unbiased, warning that, "if we build an intelligent system that learns enough about the properties of language to be able to understand and produce it, in the process it will also acquire historic cultural associations, some of which can be objectionable. Already, popular online translation systems incorporate some of the biases we study . . . Further concerns may arise as AI is given agency in our society."[44] And, as we shall see in the following chapters, the practice of codifying existing social prejudices into a technical system is even harder to detect when the stated purpose of a particular technology is to override human prejudice.

3

Coded Exposure

Is Visibility a Trap?

I think my Blackness is interfering with the computer's ability to follow me.

Webcam user[1]

EXPOSURE

- the amount of light per unit area
- the disclosure of something secret
- the condition of being unprotected
- the condition of being at risk of financial loss
- the condition of being presented to view or made known.[2]

In the short-lived TV sitcom *Better off Ted*, the writers parody the phenomena of biased technology in an episode titled "Racial Sensitivity." This episode presents the corporation where the show takes place installing a "new state of the art system that's gonna save money," but employees soon find there is a "glitch in the system that keeps it from recognizing people with dark skin."[3] When the show's protagonist confronts

his boss, suggesting the sensors are racist, she insists otherwise:

> The company's position is that it's actually the opposite of racist because it's not targeting black people, it's just ignoring them. They insist that the worst people can call it is indifferent . . . In the meantime, they'd like to remind everyone to celebrate the fact that it does see Hispanics, Asians, Pacific Islanders, and Jews.[4]

The show brilliantly depicts how the default Whiteness of tech development, a superficial corporate diversity ethos, and the prioritization of efficiency over equity work together to ensure that innovation produces social containment.[5] The fact that Black employees are unable to use the elevators, doors, and water fountains or turn the lights on is treated as a minor inconvenience in service to a greater good. The absurdity goes further when, rather than removing the sensors, the company "blithely installs separate, manually operated drinking fountains for the convenience of the black employees,"[6] an incisive illustration of the New Jim Code wherein tech advancement, posed as a solution, conjures a prior racial regime in the form of separate water fountains.

Eventually the company sees the error of its ways and decides to hire minimum-wage-earning White employees to follow Black employees around the building, so that the sensors will activate. But then the legal team determines that, for each new White worker, they must hire an equal number of Black workers, and on and on, in a spiraling quota that ends when the firm finally decides to reinstall the old sensors.

Playing off of the political anxieties around reverse discrimination and affirmative action, the episode title

"Racial Sensitivity" – a formula that usually designates a charge brought against Black people who call attention to racism – is a commentary on the company's insensitivity and on the absurdity of its fixes. The writers seem to be telling us that more, not less, sensitivity is the solution to the technological and institutional dilemma of coded inequity. The episode also manages to illustrate how indifference to Blackness can be profitable within the logic of racial capitalism until the social costs become too high to maintain.[7]

Multiply Exposed

Some technologies fail to see Blackness, while others render Black people hypervisible and expose them to systems of racial surveillance.[8] Exposure, in this sense, takes on multiple meanings.[9] Exposing film is a delicate process – artful, scientific, and entangled in forms of social and political vulnerability and risk. Who is seen and under what terms holds a mirror onto more far-reaching forms of power and inequality. Far from being neutral or simply aesthetic, images have been one of the primary weapons in reinforcing and opposing social oppression. From the development of photography in the Victorian era to the image-filtering techniques in social media apps today, visual technologies and racial taxonomies fashion each other.[10]

Photography was developed as a tool to capture visually and classify human difference; it also helped to construct and solidify existing technologies, namely the ideas of race and assertions of empire, which required visual evidence of stratified difference.[11] Unlike older

school images, such as the paintings and engravings of exotic "others" that circulated widely before the Victorian period, photographs held an allure of objectivity, a sense that such images "were free from the bias of human imagination . . . a neutral reflection of the world."[12] Yet such reflections were fabricated according to the demands and desires of those who exercised power and control over others. Some photographs were staged, of course, to reflect White supremacist desires and anxieties. But race as a means of sorting people into groups on the basis of their presumed inferiority and superiority was staged in and of itself, long before becoming the object of photography.

What of the modern photographic industry? Is it more democratic and value-neutral than image was in previous eras? With the invention of color photography, the positive bias toward lighter skin tones was built into visual technologies and "presented to the public as neutral." Neutrality comes in the idea that "physics is physics," even though the very techniques of color-balancing an image reinforce a dominant White ideal.[13] And when it comes to the latest digital techniques, social and political factors continue to fashion computer-generated images. In this visual economy, race is not only digitized but heightened and accorded greater value.

This chapter traces the complex processes involved in "exposing" race in and through technology and the implications of presenting partial and distorted visions as neutral and universal. Linking historical precedents with contemporary techniques, the different forms of "exposure" noted in the epigraph serve as a touchstone for considering how the act of viewing something or someone may put the object of vision at risk. This kind

of scopic vulnerability is central to the experience of being racialized.

In many ways, philosopher and psychiatrist Frantz Fanon's classic text *Black Skin, White Masks* is a meditation on scopic vulnerability. He describes the experience of being looked at, but not truly seen, by a White child on the streets of Paris:

> "Look, a Negro!"
> It was an external stimulus that flicked over me as I passed by.
> I made a tight smile.
> "Look, a Negro!" It was true. It amused me.
> "Look, a Negro!" The circle was drawing a bit tighter. I made no secret of my amusement.
> "Mama, see the Negro! I'm frightened!" Frightened! Frightened! Now they were beginning to be afraid of me. I made up my mind to laugh myself to tears, but laughter had become impossible.

This story reveals to us that a key feature of Black life in racist societies is the constant threat of exposure and of being misread; and that being exposed is also a process of enclosure, a form of suffocating social constriction.

