

Directions for Future Work: From #TechWontBuildIt to #DesignJustice



Figure 6.1
No Tech for ICE, from the #TechWontBuildIt campaign.

To: Talent Acquisition at Amazon. Thank you for reaching out. While I'm sure this would be a great opportunity, I have no interest in working for a company that so eagerly provides the infrastructure that ICE relies on to keep human beings in cages, that sells facial recognition technology to police, and that treats its warehouse workers as less than human. Best wishes, [redacted].

—Anonymous participant in #TechWontBuildIt

Tech workers have recently been building power through active refusal to work on oppressive technology projects, often under the banner of the hashtag #TechWontBuildIt. As Lauren Luo, a student at MIT in my Networked Social Movements seminar, describes it:

On December 13, 2016, the day before top tech executives met with Donald Trump in a tech summit, a group of tech workers released the Never Again pledge

... “that they will refuse to build a database identifying people by race, religion, or national origin.” Just over a month later, both Google Co-Founder Sergey Brin and Y-Combinator president Sam Altman joined protests on January 28, 2017 at San Francisco International Airport in opposition to President Trump’s executive order that banned immigration [from] seven Muslim-majority countries. Two days later, over 2,000 Google employees in offices around the world staged a walkout and donated more than \$2 million (matched by Google) to a crisis fund for nonprofit groups working with refugees.¹

This wave of activity continued to build. By 2018, more than four thousand Googlers organized a campaign for their company to drop Project Maven, a Department of Defense (DOD) contract to develop image-recognition systems for drone warfare.² Scholars and scientists expressed solidarity with the workers; Lucy Suchman, Lilly Irani, and Peter Asaro, together with the International Committee for Robot Arms Control, organized an open letter in support of the campaign that attracted over 1,100 signatories, including prominent figures such as Terry Winograd, a computer science professor who was Google cofounder Larry Page’s graduate advisor at Stanford.³ Ultimately, by June 2018, Google leadership announced that it would drop the project.

Throughout the summer of 2018, #TechWontBuildIt grew in parallel with a cycle of immigrant rights protests. #KeepFamiliesTogether mobilizations swept the country after revelations about the Trump administration’s policy of separating thousands of migrant children from their parents, along with images of very young children and toddlers locked in makeshift detention centers under awful conditions.⁴ Investigative reporters and human rights organizations found that some of these children were drugged against their will, and documented cases of child sexual, physical, and emotional abuse, as well as child deaths in ICE custody.⁵ In response, as #KeepFamiliesTogether and #AbolishICE took prominence in the media cycle, Microsoft workers pushed their company to drop a \$19.4 million dollar contract with ICE. Together with immigrant rights organizations, tech workers organized #NoTechForICE protests at Microsoft stores in cities including Seattle, Boston, New York City, and more.⁶ Following Microsoft’s acquisition of GitHub, the largest repository of free/libre and open-source code, nearly three hundred open-source developers pledged to take their projects off the platform unless Microsoft dropped its ICE contract. (As I write these words, Microsoft’s leadership has not yet responded, but pressure continues to mount.)

"Decided to respond to a recruiting email for a change today #TechWontBuildIT #NoTechForICE"
—Anna Geiduschek (@ageiduschek)

"I did this the other day too! #TechWontBuildIt"
—(@_ifnotbyfaith)

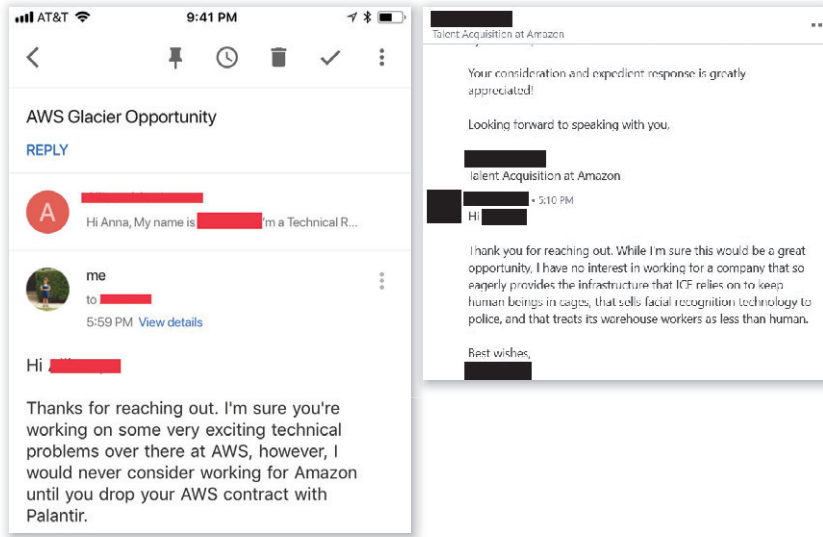


Figure 6.2

Tech workers tweet responses to recruiters from companies targeted by #TechWontBuildIt. *Source:* Screen captures from Twitter.

