement for anyone who is presumed to oppose (or even question!) automation, the Luddite response was actually directed at the manner in which machinery was rolled out, without consideration for its negative impact on workers and society overall. Perhaps the current era of technological transformation, Clark suggested, warrants a similar sensibility – demanding a more careful and democratic approach to technology.[74]

Shifting from nineteenth-century England to late twenty-first-century Mexico, sci-fi filmmaker Alex Rivera wrestles with a similar predicament of a near future in which workers

are not simply displaced but inhabited by technology. *Sleep Dealer* (2008) is set in a dystopian world of corporate-controlled water, militarized drones, "aqua-terrorists" (or water liberators, depending on your sympathies), and a walled-off border between Mexico and the United States. The main protagonist, Memo Cruz, and his co-workers plug networked cables into nodes implanted in their bodies. This enables them to operate robots on the other side of the border, giving the United States what it always wanted: "all the work without the workers."[75]

Such fictional accounts find their real-life counterpart in "electronic sweatshops," where companies such as Apple, HP, and Dell treat humans like automata, reportedly requiring Chinese workers to complete tasks every three seconds over a 12-hour period, without speaking or using the bathroom.[76] Indeed, as I write, over 1,000 workers at Amazon in Spain have initiated a strike over wages and rights, following similar protests in Italy and Germany in 2017. If we probe exploitative labor practices, the stated intention would likely elicit buzzwords such as "lower costs" and "greater efficiency," signaling a fundamental tension and paradox – the indispensable disposability of those whose labor enables innovation. The language of intentionality only makes one side of this equation visible, namely the desire to produce goods faster and cheaper, while giving people "the opportunity to work." This fails to account for the social costs of a technology in which global forms of racism, caste, class, sex, and gender exploitation are the nuts and bolts of development.[77]

"Racing" after technology, in this context, is about the pursuit of efficiency, neutrality, Ready to Update, Install Now, I Agree, and about what happens when we (click) submit too quickly.[78] Whether it is in the architecture of machines or in the implementation of laws, racial logic imposes "race corrections" that distort our understanding of the world.[79] Consider the court decision in the case against one Mr. Henry Davis, who was charged with destruction of property for bleeding on police uniforms after officers incorrectly identified him as having an outstanding warrant and then beat him into submission:

> On and/or about the 20th day of September 20, 2009 at or near 222 S. Florissant within the corporate limits of Ferguson, Missouri, the above-named defendant did then and there unlawfully commit the offense of "property damage" to wit did transfer blood to the uniform.[80]

When Davis sued the officers, the judge tossed out the case, saying: "a reasonable officer could have believed that beating a subdued and compliant Mr. Davis while causing a concussion, scalp lacerations, and bruising with almost no permanent damage, did not violate the Constitution."[81] The judge "race-corrected" our reading of the US Constitution, making it inapplicable to the likes of Mr. Davis – a reminder that, whatever else we think racism is, it is not simply ignorance, or a not knowing. Until we come to grips with the "reasonableness" of racism, we will continue to look for it on the bloody floors of Charleston churches and in the dashboard cameras on Texas highways, and overlook it in the smart-sounding logics of textbooks, policy statements, court rulings, science journals, and cutting-edge technologies.

Beyond Techno-Determinism

In the following chapters we will explore not only how racism is an output of technologies gone wrong, but also how it is an input, part of the social context of design processes. The mistaken view that society is affected *by* but does not affect technological development is one expression of a deterministic worldview. Headlines abound: "Is Facebook Making Us Lonely?";[82] "Genetic Engineering Will Change Everything Forever";[83] "Pentagon Video Warns of 'Unavoidable' Dystopian Future for World's Biggest Cities."[84] In each, you can observe the conventional relationship proffered between technology and society. It is the view that such developments are inevitable, the engine of human progress … or decline.