In a beautiful essay titled "Skin Feeling," literary scholar Sofia Samatar reminds us: "The invisibility of a person is also the visibility of a race . . . to be constantly exposed as something you are not."[14] Yet, in the distorted funhouse reflection of racist conditioning, the White children are the ones who fancy themselves as being at risk. Fanon's experience on the streets of Paris foreshadows the technologically mediated forms of exposure that proliferate Black life today. Whether we are talking about the widespread surveillance systems built into urban

landscapes or the green light sitting above your laptop screen, detection and recognition are easily conflated when the default settings are distorted by racist logics.[15]

Finally, as it circulates in the domain of finance, the term "exposure" quantifies how much one stands to lose in an investment. If, as legal scholar Cheryl I. Harris argues, Whiteness is a form of property and if there is a "possessive investment in whiteness" (as sociologist George Lipsitz describes it), then visual technologies offer a site where we can examine how the value of Whiteness is underwritten through multiple forms of exposure by which racialized others are forcibly and fictitiously observed but not seen. That said, photography has also been a powerful tool to invest in Blackness. Take cultural studies scholar and media activist Yaba Blay's work on the social, psychic, and public health harms associated with skin bleaching. In addition to scholarly analysis, she created a media campaign called Pretty.Period, which counters the faux compliment that dark-skinned women must routinely endure: "you're pretty *for a dark-skinned girl.*" By exposing the gendered racism coded in the qualifier, Blay responds "*No*, we're pretty PERIOD."[16] The campaign has produced an expansive archive with thousands of striking images of dark-skinned women of all ages across the African diaspora whose beauty is not up for debate. Period.

But divesting away from Whiteness in this way too often requires investing in ableist notions of gender, beauty, sexuality, and desire. In her talk "Moving toward the Ugly: A Politic beyond Desirability," Mia Mingus recognizes "the brilliance in our instinct to move toward beauty and desirability," but she also wrestles with the way in which "the generational effects

of global capitalism, genocide, violence, oppression, and trauma settle into our bodies." She calls for a

> shift from a politic of desirability and beauty to a politic of ugly and magnificence . . . The magnificence of a body that shakes, spills out, takes up space, needs help, moseys, slinks, limps, drools, rocks, curls over on itself . . . The magnificence of bodies that have been coded, not just undesirable and ugly, but un-human . . . Moving beyond a politic of desirability to loving the ugly. Respecting Ugly for how it has shaped us and been exiled. Seeing its power and magic, seeing the reasons it has been feared. Seeing it for what it is: some of our greatest strength. Because we all do it. We all run from ugly.[17]

Mingus' intervention exposes the interlocking effects of racism, ableism, capitalism, heterosexism, and more. A multiple exposure that, like the ghost images that appear on photographs, haunts our discussion of race and technology. Like Blay, Mingus is not only an observer. She reminds us that those who are multiply exposed also engage in liberatory forms of scopic resistance and recoding: dark-skinned :: beautiful *and* ugly :: magnificent.

Exposing Whiteness

The most concrete technique through which Whiteness has fashioned photography is the Shirley Cards produced by Kodak from the 1950 to 1990s (see Figure 3.1). The cards were an integral part of film exposure methods and used the image of a White woman to standardize the exposure process. Since the model's skin was set as

Figure 3.1 Shirley Card
Source: Kodak Color Dataguide, 1976

the norm, darker skinned people in photographs would be routinely underexposed. In short, skin tone biases were embedded in the "actual apparatuses of visual reproduction."[18] As one photographer recently put it, "It turns out, film stock's failures to capture dark skin aren't a technical issue, they're a choice."[19] This also implies we can choose otherwise.

Photographers developed a range of "fixes" for underexposure in order to calibrate the color; for instance they could add more lighting to darker subjects. But these only worked for images containing a single variation. If more than one skin tone were represented in an image, such fixes were harder to employ.

At least three social shifts propelled more fundamental changes to this form of discriminatory design. As public schools in the United States began desegregating and students of different skin tones were photographed for yearbooks in the same frame, the technical fixes that could be employed when a Black child was photographed alone were not useful. In particular, Black parents, objecting to the fact

that their children's facial features were rendered blurry, demanded higher-quality images.[20] But the photographic industry did not fully take notice until companies that manufactured brown products like chocolate and wooden furniture began complaining that photographs did not depict their goods with enough subtlety, showcasing the varieties of chocolate and of grains in wood.

Finally, as US-based visual technologies circulated in non-European countries, the bias toward lighter skin tones grew ever more apparent. Competition in Asian markets propelled Kodak to follow Fuji in "ethnicizing" Shirley Cards (Figure 3.2). Kodak continued research

Figure 3.2 Diverse Shirley
Source: Kodak multiracial Shirley card, 1996

on skin tone preferences in different countries. Roth describes a resultant "geography of emulsions," in which "film inventory is batched by region and distributed" according to the skin color biases of the various parts of the world.[21] The market and profitability imperative of tailoring technologies to different populations is an ongoing driver of innovation.

But the hegemony of Whiteness is exposed not only in the context of the global competition to capture different regional markets. It is also exposed through practices that are more explicitly political. In South Africa, for example, Polaroid's ID2 camera, with its added flash "boost button," was used to better capture Black citizens' images for the infamous passbooks that violently restricted the movement of Black people throughout the country.

Polaroid's profit from South African apartheid spurred widespread protest against the company. The protest was led by the Polaroid Revolutionary Workers' Movement, which was founded by several African American employees in the United States, most notably photographer Ken Williams and chemist Caroline Hunter. The Workers' Movement "pointed out that part of Polaroid's profit in South Africa was earned from the sale of photo-identification units" that were used

> to photograph Black South Africans for the much hated "reference" books or "passbooks," which control the movements of Blacks into urban areas in the Republic of South Africa. If a Black is without one of these documents he is subject to imprisonment, a fine, or deportation from the urban area in which he was found.[22]

One of the flyers that the Workers' Movement posted around the office summed up the problem: "Polaroid Imprisons Black People in 60 Seconds."[23]

After initial protests, Polaroid experimented with ways to improve the conditions of its Black South-African workers, but activists deemed the reforms inadequate and continued pressuring the company over a seven-year period, until finally Polaroid pulled out of South Africa completely. This move, in turn, propelled the broader movement for boycott, divestment, and sanctions throughout the 1980s, which prompted other companies to withdraw from South Africa too.[24] In short, the use of visual technologies "in systems set up to classify people is an important aspect of the history of photography,"[25] one that connects the design of technology and social policy.

Aiming to expose the Whiteness of photo technologies, London-based artists Adam Broomberg and Oliver Chanarin used decades-old film and Polaroid's ID-2 camera, which were the ones used for passbooks, to take pictures across South Africa for a month (see Figure 3.3).