At Salesforce, workers used the hashtag #CancelTheContract to call for an end to a database services agreement with US Customs and Border Protection (CBP). Hundreds of workers signed a petition, and dozens protested at the Salesforce HQ in the Bay Area on Monday, July 9, 2018.⁷ A coffee shop in San Francisco declined a \$40,000 vendor contract at Dreamforce, Salesforce's annual conference, in protest of the contract,⁸ and RAICES, a grassroots immigrant rights organization in Texas, turned down a \$250,000 donation from Salesforce.⁹ The management consulting firm McKinsey, one of the most prestigious and powerful in the world, ended a \$20 million contract with ICE, although other firms such as Booz Allen Hamilton, Deloitte, and PricewaterhouseCoopers continued to advise ICE on "information systems, data integration, and analytics."¹⁰

Some tech workers developed a new pressure tactic: they responded to tech company recruiters with notes about their ethical stances,

then publicly shared their responses via social media (highlighted in figure 6.2).

Immigrant rights mobilizations were key to the momentum of #TechWontBuildIt in 2018, but tech workers are organizing across many different issue areas. For example, after the leak of Google leadership's internal plans to build a censored search engine for the Chinese market under the name Project Dragonfly, Google workers mobilized again; by August 2018, Google announced that it would not be entering China any time soon.¹¹ Amazon workers pushed for their company to stop selling Amazon Rekognition facial recognition technology to law enforcement¹² and to stop selling Amazon cloud services to military/intelligence data analysis firm Palantir.¹³ Over two thousand IBM employees signed a petition to demand that they be able to opt out of work on government contracts that violate civil liberties.¹⁴ In November 2018, about 20 percent of Google employees worldwide (more than twenty thousand people in offices in more than fifty cities) walked out in protest against the company's sexual harassment policies, among other demands.¹⁵ Although organized tech workers do not always achieve their immediate goals, their recent efforts have contributed to an important expansion of the horizon of possibility.

Through all this organizing, the Tech Workers Coalition (TWC, initially founded in 2016) emerged as a key networked social movement organization. TWC supports the efforts of tech workers across various firms to hold their industry accountable and to transform its practices. Their mission: "Guided by our vision for an inclusive & equitable tech industry, TWC organizes to build worker power through rank & file self-organization and education."¹⁶ Another organization, Science for the People (SftP), expanded chapters to twelve cities and helped organize protests at multiple Microsoft offices in late July 2018.¹⁷ SftP is a present-day reboot of an organization that was initially born in 1969 at MIT, when scientists (faculty, staff, and students) walked out of their labs and joined a university-wide teach-in to protest the militarization of research.¹⁸ The story of the March 4, 1969, events and transcripts of the speeches at the teach-in have recently been republished by the MIT Press in an anniversary edition of the book *March 4: Scientists, Students, and Society*.¹⁹

#TechWontBuildIt runs counter to the enduring myth that tech workers are apolitical—a myth because there is a long history of politically engaged scientists, technologists, and designers, although the dominant cultural narratives about this kind of work tend to erase that history. For example, the Federation of American Scientists, formed in 1945 by Manhattan Project scientists to limit and control the use of nuclear technology, is still active today.²⁰ This group influenced a wide range of science and technology policies and is responsible for the creation of the Atomic Energy Commission, among other outcomes.²¹ Computer Professionals for Social Responsibility (CPSR), key architects of the long-running Participatory Design conference, were active from 1983 to 2013; CPSR was born hand in hand with the anti-nuclear-proliferation movement of the time and advocated against the use of computers for war.²² Chapter 1 of this book explored various explicitly political subfields of design and technology in both theory and practice, such as value sensitive design, inclusive design, and decolonizing design. Chapter 3 told the story of how radical techies from the Indymedia network, always tightly tied to the global justice movement, were key to innovations in open publishing, people-powered news, and the massification of DIY media production.²³ Chapter 4 traced the roots of hackerspaces to autonomist and anarchist social centers.