An extreme and rather mystical example of techno-determinism was expressed by libertarian journalist Matt Ridley, who surmised that not even basic science is essential, because innovation has a trajectory all its own:

> Technology seems to change by a sort of inexorable, evolutionary progress, which we probably cannot stop – or speed up much either … Increasingly, technology is developing the kind of autonomy that hitherto characterized biological entities … The implications of this new way of seeing technology – as an autonomous, evolving entity that continues to progress whoever is in charge – are startling. People are pawns in a process. We ride rather than drive the innovation wave. Technology will find its inventors, rather than vice versa.[85]

Whereas such hard determinists, like Ridley, posit that technology has a mind of its own, soft determinists grant that it is at least possible for people to make decisions about technology's trajectory. However, they still imagine a lag period in which society is playing catch-up, adjusting its laws and norms to the latest invention. In this latter view, technology is often depicted as neutral, or as a blank slate developed outside political and social contexts, with the potential to be shaped and governed through human action. But, as Manuel Castells argues, "[t]he dilemma of technological determinism is probably a false problem, since technology is society, and society cannot be understood or represented without its technological tools."[86]

Considering Castells' point about the symbiotic relationship between technology and society, this book employs a conceptual toolkit that synthesizes scholarship from STS and critical race studies. Surprisingly, these two fields of study are not often put into direct conversation. STS scholarship opens wide the "Black box" that typically conceals the inner workings of socio-technical systems, and critical race studies interrogates the inner workings of sociolegal systems. Using this hybrid approach, we observe not only that any given social order is impacted by technological development, as determinists would argue, but that social norms, ideologies, and practices are a constitutive part of technical design.

Much of the early research and commentary on race and information technologies coalesced around the idea of the "digital divide," with a focus on unequal access to computers and the Internet that falls along predictable racial, class, and gender lines. And, while attention to

access is vital, especially given numerous socioeconomic activities that involve using the Internet, the larger narrative of a techno-utopia in which technology will necessarily benefit all undergird the "digital divide" focus. Naively, access to computers and the Internet is posited as a solution to inequality.[87] And, to the extent that marginalized groups are said to fear or lack an understanding of technology, the "digital divide" framing reproduces culturally essentialist understandings of inequality. A focus on technophobia and technological illiteracy downplays the structural barriers to access, and also ignores the many forms of tech engagement and innovation that people of color engage in.

In fact, with the advent of mobile phones and wireless laptops, African Americans and Latinxs are more active web users than White people.[88] Much of the African continent, in turn, is expected to "leapfrog" past other regions, because it is not hampered by clunky infrastructure associated with older technologies. In "The Revolution Will Be Digitized: Afrocentricity and the Digital Public Sphere," Anna Everett critiques "the overwhelming characterizations of the brave new world of cyberspace as primarily a racialized sphere of Whiteness" that consigns Black people to the low-tech sphere – when they are present at all.[89] Other works effectively challenge the "digital divide" framing by analyzing the racialized boundary constructed between "low" and "high tech."[90] Likewise, Lisa Nakamura (2013) challenges the model minority framing of Asian Americans as the "solution" to the problem of race in a digital culture. She explains:

> Different minorities have different functions in the cultural landscape of digital technologies. They are good for different kinds of ideological work … seeing Asians as the solution and blacks as the problem [i.e. cybertyping] is and has always been a drastic and damaging formulation which pits minorities against each other …[91]

In contrast to critical race studies analyses of the dystopian digital divide and cybertyping, another stream of criticism focuses on utopian notions of a "race-free future" in which technologies would purportedly render obsolete social differences that are divisive now.[92] The idea that, "[o]n the Internet, nobody knows you're a dog" (a line from Peter Steiner's famous 1993 *New Yorker* cartoon, featuring a typing canine) exemplifies this vision. However, this idea relies on a text-only web, which has been complicated by the rise of visual culture on the Internet.[93] For example, as already mentioned, Jessie Daniels (2009) investigates the proliferation of White nationalist ideology and communities online, unsettling any techno-utopian hopes for a colorblind approach to social life in a digital era. And, as Alondra Nelson shows, both the digital divide and the raceless utopia framings posit race as a liability, as "either negligible or evidence of negligence," so that "racial identity, and blackness in particular, is the anti-avatar of digital life."[94] It is also worth noting how, in both conceptions, technology is imagined as impacting racial divisions – magnifying or obliterating them – but racial ideologies do not seem to shape the design of technology.