Their exhibit, "To Photograph the Details of a Dark Horse in Low Light" (a line taken from a Kodak statement touting the ability of Kodak film to depict dark skin accurately), aims to explore "the radical notion that prejudice might be inherent in the medium of photography itself." Here the artists echo an assertion made by photographer Jean-Luc Godard who, in 1977, was invited on an assignment to Mozambique but refused to use Kodak film, saying that it was inherently "racist." According to Broomberg, the light range was so narrow that, "if you exposed film for a white kid, the black kid sitting next to him would be rendered invisible except

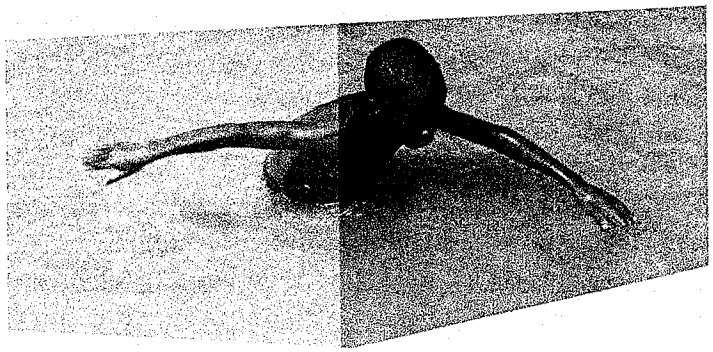

Figure 3.3 Strip Test 7
Source: "To Photograph the Details of a Dark Horse in Low Light," Broomberg and Chanarin, 2012

for the whites of his eyes and teeth."[26] You might be thinking, *surely* this is no longer an issue.

In 2009, Hewlett Packard's MediaSmart webcam demonstrated how the camera would pan to follow a White face but would stop when individuals with dark skin entered the frame.[27] The issue, according to HP, was that "the software has difficulty recognizing facial features in lower light levels."[28] *What are we to make of such enduring invisibility?* That new tools are coded in old biases is surprising only if we equate technological innovation with social progress. The popular trope that technology is always one step ahead of society is not only misleading but incorrect, when viewed through the lens of enduring invisibility.

Just as Polaroid, Kodak, and others attempted to design differently so that their cameras could vividly represent a broader spectrum of skin tones, so too companies that manufacture digital cameras today are working to address bias in the design and marketing

of their products. In developing smartphones for sub-Saharan Africa, China's Tecno Mobile made it a point to emphasize the quality of images for Black customers:

> In one such ad, a wide screen smartphone is shown on a black page with the image of a black woman showing on the screen. The words "capture the beauty of darkness" are written in bold beneath the image, followed by the line "The phone is powered for low-light shooting." The ad labels the phone, "Camon C8," as a solution for a commonly held frustration with mobile phone cameras that render poor quality photos of dark-skinned subjects in low-light settings.[29]

In the United States, the default settings of photo technologies, both past and present, tend to cater to lighter-skinned subjects. This is not simply a benign reflection of designers' or technicians' unexamined biases, nor is it an inevitable result of technological development, as China's Tecno Mobile demonstrates. In the next section we observe how visual technologies expose Whiteness and regularly reinforce racist visions, although the way such images circulate and gain meaning is not always a direct reflection of their initial settings.

Exposing Difference

In her study of colonial-era photography, visual anthropologist Deborah Poole argues that we must not assume a singular interpretation of the relationship between images and society, one that looks for an all-encompassing "gaze" to exercise domination and control. Rather it is important to investigate the social nature of vision, because, once "unleashed in society, an

image can acquire myriad interpretations or meanings according to the different codes and referents brought to it by its diverse viewers."[30] In examining the complex coding of racial desire and derision, Poole's insights remind us that domination and surveillance typically go hand in hand with "the pleasure of looking." The seeming adoration poured on racialized others via visual technologies, however, does not in itself signal a decline in racism and domination.

The desire to see others in a derogatory or in an exotic light, just as much as the practice of invisibilizing them, reproduces long-standing forms of authority and hierarchy. When it comes to representing racialized others, the interplay between desire and derision, longing and loathing can get lost in the strict focus on how visual technologies fail to see darker-skinned people.[31] We can overlook the technology – racism – that precedes technological innovations.

In 2015 Google Photo came under fire because its auto-labeling software tagged two Black friends as "gorillas"[32] – a racist depiction that goes back for centuries, being formalized through scientific racism and through the association of Black people with simians in the Great Chain of Being. It found its modern incarnation in cartoons of former First Lady Michelle Obama and in Roseanne Barr's aforementioned racist tweets against Valerie Jarrett and was resuscitated in algorithms that codify representations used for generations to denigrate people of African descent. This form of machine bias extends beyond racialized labels, to the very exercise of racist judgments, as the beauty contest described in Chapter 1 made clear.

Similarly, in his examination of video game avatars,

computer scientist and artist D. Fox Harrell found that, when he attempted to make an African-inspired avatar that looked like him, it "was automatically made less intelligent." He explains:

> Prejudice, bias, stereotyping, and stigma are built not only into many games, but other forms of identity representations in social networks, virtual worlds, and more. These have real world effects on how we see ourselves and each other. Even in systems that have very open identity creation options, like Second Life, there are still different valuations for skins, social groups and categories being formed.[33]

The impact of having seemingly "racist robots" as judges in beauty contests and as players in video games may seem trivial, but similar biases are built into the technological systems used by police, where they have more lethal consequences.

In social theorist Michel Foucault's classic formulation, "visibility is a trap." Foucault explained how power is exercised through techniques of surveillance in which people are constantly watched and disciplined, "the object of information, never a subject of communication." The *less obvious* the mechanism, the *more powerful* the disciplinary function of surveillance. It is tempting to point to the smart recording devices we carry around in our pockets and exclaim that "we are all caught inside the digital dragnet!" But, the fact is, we do not all experience the dangers of exposure in equal measure. Consider the "If you *see* something, *say* something" signs that litter public spaces, the brigade of White women reporting Black people to the police, the broken windows policies that license law enforcement

to discipline small infractions like vandalism and toll-jumping, allegedly in order to deter and prevent larger crimes, and police body cameras that supposedly capture what "really" happened when an officer harasses or kills someone: clearly people are exposed differently to the dangers of surveillance.

In the most comprehensive study of its kind, a group of researchers at Georgetown Law School obtained over 10,000 pages of information from more than 100 police departments across the country, to examine how the use of facial recognition software impacts different communities. They found that "[t]he databases they use are disproportionately African American, and the software is especially bad at recognizing Black faces, according to several studies."[34] What's more, the different global settings in which AI is taught to "see" impacts the technical settings designed to identify individuals from various groups. It turns out that algorithms "developed in China, Japan, and South Korea recognized East Asian faces far more readily than Caucasians. The reverse was true for algorithms developed in France, Germany, and the United States, which were significantly better at recognizing Caucasian facial characteristics."[35] This suggests that the political–geographic setting augments the default setting of Whiteness. The ethnoracial makeup of the software design team, the test photo databases, and the larger population of users influence the algorithms' capacity for recognition, though not in any straightforward sense.