Campaigns to democratize technology are most effective when tied to larger social movements. The book *Grassroots Innovation Movements*, by scholars Adrian Smith, Mariano Fressoli, Dinesh Abrol, Elisa Arond, and Adrian Ely (discussed in chapter 3), provides extended case studies of other examples, including the Movement for Socially Useful Production; the Appropriate Technology Movement; the People's Science Movement in India; makerspaces, hackerspaces, and fablabs; the Social Technologies Network; and the Honey Bee Network.²⁴ Communication scholar Sandra Braman's work on the history of the Internet provides extensive evidence that the political views of computer scientists and electrical engineers inform their technical design decisions (Braman is the editor of the Information Policy Series at the MIT Press, and this book is part of that series).²⁵ Most recently, Ruha Benjamin and the JUST DATA Lab have compiled an excellent resource guide to organizations that currently work at the intersection of technology, design, data, and social justice.²⁶

Many tech workers, including designers, programmers, and more, are mobilizing today for the same reasons as progressive and radical people in every field in the United States: the openly racist, misogynist, ableist, Islamophobic, anti-immigrant, trans*- and queer-phobic Trump administration demands a response. Since 2016, social movements have grown, built their membership and participant base, organized historic street mobilizations, run candidates for elections (and, in 2018, won key races), taken direct action, and used a wide range of tactics to resist and shift power. Tech workers also feel moved to be part of what social movement scholar Ruud Koopmans calls the current *wave of contention*,²⁷ or what media and information studies professor Nick Dyer-Witford calls a *cycle of struggle*.²⁸

In other words, tech worker mobilization today is part of both a long history of similar actions and a currently intensified cycle of struggle across diverse, networked movements. The calls to end ICE contracts at Microsoft and Salesforce would not have gained visibility without their ties to immigrant rights mobilizations triggered by the Trump administration's brutal child separation policy. Amazon workers' demands against facial recognition contracts with law enforcement departments would not be so salient without the ongoing #BlackLives-Matter movement, even as the current wave of resistance to surveillance of B/I/PoC has to be understood also in the context of the role of surveillant sociotechnical practices throughout centuries of settler colonialism, white supremacy, and slavery.²⁹ The unprecedented scale of the March for Science in the aftermath of the Trump election, with its federated structure of local organizing committees, also provided fertile ground for the emergence of #TechWontBuildIt, even as the March for Science was troubled by internal conflicts about the centrality of race, class, gender, migration, disability, and other arenas of struggle.³⁰

Designers, developers, and technologists occupy privileged positions in the global economy. Without them, the infrastructure utilized by larger systems of oppression can't be built or maintained. Many of these workers know this and are getting organized to put pressure on their companies and institutions. The #TechWontBuildIt movement members' refusal to participate in the design of explicitly oppressive sociotechnical systems is an important development. Alongside the

continued necessity of refusal, the Design Justice Network (and many kindred organizations) seeks to advance the conversation about what it takes to not only resist participation in the design of oppressive systems, but also to design, build, and maintain alternatives. Hopefully, designers in many fields, from big tech to graphic design to architecture and beyond, will find the design justice framework helpful in their efforts to transform design firms, industries, and overall practices.

Questions for Design Justice Practitioners

To effect that kind of transformation, this book has argued that we need to better understand how design reproduces the matrix of domination through varied mechanisms, including the distribution of affordances and disaffordances that we encode into technologies (design values); who gets paid to do design work and who controls design processes (design practices); the stories that we choose to tell about design (design narratives); the inclusion and exclusion of various kinds of people from privileged design locations (design sites); and the methods we use to teach and learn about design (design pedagogies). Throughout, this book has also focused on concrete examples of people, organizations, and networks who are actively doing design justice work today.

Yet there is so much more to do. This final section of the book reflects briefly on a few questions about design justice, and then discusses possible directions for future work.

Further Specification by Design Domain?