Race critical code studies would have us look at how race and racism impact who has access to new devices, as well as how technologies are produced in the first place. Two incisive works are particularly relevant for thinking about the tension between innovation and

containment. In *Algorithms of Oppression* Safiya Noble (2018) argues that the anti-Black and sexist Google search results – such as the pornographic images that come up when you search for "Black girls" – grow out of a "corporate logic of either willful neglect or a profit imperative that makes money from racism and sexism," as key ingredients in the normative substrate of Silicon Valley. In a similar vein, Simone Browne (2015), in *Dark Matters: On the Surveillance of Blackness*, examines how surveillance technologies coproduce notions of Blackness and explains that "surveillance is nothing new to black folks"; from slave ships and slave patrols to airport security checkpoints and stop-and-frisk policing practices, she points to the "facticity of surveillance in black life."[95] Challenging a technologically determinist approach, she argues that, instead of "seeing surveillance as something inaugurated by new technologies," to "see it as ongoing is to insist that we factor in how racism and anti-Blackness undergird and sustain the intersecting surveillances of our present order."[96] As both Noble and Browne emphasize and as my book will expand upon, anti-Black racism, whether in search results or in surveillance systems, is not only a symptom or outcome, but a precondition for the fabrication of such technologies.[97]

Race as technology: this is an invitation to consider racism in relation to other forms of domination as not just an ideology or history, but as a set of technologies that generate patterns of social relations, and these become Black-boxed as natural, inevitable, *automatic*. As such, this is also an invitation to refuse the illusion of inevitability in which technologies of race come wrapped and to "hotwire" more habitable forms of social organization in the process.[98]

Race critical code studies, as I develop it here, is defined not just by *what* we study but also by *how* we analyze, questioning our own assumptions about what is deemed high theory versus pop culture, academic versus activist, evidence versus anecdote. The point is not just to look beneath the surface in order to find connections between these categories, but to pay closer attention to the surfaces themselves. Here I draw upon the idea of *thin description* as a method for reading surfaces – such as screens and skin – especially since a key feature of being racialized is "to be encountered as a surface."[99] In anthropologist John L. Jackson's formulation, thin description is "about how we all travel … through the thicket of time and space, about the way … both of those trajectories might be constructively thinned, theorized, concretized, or dislodged in service to questions about how we relate to one another in a digital age."[100] He critiques the worship of thick description within anthropology, arguing that it "tries to pass itself off as more than it is, as embodying an expertise that simulates (and maybe even surpasses) any of the ways in which the people being studied might know themselves … one that would pretend to see *everything* and, therefore, sometimes sees less than it could."[101]

Thinness, in this way, attempts a humble but no less ambitious approach to knowledge production. Thinness allows greater elasticity, engaging fields of thought and action too often disconnected. This analytic flexibility, in my view, is an antidote to digital disconnection, tracing links between individual and institutional, mundane and spectacular, desirable and deadly in a way that troubles easy distinctions.

At the same time, thin description is a method of respecting particular kinds of boundaries. According to Jackson,

> If thick description imagines itself able to amass more and more factual information in service to stories about cultural difference, "thin description" doesn't fall into the trap of conceptualizing its task as providing complete and total knowledge … So, there are secrets you keep. That you treat very preciously. Names of research subjects you share but many more you do not. There is information veiled for the sake of story. For the sake of much more.[102]

If the New Jim Code seeks to penetrate all areas of life, extracting data, producing hierarchies, and predicting futures, thin description exercises a much needed discretion, pushing back against the all-knowing, extractive, monopolizing practices of coded inequity.