For instance, when it comes to datasets, a 2012 study found that an algorithm trained "exclusively on either African American or Caucasian faces recognized members of the race in its training set more readily than members of

any other race."[36] Scholars at Georgetown University's Center on Privacy and Technology point out that the disparities in facial recognition across racial groups may be introduced "at a number of points in the process of designing and deploying a facial recognition system":

> The engineer that develops an algorithm may program it to focus on facial features that are more easily distinguishable in some race than in others – the shape of a person's eyes, the width of the nose, the size of the mouth or chin. This decision, in turn, might be based on preexisting biological research about face identification and past practices which themselves may contain bias. Or the engineer may rely on his or her own experience in distinguishing between faces – a process that is influenced by the engineer's own race.[37]

Now consider that these software programs are used by police departments all over the country; in those departments "digital eyes watch the public," comparing individual faces in real time to "hot lists" that are filled disproportionately with Black people – and these also happen to be the least recognizable figures in the world of facial recognition software.

The humor in the much circulated HP MediaSmart video of the Black user quoted in this chapter's epigraph saying "I think my blackness is interfering with the computer's ability to follow me" turns deadly in the context of digitally mediated police profiling, where suspects are caught in the crosshairs of being seen too much via surveillance practices and not enough via software; one's own body is called upon to testify against itself. Guilty, guilty, guilty. The life sciences, in turn, are routinely used to arbitrate guilt.[38]

Exposing Science

In the documentary film *DNA Dreams*, viewers are taken inside of "the world's largest genomics organization," which is based in Shenzen, China. Thousands of scientists are working there to uncover the genetics of intelligence (among other traits). In a scene haunted by the famous words of Martin Luther King, Jr., the chair of the institute is shown speaking to a packed and spellbound audience: "I have a dream. We have a dream. That we are going to sequence every living thing on Earth, that we are going to sequence everyone in the world." Until then, the institute was studying the DNA of 2,000 people considered highly intelligent in order to isolate the alleles that supposedly made them smart. If this sounds like something human beings have tried before, it is because the desire to propagate "good genes" was the basis of a popular, "progressive," but ultimately deadly movement called eugenics.

Negative eugenics, discouraging the reproduction of those whom society deems "unfit," is what most people associate with the practice, because it led to widespread sterilization programs in which US scientists inspired Nazi doctors to scale up this practice to the point of genocide. The popularity of eugenics gained steam following the 1927 Supreme Court decision in *Buck v. Bell* – a decision to uphold the involuntary sterilization of those deemed intellectually disabled: "It is better for all the world, if instead of waiting to execute degenerate offspring for crime, or to let them starve for their imbecility, society can prevent those who are manifestly unfit from continuing their kind." We see how the law

becomes an instrument for perpetuating deeply discriminatory practices under the guise of reason, neutrality, and social betterment for "all the world." Negative eugenic practices such as prison sterilization are still with us; as recently as in 2013, doctors in California prisons were coercing women to undergo sterilization, and in 2017 a Tennessee judge offered shorter sentences if prisoners agreed to sterilization.[39] "Positive" eugenics, on the other hand, encourages the reproduction of populations that society already values. State fairs would host "fitter family contests" and people would submit their kids to measurements and tests, in the hope of receiving a eugenics certificate as part of the festivities.

Despite obvious links to a previous era of eugenics justified on scientific grounds, the scientists in *DNA Dreams* disavow the connection. In a scene that depicts some of the key players eating dinner and discussing how their research could allow parents to screen embryos and choose the one that will become the smartest, one of them argues: "This isn't even positive eugenics that we're taking about, we're not encouraging smart people to have kids, we're encouraging everyone who has kids to have the best kids they possibly could have."[40] The dream they are selling is what we might call Equal Opportunity Eugenics.

The fact that we may all, ultimately, be able to access the tools of eugenic selection does not make such processes less eugenic. It just means that the intertwining projects of racism and ableism are all-encompassing.[41] This is yet another example of how those who design the world according to their own values and biases are employing the rhetoric of "inclusion" as progressive veneer for deeply discriminatory practices. This goes

much deeper than a marketing scheme and takes us well beyond one institute in China. The fact is, despite its bad Nazi press, under one description or another eugenics has typically been espoused by those in the United States and Europe who consider themselves social progressives.

A story by Kathryn Paige Harden titled "Why Progressives Should Embrace the Genetics of Education," recently published in the *New York Times* (July 24, 2018), reported on a massive US-based study and implored those who "value social justice" to harness the genomic revolution. In a savvy slippage between genetic and environmental factors that would make the founders of eugenics proud, the author asserts that "knowing which genes are associated with educational success will help scientists understand how different environments also affect that success." But, as many critics have pointed out since, the problem is not a lack of knowledge![42] One observer put it best: "I cannot imagine a subject on which we know more about than the environments under which children learn best. It has been the subject of study and discussion for well more than a century. Are we suddenly unsure that poverty has a negative effect on educational attainment?"[43]

It is not the facts that elude us, but a fierce commitment to justice that would make us distribute resources so that all students have access to a good educational environment. Demanding more data on subjects that we already know much about is, in my estimation, a perversion of knowledge. The *datafication of injustice* . . . in which the hunt for more and more data is a barrier to acting on what we already know. We need something like an academic equivalent of "I said what I said!"

– the catchphrase of reality TV star NeNe Leakes – for those who insist on digging deeper and deeper into the genome for scientific solutions to social problems.

The desire to sort good and bad human traits, encouraging the former and discouraging the latter, is also animated by a belief that humans can be designed better than they currently are. Correction: a belief that more humans can be like those already deemed superior. But in all this one forgets to question who was granted authority to make these value judgments in the first place. Genetic discrimination, in turn, does not just describe what prospective parents have to do if they decide to select supposedly smart fetuses over their average siblings. Discriminatory design happens much earlier in the process, in the decisions that researchers make as to what behaviors to categorize as intelligent in the first place. As philosopher Ian Hacking (2006) put it in "Making Up People," when we identify which people to control, help, change, or emulate as "geniuses," methods of classification change those who [*sic*] scientists set out to study.[44] And not just change them, but actually create and re-create kinds of people in the process of naming and studying, which becomes a materialization of the scientific imagination.