First, although most examples in this book are drawn from specific design domains—in particular, software development—I believe the broader questions sketched here are applicable to all activities that fit under the rubric of design. Still, in practice, little can be accomplished without more field specificity. In some design fields, this is already happening. For example, as discussed in chapter 1, there is a growing wave of activity focused on rethinking AI and machine learning through a social justice lens, such as work by research institutes AI Now, Data & Society, and the Data Justice Lab; conferences and networks like FAT*, Data for Black Lives, Black in AI, and the Our Data Bodies Project; and scholars and activists like Safiya Noble, Meredith Broussard, Virginia

Eubanks, Timnit Gebru, Joy Buolamwini, Ruha Benjamin, Mimi Onuoha, Diana Nucera, and many others. We urgently need more critical analysis in every design domain. Hopefully, others will be inspired to extend and deepen the discussion of design justice to various fields, including industrial design, service design, architecture, urban planning,³¹ graphic design, fashion, and more.

Tensions between Process and Outcomes?

At the Design Research Society in Limerick in 2018, I presented a paper about design justice that laid out many of the arguments in this book.³² During the Q&A, one member of the audience said (to paraphrase): “Design justice sounds nice, but it’s not practical or possible in real life.” To which the only response must be: We have to articulate a vision of the world we want, don’t we? Designers who ignore questions about process on the grounds that shipping the product is more important are deploying a version of the Machiavellian argument that the ends justify the means.³³

Of course, in theory, design justice calls for both equitable design processes and just design outcomes. However, in practice, all design projects have limited resources and limited time, and there are nearly always trade-offs between the inclusivity of a process and the need to ship a product. Put another way, there are real tensions between those design justice principles that emphasize an inclusive design process and those that prioritize impact on a community over the designers’ intentions. A design project may be wonderfully inclusive, provide all participants with a sense of ownership, and reward people equitably for their work, but fail to produce a design product that is useful to the community. Alternately, a process that is not at all inclusive may produce a product that is useful and widely loved. These tensions are not fully resolvable, but they also do not invalidate design justice practitioners’ attempts to pay attention to both procedural and distributive justice.

Some may believe that the design justice approach makes it impossible to actually design things and release them into the world. If designers spend all our time evaluating the differential impacts of our work on various subgroups of people, they say, we will never be able to complete projects. It’s true that design justice practitioners have to take care

that critique does not become our primary activity; an overemphasis on testing, evaluation, and critique can indeed be ultimately disempowering. At the same time, explicit critique paired with alternative proposals can be very productive.

What's more, though it may be true that it is technically impossible to consider all the possible ways design reproduces inequalities, the response to "the perfect is the enemy of the good" is "just try!" There may be no perfect design process, where a multicultural, multilingual, queer, variously abled group of designers, researchers, community members, coders, and testers frolic together under a happy rainbow of radically inclusive design (although such a process does sound like a lot of fun!), but there are many, many designers in various fields who work every day to make our processes more inclusive and more just.

A more moderate version of this argument holds that design justice dramatically slows real-world design processes down too much to be viable. In practice, though, a design justice team can work either quickly or slowly, just as in any design approach. In addition, design justice is an approach that will become easier as it matures, as more people practice it, and as specialized domain-specific tools and practices become available. Also, if it is true that a design justice process typically takes more time, perhaps going slower is worth it to build a better, more just and sustainable world.

The Paradox of Pragmatic Design?

Design justice requires that we use a lens broad enough to capture structural inequality, which is not "solvable" in any traditional sense; at the same time, successful design justice projects must produce more than critique. Design produces things: objects, systems, interfaces, apps, illustrations, clothing, machines, buildings, and so on. This is the *paradox of pragmatic design* within a design justice framework: to develop workable designs and to generate products, designers must engage with the realities of limited resources. A radical, utopian design that won't be implemented because it requires resources that aren't available will not improve people's daily lives in the immediate future, whereas a limited, pragmatic design that is organized to meet available resources may be prototyped, revised, rolled out, and in the best case actually provide real benefits to real people. However, if resource constraints become an

excuse to avoid examining the root of the problem area, then designers will almost always end up, at best, providing Band-Aids for deep wounds and, at worst, actively serving existing power structures. If we take seriously the idea that current power structures are not only unjust but also steadily leading humanity down an unsustainable path that ends in planetary ecological collapse and species death, then we can't be satisfied with purely pragmatic design.

For example, imagine a design team working hand in hand with a fishing community. The community identifies polluted water as its greatest challenge and as the area for intervention. The pollutants are coming from an upstream petrochemical plant. Should the team allocate its resources to develop and distribute a filtration device that can greatly reduce, but not eliminate, the pollutants from personal drinking water? Or should they allocate the resources toward attempts to make the owners of the petrochemical plant stop polluting the water? Perhaps it's possible to do both at once, with a public campaign targeting the plant and/or regulators while also raising money to build and distribute filters?