Thinness is not an analytic *failure,* but an acceptance of *fragility* … a methodological counterpoint to the hubris that animates so much tech development. What we know today about coded inequity may require a complete rethinking, as social and technical systems change over time. Let's not forget: racism is a mercurial practice, shape-shifting, adept at disguising itself in progressive-like rhetoric. If our thinking becomes too weighed down by our own assuredness, we are likely to miss the avant-garde stylings of NextGen Racism as it struts by.

Beyond Biased Bots

How do we move beyond the idea of biased bots, so we can begin to understand a wide range of coded inequities? Here I propose four dimensions to the New Jim Code: engineered inequity, default discrimination, coded exposure, and technological benevolence; and I will elaborate on them in the following chapters.

Chapter 1 takes a closer look at how *engineered inequity* explicitly works to amplify social hierarchies that are based on race, class, and gender and how the debate regarding "racist robots" is framed in popular discourse. I conclude that robots can be racist, given their design in a society structured by interlocking forms of domination.[103]

Chapter 2 looks at what happens when tech developers do not attend to the social and historical context of their work and explores how *default discrimination* grows out of design processes that ignore social cleavages. I also consider how what is often depicted as glitches might serve as powerful opportunities to examine the overall system, a technological canary in the coal mine.

Chapter 3 examines the multiple forms of *coded exposure* that technologies enable, from Polaroid cameras to computer software. Here I think through the various form of visibility and of how, for racialized groups, the problem of being watched (but not seen) relates to newfangled forms of surveillance.

Chapter 4 explores how *technological beneficence* animates tech products and services that

offer fixes for social bias. Here I take a look at technologies that explicitly work to address different forms of discrimination, but that may still end up reproducing, or even deepening, discriminatory processes because of the narrow way in which "fairness" is defined and operationalized.

Finally, Chapter 5 examines how practitioners, scholars, activists, artists, and students are working to resist and challenge the New Jim Code – and how you, the reader, can contribute to an approach to technology that moves beyond accessing new products, to advocating for justice-oriented design practices.

Taken as a whole, the conceptual toolkit we build around a race critical code studies will be useful, I hope, for analyzing a wide range of phenomena – from the explicit codification of racial difference in particular devices to the implicit assumption that technology is race-neutral – through which Whiteness becomes the default setting for tech development. This field guide critically interrogates the progressive narratives that surround technology and encourages us to examine how racism is often maintained or perpetuated through technical fixes to social problems. And finally, the next chapters examine the different facets of coded inequity with an eye toward designing them differently. Are you ready?

Notes

1. Kaba describes "grounded hope" as a philosophy of living that must be practiced every day and that it is different from optimism and does not protect one from feeling sadness, frustration, or anger. See her "Beyond Prisons" podcast, episode 19, at https://shadowproof.com/2018/01/05/beyond-prisons-episode-19-hope-is-a-discipline-feat-mariame-kaba.

2. Brown 2015, p. 26.

3. Inevitably, my students turn the question back on me: "Tell us about your name, prof?" As I was born to an African American father and a Persian Indian mother, my parents wanted me to have a first name with Arabic origins, but one that was short enough, so English speakers wouldn't butcher it. They were mostly successful, except that my friends still call me "Ru" … nicknames are a form of endearment after all. What I find amusing these days is getting messages addressed to "Mr. Benjamin" or "Mr. Ruha." Since Benjamin is more often used as a masculine first name, people whom I have never met routinely switch the order in their heads and mis-gender me as a result. I sometimes wonder whether I receive some fleeting male privilege – more deference, perhaps. This, after all, is the reason why some of my female students say their parents gave them more gender-neutral names: to delay (if not diminish) sexist assumptions about their qualifications and capacities. Similar rationale for my Black, Asian, and Latinx students with stereotypically White-sounding names: "My parents didn't want me to have a hard time," "They wanted me to have a normal American name" (where "American" is always coded "White").