Another contributor to this process is the decision to ignore the great impact of environmental factors on complex human traits such as intelligence, and the fact that a full "98% of all variation in educational attainment is accounted for by factors other than a person's simple genetic makeup."[45] Like those Beauty AI app designers who seemed to think that there was some universal standard of beauty against which all of humanity could be judged and who expressed surprise when

the algorithms they trained showed an overwhelming preference for White contestants, those who hunt for the genetic basis of IQ have already accepted dominant standards of intelligence, starting with their selection of the 2,000 individuals deemed smart enough to be studied. And, given the powerful bioinformatic tools at their disposal, they may very well identify shared alleles in their sample, finding evidence for what they seek without questioning the basic premise to begin with.

In this way *DNA Dreams* brings to life the dystopian nightmare we encounter in the 1997 film *Gattaca*, in which the main character Vincent, played by Ethan Hawke, narrates: "I belonged to a new underclass, no longer determined by social status or the color of your skin. No, we have discrimination down to a science."[46] As in so much science fiction, the Whiteness of the main protagonist is telling. Not only does it deflect attention away from the fact that, in the present, many people already live a version of the dystopia represented in the film in future tense. The "unbearable Whiteness" of sci-fi expresses itself in the anxiety underlying so many dystopian visions that, if we keep going down this road, "We're next."[47] Whether it's Keanu Reeves in *The Matrix*, Matt Damon in *Elysium*, Chris Evans in *Snowpiercer* – all characters whose Whiteness, maleness, straightness, and (let's just admit) cuteness would land them at the top of the present social order – they all find themselves in a fictional future among the downtrodden. Viewers, in turn, are compelled to identify with the future oppression of subordinated White people without necessarily feeling concern for the "old" underclasses in our midst. So, while *DNA Dreams* sits in the shadow of *Gattaca*, *Gattaca*-like representations can overshadow the everyday theft of opportunity,

stratified as it is by race and justified by eugenic-like judgments about the value of different human lives.

So, lest we assume that eugenics simply faded away with the passing of laws and the rise of bioethics, its ideology persists in many areas of life well beyond the field of genomics; it endures, namely, in how lives of White and wealthy people continue to be valued over others. Reproduction, in turn, is not simply about the act of procreation but about access to the full range of symbolic and material goods (things like respect and dignity, quality healthcare, and education) that affirm life.[48] In that way, the Movement for Black Lives is implicitly an *anti-eugenics* movement. The aim is not just to stop premature deaths that result from police violence but to foster economic, social, and political power and resources that will sustain Black life more broadly.[49] Fostering life, in turn, requires reckoning with the multiple ways science and technology can expose people to death – from Dr. J. Marion Sims' experiments carried out on unanaesthetized enslaved women and designed to hone gynecological techniques, to then President Barack Obama's 563 drone strikes that killed hundreds. We have good reason to be skeptical of the way tech cheerleaders feign innocence when it comes to the racial dimensions of these harms.

In 2016, the *20/20* television show on ABC released an image of a suspect in the murder of a woman in Chapel Hill, North Carolina. The image was created by the company Parabon NanoLabs, which charges $3,600 to analyze a sample and to produce a composite sketch using technology funded by the Department of Defense. The director of bioinformatics at Parabon NanoLabs explained: "It's not meant to be a driver's license

photograph. It's really intended for lead generation, for prioritizing the suspect list. The people who match go to the top."[50]

In this case, the image depicted a "Latino man, with likely olive skin, brown or hazel eyes and black hair . . . He is shown at age 25 years old and a typical body mass index of 22, which are default settings when the company does not have that information."[51] But, as Pamela Sankar insists, ancestry-informative markers (AIMS) are "associated probabilistically with a population, not predictably with an individual."[52] Yet, Parabon said it was 85.7 percent confident about the suspect's skin shade and 93.8 percent confident about his eye color; so essentially this is a high-tech form of racial profiling that exemplifies the New Jim Code.

The gradual incorporation of forensic DNA phenotyping or "genetic fingerprinting" in police work draws together concerns about biased databases and racialized predictions.[53] Unlike the more common form of genetic testing, in which DNA is used to confirm or rule out the identity of an individual suspect, phenotyping is a predictive technology. And unlike an artist's sketch that relies on the memory of an eye witness, trace evidence at a crime scene is used by officers to produce a computer-generated image. The image is created by comparing the crime scene sample and particular points in the genome (i.e. AIMS) to samples in an existing database, in order to predict the appearance of a suspect.[54]

But the relationship between genes and facial variation is not at all clear. Nevertheless a number of companies sell this service to law enforcement, even as experts question the accuracy of the technology. In a *New York Times* article titled "Building a Face, and

a Case, on DNA," Benedikt Hallgrimsson, head of the Department of Cell Biology and Anatomy, who studies the development of faces at University of Calgary, cautions: "A bit of science fiction at this point." His article conjures a dystopian reality, if such techniques are used to insulate existing forms of racial profiling from charges of bias. And, as Foucault reminds us, "the guilty person is only one of the targets of punishment. For punishment is directed above all at others, at all the *potentially* guilty."[55]

Even before the algorithmic predictions we have today, predictive guilt has been a cornerstone of police work. In the Supreme Court's decision in the case of *Terry v. Ohio* (1968), the court ruled that "a police officer may stop a suspect on the street and frisk him or her *without* probable cause to arrest, if the police officer has a *reasonable suspicion* that the person has committed, is committing, *or is about to* commit a crime and has a reasonable belief that the person 'may be armed and presently dangerous.'"[56] A 2010 report titled Platform for Prejudice explains that the Nationwide Suspicious Activity Reporting Initiative "reflects the new philosophy called Intelligence-Led Policing. The term itself is misleading. Pre-Emptive Policing, the more accurate term, emphasizes surveillance and seizures of individuals *before* a criminal 'predicate' exists." While some, including the authors of this report, may note that pre-emptive policing is hardly "compatible with American Constitutional principles such as the presumption of innocence and the warrant requirement," we can also consider how, as Simone Browne has shown, the practice *is* consistent with the long history of racial surveillance endured by Black people.[57]

Forensic DNA phenotyping, in turn, gives officers license to suspect anyone who fits the generic description of the image. As Stanford bioethicist Pamela Sankar cautions, "[i]t seems possible that instead of making suspect searches more exact, the vagueness of FDP descriptions might make them more vulnerable to stereotyping. Of course, the same might be said of most descriptions the police are handed when it comes to certain suspects. Other descriptions, however, are not based on genetics."[58] That is, when the bias is routed through technoscience and coded "scientific" and "objective," a key feature of the New Jim Code, it becomes even more difficult to challenge it and to hold individuals and institutions accountable.

And yet, as Britt Rusert so poignantly chronicles in *Fugitive Science: Empiricism and Freedom in Early African American Culture*, Black scientists, scholars, and artists have resisted and subverted racist science at every turn. Their radical empiricism takes special issue with the visual dimensions of scientific racism, producing a counterarchive that offers "competing visual evidence" of Black humanity and sociality and refuting the derogatory images of scientific writings and the popular press alike. Drawing upon Shawn Michelle Smith's discussion of the "scopic regime" that supported scientific racism, Rusert demonstrates that "[t]he ground of the visual became a key site upon which African Americans waged their battle against racist science, print, and popular culture in the 1830s and 1840s."[59] And the battle still rages!

Racial representations engineered through algorithmic codes should be understood as part of a much longer visual archive. The proliferation of digitized

racial visions, from HP's blurry blackness to Google's gorilla tags, is also an occasion for the creation of subversive countercodings. After it was revealed that the Miami Police Department used images of Black men for target practice, a movement of clergy and other activists initiated the hashtag #UseMeInstead circulating their own, predominantly White photos. In another form of subversive visualization, activists called out the way media outlets circulate unflattering photos of Black youths murdered by police or White vigilantes. They used the hashtag #IfTheyGunnedMeDown and asked the question "Which one would they use?" with dueling photos of themselves looking stereotypically "thuggish" (e.g. not smiling, wearing a hoodie, throwing up hand signs, smoking, or holding alcohol) and "respectable" (e.g. smiling, wearing a graduation gown or suit, playing with a baby, or wearing a military uniform).

Whether owing to the overrepresentation of Black people in TV news reports of criminal suspects or to the decision of media outlets to use more "thuggish" photos when reporting on Black victims, racism runs all the way through the visual representation of crime and victimization.[60] Style, comportment, and context become the codes through which mass audiences are hailed in the Fanonian sense of "Look, a Negro!" But, through social media technologies, the hashtag phenomenon allows people to decode and recode these mediated hails astutely and collectively,[61] demonstrating how popular representations criminalize Black victims of state-sanctioned violence and revealing, through visual performance, how racialized distortions continue apace, even when they have no explicit mentions of race to rely on.

Exposing Privacy

Fanon's (2008) *Black Skin, White Masks* reverberates through the work of MIT Media Lab researcher Joy Buolamwini, who discovered that the facial recognition technology with which she was working could detect the contours of her face only when she put on a White mask. This is what she calls the "coded gaze." Buolamwini established the Algorithmic Justice League as part of her quest for "full spectrum inclusion," to counter the bias she experienced.[62] She asks: "If we do not improve the systems and they continue to be used, what are the implications of having innocent people identified as criminal suspects?"

While inclusion and accuracy are worthy goals in the abstract, given the encoding of long-standing racism in discriminatory design, what does it mean to be included, and hence more accurately identifiable, in an unjust set of social relations? Innocence and criminality are not objective states of being that can be detected by an algorithm but are *created* through the interaction of institutions and individuals against the backdrop of a deeply racialized history, in which Blackness is coded as a criminal. Inclusion in this context is more akin to possession, as in Fanon's plea that the "tool never possess the man," where possession alerts us to the way freedom is constrained.

Consider a population-wide facial recognition program in which the Zimbabwean government has contracted a China-based company to track millions of Zimbabwean citizens in order to make the Chinese database more comprehensive by "more clearly identify[ing] different

ethnicities." The benefit for Zimbabwe is access to a suite of technologies that can be used by law enforcement and other public agencies, while positioning China to become "the world leader in artificial intelligence."[63] *Transnational algorithmic diversity training par excellence*! Perhaps. Or, better, neocolonial extraction for the digital age in which the people whose faces populate the database have no rights vis-à-vis the data or systems that are built with their biometric input. Not only that. Since the biggest application of facial recognition is in the context of law enforcement and immigration control, Zimbabwe is helping Chinese officials to become more adept at criminalizing Black people within China and across the African diaspora.

Racist structures do not only marginalize but also forcibly center and surveil racialized groups that are "trapped between regimes of invisibility and spectacular hypervisibility,"[64] threatened by inclusion in science and technology as objects of inquiry. Inclusion is no straightforward good but is often a form of unwanted exposure. Jasmine Nichole Cobb's insight that "invisibility is . . . part of the social condition of blackness in modernity as well as an important representational tactic for people of African descent" – what Rusert describes as that "dialectic of calculated visibility and strategic invisibility" – is relevant to countering the New Jim Code.[65]

The figure of Saartjie ("Sara") Baartman illustrates the violent underside of being forcibly seen. Baartman, who was taken from South Africa to Europe in 1810, was publicly displayed for large audiences in London and Paris, photographed, studied, and eventually dissected in death by the leading scientist of the time, Georges

Cuvier, and her skeleton, brain, and genitals were subsequently put on display until 1974. Baartman's horrific exposure in life and death illustrates the connection between visual and scientific technologies. While many people have heard some version of her story in scholarly texts and popular works, few know of Baartman's eventual repatriation to and burial in South Africa in 2002, through which the evidentiary politics surrounding her identity came to a climax. The protracted negotiations between South Africa and France for the return of Baartman's remains – her skeleton, brain, and genitals – were stalled by French claims that the remains had been lost and could not be identified among the museum's holdings. Consider that "Baartman was one of thousands from Europe's former colonial territories whose remains had been gathered in metropolitan museums." In 2002, "once the French government [finally] agreed to return them, a dispute arose about the veracity of the physical remains offered by the French."[66]

Despite this, the South African committee that negotiated her return declined to have the remains tested to verify whether they belonged to Baartman, or even whether the three sets of remains belonged to the same person. For the committee, to do so would amount to a replication of the violation, repeating once again the "great long insult" to which Baartman had been subjected during her life. Instead, on August 9, 2002, Baartman was given a ceremonial burial in Hankey, South Africa, near the place where she was born. This decision of not exposing Baartman's remains to scrutiny yet again was the South African committee's assertion and attempt to define a way of knowing differently, whereby it decided to accept without further DNA

testing that the remains offered by France belonged to Baartman. This signaled an end to the invasive visibility to which Baartman was subjected during her lifetime and for 159 years after her death.