4. The Apples and Norths of the world tend to experience less ridicule and more fascination,

owing to their celebrity parentage, which tell us that there is nothing intrinsic to a "good" name, nothing that makes for it.

5. So, is the solution for those with racially stigmatized names to code-switch by adopting names that offer more currency on the job market? Or does this simply accommodate bias and leave it in place? In a number of informal experiments, job seekers put this idea to the test. Jose Zamora dropped one letter from his first name and found that "Joe Zamora," with all the same education and credentials, magically started hearing from employers. Similarly, after two years of searching for a job, Yolanda Spivey changed the name on her résumé to "Bianca White," and suddenly her inbox was full of employers interested in interviewing her. What stunned Yolanda most was that, while the same résumé was posted with her real name on the employment website, employers were repeatedly calling "Bianca," desperate to get an interview.

6. When the study was replicated in France, another team found that Christian-sounding names had a similar value over and above Muslim-sounding names, and they could not explain the difference through other factors such as experience or education.

7. Caliskan et al. 2017. Fun fact: did you know that the words "algorithm" and "algebra" come from a Persian astronomer and mathematician, Muhammad Ibn Musa al-Khwarizmi, whose last name was Latinized as Algorithmi? I suspect, given how his name would likely trigger surveillance systems today, he would cheer on algorithmic audits that are trying to prevent such biased associations!

8. I'm thinking of Browne's (2015) "racializing surveillance," Broussard's (2018) "technochauvinism," Buolamwini's (2016) "coded gaze," Eubanks' (2018) "digital poorhouse," Noble's (2018) "algorithms of oppression and technological redlining," or Wachter-Boettcher's (2017) "algorithmic inequity" (among other kindred formulations) as "cousin concepts" related to the New Jim Code.

9. O'Neil 2016, p. 23.

10. Another example is Wilmer Catalan-Ramirez, an undocumented Chicago resident who was listed without his knowledge in the city's gang database as a member of two *rival* gangs (Saleh 2018).

11. See the CalGang Criminal Intelligence System report at http://www.voiceofsandiego.org/wp-content/uploads/2016/08/CalGangs-audit.pdf. See also Harvey 2016.

12. Harvey 2016.

13. Muhammad 2011, p. 20, emphasis added; see also Zuberi 2003.

14. Wacquant 2017, p. 2.

15. Wacquant 2017; emphasis added.

16. Sweeney 2013.

17. boyd and Elish 2018.

18. Baldwin 1998, p. 723.

19. In her letter to Zuckerberg, Milner (2018) continues:

   "Histories of redlining, segregation, voter disenfranchisement and state sanctioned violence have not disappeared, but have been codified and disguised through new big data regimes."

20. This refers to a classic line in the film *Wizard of Oz* in which Oz attempts to conceal his machinations: "Pay no attention to the man behind the curtain."

21. boyd and Elish 2018.

22. Alexander 2018.

23. Frenkel et al. 2018.

24. Cohen 2017.

25. Gelin 2018.

26. Liao 2018.

27. Talk by Christina Colclough at the AI Ethics conference, March 10, 2018, Princeton University, sponsored by the Center for Information Technology Policy and the University Center for Human Values. See also http://www.thefutureworldofwork.org.

28. Monahan and Palmer 2009, p. 617.

29. Hart 2018.

30. Thompson and Lapowsky 2018.

31. Twitter @kevinroose, November 15, 2018, 3:33 p.m.

32. Twitter @katecrawford, November 15, 2018, 4:37 p.m.

33. Solon 2018.

34. Streitfeld 2019.

35. Weller 2017.

36. Lebowitz 2018.

37. Hoyle 2018.

38. John Lilly, a Silicon Valley-based venture capitalist, said: "he tries to help his 13-year-old son understand that he is being manipulated by those who built the technology. 'I try to tell him somebody wrote code to make you feel this way – I'm trying to help him understand how things are made, the values that are going into things and what people are doing to create that feeling,' Mr. Lilly said" (Bowles 2018).