In "Baartman and the Private: How Can We Look at a Figure That Has Been Looked at Too Much," South African gender studies scholar Gabeba Baderoon explains how "dominated peoples have long crafted a way to exist and keep their histories outside of conventional archives." The politics of knowledge, in other words, is deeply entangled in a politics of the private and in who gets to lay claim to privacy and subjectivity. The assertion of "privacy" in this context is not the same as *privatizing* – an economic calculation "outside history," made for the purpose of maximizing profits; rather, in Baderoon's theory of the private, it draws attention to the "intimate, personal, closed, hidden, *coded*, secret, veiled, unknown, the apparently meaningless, the invisible, the ordinary, the in-between, the silent . . . the underside . . . unofficial . . . unpredictable, and unreliable in dominant views of history."[67]

What is privacy for already exposed people in the age of big data? For oppressed people, I think privacy is not only about protecting some things from view, but also about what is strategically exposed. This might look like Mamie Till-Mobley, mother of slain teenager Emmett Till, choosing to expose the mutilated body of her son because "I think everybody needs to know what happened." It could also look like the organization Stop LAPD Spying Coalition, exposing the lies of law enforcement officials who claim not to know about the very surveillance techniques that the organization records them using. Organizers participate in

community events, public rallies, and protests and proceed to "watch the watchers." In one video, activists are shown interviewing police officers who act as if they had never heard of "Freedom on the Move" vans – a mobile video surveillance system "intended for use by military, border patrol, and law enforcement agencies"; and, just as they make these denials, the video cuts to the vans driving by the May Day rally.[68] Countering these forms of technological exposure, Stop LAPD Spying Coalition created "A People's Audit," which includes survey results of community members' experiences of preemptive policing and harassment.[69] If surveillance treats people like a "surface," then countering this form of violent exposure can entail listening deeply to the everyday encounters of those who are forcibly watched. This points to a different way of making sense and knowledge of the world, a theory of privacy predicated on mutual respect and dignity.

Exposing Citizenship

Coded exposure is not simply an American phenomenon, nor is it an issue that exists only when societies explicitly use the language of "race" in social and political life. Caste, religion, nationality, and disability are routinely racialized, to the extent that they signify immutable and stratified human differences. Moving beyond the US context, digitizing identity in governmental practices can lead to new forms of surveillance, coercion, and subordination.[70] UK's Human Provenance Pilot Project, India's Unique Identity Project (UID), and Kuwait's National DNA Initiative show how the racialization of

inequality produces an allure of objectivity and inevitability that makes it even harder to question and change the techno status quo.

In 2009, the UK Border Agency (UKBA) initiated the Human Provenance Pilot Project (HPPP), with the aim of using genetic ancestry testing and isotope analysis to vet asylum claims.[71] If, over the course of a standard interview, caseworkers grew suspicious of an applicant's story, they would request samples of saliva, nails, and hair. The primary targets of the project were East Africans. Somali applicants escaping persecution were eligible for asylum, so if the tests indicated that someone was from Kenya – a phenomenon dubbed "nationality swapping" – that person was scheduled for deportation. A letter from the deputy director of the project stated that "all samples will be provided voluntarily,"[72] but caseworkers were encouraged to regard refusal to submit samples with suspicion. The official protocol instructed:

> If an asylum applicant refused to provide samples for the isotope analysis and DNA testing the case owner could draw a negative inference as to the applicant's credibility . . . There must be other compelling evidence which also clearly demonstrates that the applicant has attempted to conceal information or mislead the UKBA. It must not be stated within the RFRL [Reasons for Refusal Letter] in isolation and must certainly not be stated as a primary reason for refusing the applicant's asylum claim.[73]

Following the protests of refugee advocates and journalists – and not through any regulatory or oversight governing body – the project came under widespread scrutiny. In the process, academic scientists expressed shock and disgust, insisting that the techniques used

could not diagnose nationality in the way the project assumed.[74] David Balding, a population geneticist at Imperial College London, noted that "genes don't respect national borders, as many legitimate citizens are migrants or direct descendants of migrants, and many national borders split ethnic groups."[75] Mark Thomas, a geneticist of University College London who called the HPPP "horrifying," contended that determining a person's ancestry – as distinct from nationality – is more complicated than many believe: "[mitochondrial] DNA will never have the resolution to specify a country of origin. Many DNA ancestry testing companies have sprung up over the last 10 years, often based on mtDNA, but what they are selling is little better than genetic astrology," he said. "Dense genomic SNP data does [*sic*] have some resolution . . . but not at a very local scale, and with considerable errors."[76] Likewise, Alec Jeffries, one of the pioneers of human DNA fingerprinting, wrote:

> The Borders Agency is clearly making huge and unwarranted assumptions about population structure in Africa; the extensive research needed to determine population structure and the ability or otherwise of DNA to pinpoint ethnic origin in this region simply has not been done. Even if it did work (which I doubt), assigning a person to a population does not establish nationality – people move! The whole proposal is naive and scientifically flawed.[77]

Janet Montgomery, an isotope specialist at Durham University, explained that, "unless the border between Somalia and Kenya represented some major geological or hydrological division, I cannot see how isotopes will discriminate between people living there let alone living

at/on the border." Montgomery insisted: "Isotopes do not respect national borders or convey some inherent national attribute. They are not passports."[78]

Despite such severe criticism from the scientific community, the HPPP did not initially shut down; nor did it rule out the possibility of reintroducing a similar initiative in the future. In their defense, representatives of the UKBA insisted that only asylum-seekers who had already failed linguistic tests (another contested method of determining nationality) would be asked to provide mouth swabs, hair, and nail samples.[79] The UKBA also released the following written response to scientific criticisms:

> Ancestral DNA testing will not be used alone but will combine with language analysis, investigative interviewing techniques and other recognized forensic disciplines. The results of the combination of these procedures may indicate a person's possible origin and enable the UK Border Agency to make further enquiries leading to the return of those intending on abusing the UK's asylum system. This project is working with a number of leading scientists in this field who have studied differences in the genetic backgrounds of various population groups.[80]

Several prominent scientists said they suspected that private labs, which were under much less regulatory oversight, had been involved in the project. And, while the UKBA has since tried to downplay the significance of the project, in the words of archaeologist Jessica Pearson, "[i]t's peoples' lives we're dealing with."[81]

The idea that the HPPP was "voluntary" conceals the threat of deportation, which was made if applicants did not consent to testing. It is false to say that one has a

choice when one of the two available choices automatically implies penalization. As Richard Tutton, Christine Hauskeller, and Steve Sturdy (2014) explain, "In the UK, official and popular attitudes to those who request sanctuary have become dominated by a hermeneutic of suspicion. Public and policy discourses portray asylum seekers as mostly 'bogus' refugees seeking admission to the country for economic, not humanitarian, reasons";[82] this also ignores that economic dispossession is itself a global humanitarian crisis.

The quest for scientific tools to determine ancestry and arbitrate group membership continues apace toward a variety of political and biomedical ends. The scientists' near uniform criticism of the UK project serves to highlight a key feature of the underlying science – its refusal to adhere to "terms of use" insofar as the UKBA was unwilling to shut down the project completely. Also essential to this discussion is the fact that such technologies of identity do not simply offer more objective means of confirming or disconfirming conventional identity claims; they actually redefine the social categories of identity on which immigration and asylum decisions are based. The HPPP stands as a salutary warning about the ways in which supposedly objective technologies of identification are increasingly being used at international borders to disempower the already vulnerable still further.[83]

Turning now to India: there the government aims to create a unique 12-digit ID for every resident called an Aadhaar (which means "foundation" in Hindi). An Aadhaar number is tied to individual demographic and biometric markers and is needed when applying for hundreds of welfare programs, as well as for things

such as a driver's license and college degree. The explicit purpose of the ID program is to avoid duplicates in the system and to provide insight into the economy, including the efficacy of aid programs, so as to allow the government and expert organizations to make more informed decisions. But what about those who wish to opt out?

According to WikiLeaks spokesperson Jacob Appelbaum, the Aadhaar program is likely to "create a digital caste system because going by the way it is now being implemented, if you choose not to be part of the system, you will be the modern-day equivalent of an outcast. In theory, you are supposed to have the freedom to choose but in reality, the choice will only be whether to be left out or left behind."[84] There are already reports of citizens being denied welfare services, including children unable to receive school lunches when their Aadhaar could not be authenticated.[85] In this way the New Jim Code gives rise to digital untouchables.

Although the Aadhaar Act of 2016 says that the UID is voluntary, it makes digital identity such "an integral part of every aspect of being a resident/citizen of the country"[86] that it can be said to *produce* illegality rather than screen for it. As Appelbaum notes, "not having Aadhaar would effectively be a criminal offence because it would turn perfectly law-abiding, tax-paying citizens into non-compliant ones on account of not having been able to pay one's taxes."[87] Aadhaar critics warn that the initiative will further harm the most vulnerable: "Naturally, women, Dalits, transgenders, religious and sexual minorities, who are anyway part of vulnerable and marginalised groups, would be far more susceptible to state policing of bodies and possible discrimination

via Aadhaar than upper caste Hindu men, simply because the latter's entrenched privileges will ensure the least surveillance for themselves."[88] Famed Indian writer Arundhati Roy has criticized the program as a "containment technique . . . perhaps one of the most ambitious and expensive information gathering projects in the world" and as an ill-conceived investment, given more pressing priorities:

> People don't have clean drinking water, or toilets, or food, or money, but they will have election cards *and* UID numbers. Is it a coincidence that the UID project . . . will inject massive amounts of money into a slightly beleaguered IT industry? To digitize a country with such a large population of the illegitimate and "illegible" – people who are for the most part slum dwellers, hawkers, Adivasis without land records – will criminalize them, turning them from illegitimate to illegal.[89]

Even as cases of Aadhaar data being hacked or sold make their way through Indian courts, an Indian finance minister suggested that adding DNA data into the biometric mix may actually be next.[90]

While India has yet to take that step, in 2015 Kuwait passed a law requiring citizens, residents, and visitors to submit DNA samples to a massive genetic database. According to one report, "[i]t sounds like an idea from a bad science-fiction novel . . . Such a database would be the first of its kind in the world."[91] It would include 1.3 million citizens and 2.9 million expatriates, costing approximately $400 million. A station would be set up at the airport, where all new arrivals would be required to submit cheek swabs or blood samples. Newborn babies would be tested and, in order for citizens to

receive their new passports, they would have first to submit their DNA.

Although a court struck down Kuwait's DNA Law in 2017, the government expected about 200,000 people to refuse testing, and serious punishments awaited them, including a year in jail or a $33,000 fine for "refusers," and seven years in prison for those who forged samples. Officials originally passed the law after an ISIS-linked man set off a bomb in a mosque killing 27 people. Proponents say that the database could help fight terrorism and crime as well as identify victims of large-scale attacks. Critics warned that there is more to the story, and that the already fraught status of the Bidoon minority is further threatened by this new law, because DNA tests will likely be used to arbitrate citizenship. The Bidoon are stateless descendants of nomadic Arab tribes that the Kuwaiti government considers "illegal residents," though some have acquired citizenship over the years through marriage and adoption. As one report explained,

> Kuwaiti citizenship is restricted to families that have been there since 1920, and is passed down through fathers' bloodlines, with few exceptions . . . Being an oil-rich country, Kuwaiti citizenship [*sic*] comes with a long list of benefits, including free education through college, free healthcare, grocery subsidies, unemployment benefits, and monthly government checks per child. Essentially, the law will allow the government to restrict access to citizenship based on verifiable bloodlines.[92]

A researcher at the Human Rights Watch explained:

> As the law was being passed, people who knew the intricacies of the Bidoon issue were saying, "This law has

> nothing to do with terrorism and criminal activity, but it has more to do with the state at a moment when oil prices are down and the state has to suddenly talk about taxing its own citizens and cutting all sorts of benefits. This might actually be an attempt to significantly cut the benefits to this community."[93]

The likelihood that the law would have been applied in this manner is supported by a number of government statements. As one official explained, the DNA database would "aid in the verification of Kuwaiti citizens";[94] another said that the data would help "arrest forgers and others who falsely claim their lineage."[95] The United Nations Human Rights Commission, among other organizations, is concerned that copycat laws in other countries will soon follow, especially as xenophobia is on the rise throughout the world.

Nothing short of a collective and sustained effort that, like the aforementioned Polaroid Revolutionary Workers' Movement, draws together those who work inside and outside powerful institutions can begin to counter the many violent exposures underway.

4

Technological Benevolence

Do Fixes Fix Us?

FIX

- to repair
- to get even with
- to make firm, stable, or stationary
- to influence the actions, outcome, or effect of by improper or illegal methods.

Like more and more people released from immigrant detention centers, Grace, a single mother from El Salvador, was imprisoned for over a year before being released with an ankle monitor – what families call "grilletes," Spanish for shackles. "It's like they make us free, but not totally free. It's the same psychological game as detention. They aren't freeing us totally. It's, 'If you break a rule, if you don't tell us you're leaving, we'll put you in detention again.'"[1] Pseudo-freedom offers more opportunity to control and capitalize on the electronic afterlives of imprisonment. Quite literally, those wearing the shackle must pay for their containment. The same companies that have federal contracts with Immigration and Customs Enforcement