39. Roberts 2018. Data journalist Meredith Broussard calls this "technochauvinism," which she describes as the "belief that tech is always the solution … Somehow, in the past two decades, many of us began to assume that computers get it right and people get it wrong" (Broussard 2018, p. 7–8).

40. See Bridges' (2017) analysis of the "poverty of privacy rights."

41. Edelman 2018.

42. Echoing the concerns of their Silicon Valley counterparts, Brooklyn parents expressed worry about the "wealth of information on each student, from age, ethnicity, and extracurricular activities, to grades, test scores and disciplinary penalties" (Edelman 2018).

43. Baldwin and Kenan 2011, p. 158. See also DuBois (1935) on Whiteness as a "public and psychological wage" for the White working class, Roediger (2007) on the "wages of Whiteness," and Lewis (2004) on "hegemonic Whiteness".

44. See https://www.wired.com/story/algorithms-netflix-tool-for-justice/?BottomRelatedStories_Sections_2.

45. "#OscarsSoWhite also known as Oscars So White or Oscar Whitewash, is a hashtag used to protest the underrepresentation of people of color in the annual Academy Award nominations. The hashtag came into use during the 2015 award cycle, and re-appeared in 2016" (from https://knowyourmeme.com/memes/oscars-so-white).

46. Williams 2015.

47. Sieczkowski 2012.

48. King 2006.

49. Cresci 2015.

50. N-Tech Lab 2015.

51. See https://ntechlab.com.

52. N-Tech Lab 2015; in fact, in April 2018 China made headlines for apprehending a suspect at a concert with nearly 60,000 people in attendance with the help of a similar program; see https://www.washingtonpost.com/news/worldviews/wp/2018/04/13/china-crime-facial-recognition-cameras-catch-suspect-at-concert-with-60000-people.

53. In "The Algorithmic Rise of the 'Alt-Right,' Daniels writes: "There are two strands of conventional wisdom unfolding in popular accounts of the rise of the alt-right. One says that what's really happening can be attributed to a crisis in White identity: the alt-right is simply a manifestation of the angry White male who has status anxiety about his declining social power. Others contend that the alt-right is an unfortunate eddy in the vast ocean of Internet culture. Related to this is the idea that polarization, exacerbated by filter bubbles, has facilitated the spread of Internet memes and fake news promulgated by the alt-right. While the first explanation tends to ignore the influence of the Internet, the second dismisses the importance of White nationalism. I contend that we have to understand both at the same time" (Daniels 2018, p. 61).

54. The term for the specific form of anti-Black racist mysogyny that Black women experience is "mysogynoir" (Bailey and Trudy 2018).

55. Daniels 2017.

56. Thompson 2018a.

57. Wacquant 2005.

58. Taylor 2016.

59. Visit https://www.youtube.com/watch?v=9tucY7Jhhs4.

60. These remarks were made by an audience member at the Data for Black Lives conference at MIT Media Lab in Cambridge, MA on January 12, 2019.

61. Hardy 2016.

62. This turn is what scholars refer to as neoliberalism – "a peculiar form of reason that configures all aspects of existence in economic terms" (Brown 2015, p. 17).

63. Thompson 2018b.

64. I am indebted to legal scholar Patricia Williams for underscoring this point: personal communication, November 9, 2018.

65. Weheliye 2014, p. 3.

66. Wynter 2003.

67. paperson 2017, p. 12.

68. This formulation is inspired by Jarmon 2013.

69. Pasquale 2014, p. 3.

70. Coleman 2009; Chun 2009.

71. Perry (2011, p. 22) writes: "Americans have a long tradition of reconciling inconsistencies between professed values and cultural practices … Therefore, we do not experience cognitive dissonance when such inconsistencies arise; rather, we cultivate explanations that allow them to operate in tandem."

72. Morgan 1975; Smedley 2007.

73. Perry 2018, p. 45.

74. Such care is often articulated in terms of the "precautionary principle" as a way to manage the uncertainties associated with technoscience, though too often it gets limited to questions of ethics and safety rather than extending to issues of politics and democracy. As adrienne maree brown (2017, p. 87) explains, "we have to decentralize our idea of where solutions and decisions happen, where ideas come from."

75. Turan 2009.

76. Moore 2011.

77. See D'Ignazio and Klein (2019) for a discussion of "data feminism" where the focus is not just on gender but on power more broadly.

78. As Toni Cade Bambara (1970, p. 110) famously cautioned in a different context, "[n]ot all speed is movement."

79. Braun 2014.

80. Daly 2014.

81. Daly 2014.

82. Marche 2012.

83. Kurzgesagt 2016.

84. Turse 2016.

85. Ridley 2015.

86. Castells 2009, p. 5.

87. Van Dijk 2006.

88. See Daniels 2013. Daniels also says: "According to the Pew Research Center's Internet & American Life Project … African–Americans and English-speaking Latinos continue to be among the most active users of the mobile web. Cell phone ownership is higher among African Americans and Latinos than among Whites (87 percent versus 80 percent) and minority cell phone owners take advantage of a much greater range of their phones' features compared with white mobile phone users" (2013, p. 698).

89. Everett 2002, p. 133.

90. "Though rarely represented today as full participants in the information technology revolution, Black people are among the earliest adopters and comprise some of the most ardent and innovative users of IT (information technology). It is too often widespread ignorance of African Diasporic people's long history of technology adoption that limits fair and fiscally sound IT investments, policies and opportunities for Black communities locally and globally. Such racially aligned politics of investment create a self-fulfilling-prophesy or circular logic wherein the lack of equitable access to technology in Black communities produces a corresponding lack of technology literacy and competencies" (from http://international.ucla.edu/africa/event/1761, the home page of AfroGEEKS: From Technophobia to Technophilia).

91. Nakamura 2002, pp. 22–3.

92. Nelson 2002, p. 1.

93. Nakamura 2002; 2008.

94. Nelson 2002, p. 1.

95. Noble 2018, p. 5; Browne 2015, p. 7.

96. Browne 2015, pp. 8–9.

97. See Jasanoff (2004, p. 3) for an elaboration on co-production: co-production is a "shorthand for the proposition that the ways in which we know and represent the world (both nature and society) are inseparable from the ways in which we choose to live in it. Knowledge and its material embodiments [e.g. technology] are at once products of social work and constitutive of forms of social life; society cannot function without knowledge any more than knowledge can exist without appropriate social supports. Scientific knowledge, in particular, is not a transcendent mirror of reality. It both embeds and is embedded in social practices, identities, norms, conventions, discourses, instruments and institutions – in short, in all the building blocks of what we term the *social*. The same can be said even more forcefully of technology" (p. 3).

98. I am inspired here by paperson's (2017, p. 5) discussion of "hotwiring" settler colonial technologies: "Instead of settler colonialism as an ideology, or as history, you might consider settler colonialism as a set of technologies – a frame that could help you to forecast colonial next operations and to plot decolonial directions … Technologies mutate, and so do these relationships."

99. Samatar 2015; I am indebted to Fatima Siwaju, whose question about methodology during the 2018 African American Studies Faculty-Graduate Seminar prompted me to elaborate my thinking here.

100. Jackson 2013, p. 16.

101. Jackson 2013, p. 14.

102. Jackson 2013, p. 153.

103. The concept "imperialist White supremacist capitalist patriarchy" was coined by bell hooks (2015); it was intended to pick out the interlocking systems of domination also theorized by Crenshaw (1991) and Collins (1990).