Designer and scholar Carl DiSalvo argues for *adversarial design*, an approach rooted in the political theory of agonism. DiSalvo urges designers to create contestational objects, challenge hegemonic power structures, and offer speculative alternatives. As DiSalvo says, "Design can produce a shift toward action that models alternative presents and possible futures in material and experiential form."³⁴ Another approach might be to engage in parallel pragmatics/utopics: to systematically and explicitly develop radical, or utopian, design solutions within the context of each design project, either at an early stage (during ideation) or alongside and in parallel with the pragmatic design product. The design process itself then becomes an exercise in radical visioning: the design team, led by people from the most directly affected community, explores the root of the problem and develops ideas for systems change, in addition to ideas for products or services that can be implemented within the resource limitations of the project. In this way, design outputs include greater understanding of multilevel problems, proposals for radical transformation, and traditional design outputs. In other words, design becomes part of a praxis of liberation, rather than a tool for, at best, incremental improvement within a context of steadily

declining possibilities and, at worst, an extractive instrument for mining ideas from already oppressed communities.

Broader Applicability of Black Feminist Thought?

Another question is: Why should Black feminist thought be used as a foundation for rethinking design as an overall human enterprise? Some may feel this is a move that subjugates other forms of knowledge, or find it to be an undue universalization of a particular understanding of race, class, and gender that centers the US³⁵ context. However, the core concepts of intersectionality and the matrix of domination, developed by Black feminist scholars and activists, are not themselves unique to the United States. White supremacist heteropatriarchal capitalism and settler colonialism—the matrix of domination—is an ongoing global process, although it operates differently in different places and at different scales.³⁶ True, the specific implications for design theory and practice must be specified and localized. However, there is no reason why design justice as a framework should only be useful in the US context.

Black feminist thought has increasing influence in design, media, and communication scholarship. In the conclusion to her book *Algorithms of Oppression*, Safiya Noble calls for *black feminist technology studies* (BFTS), “an epistemological approach to researching gendered and racialized identities in digital and analog media studies.”³⁷ The group of scholars with the Center for Critical Race and Digital Studies focus on how “structural inequalities in digital media technologies and systems produce disparate and adverse impacts on communities and individuals of color in the U.S. and across the globe” and also work to “envision the digital as a potential means for generating greater racial empowerment, personal and political agency, democratic participation and activism that diminishes inequalities.”³⁸ Deena Khalil and Meredith Kier have described what they call *critical race design*, an approach to antiracist design grounded in Black feminist thought.³⁹ André Brock synthesizes critical race theory, Black feminism, and queer theory to propose critical technocultural discourse analysis (CTDA), an approach that centers the “epistemological standpoint of underserved ICT users so as to avoid deficit-based models of underrepresented populations’ technology use.”⁴⁰ Future design justice work might explore each of these kindred approaches’ implications for design practice.

In the conclusion to her canonical work *Black Feminist Thought*, Patricia Hill Collins discusses the need to engage power as it operates within what she calls the *structural, disciplinary, hegemonic, and interpersonal domains*. Future design justice practitioners will need to engage in each of these domains of power via community-led and accountable design processes. For example, in the structural domain of power, design justice might look like redesigning the institutions of employment, education, housing, health, communication, law, business, and government so that they more equitably distribute benefits and burdens. In the disciplinary domain of power, it might mean resisting and redesigning systems of bureaucracy and surveillance, as well as dismantling the prison industrial complex. In the hegemonic domain of power—the realm of ideology, culture, and consciousness—design justice suggests the need to create new narratives about who has participated in the design of our world so far and who gets to be involved in the future. In the interpersonal domain of power, characterized by everyday acts, small and large, of oppression and resistance, a design justice approach invites us to reconfigure everything from human computer interfaces to the built environment in ways that will more equitably distribute affordances and disaffordances.

Finally, I offer a brief note about why, as a white trans* femme, I personally center Black feminist thought in my attempts to interrogate and extend design theory, when there is a history of white scholars appropriating and erasing Black women's work. I work with Black feminist theory because Black feminists created many of the concepts that (to me) most clearly articulate the dynamics of oppression and resistance. Black feminist thought and the Black women who create it are essential to any liberatory theory and practice. By citing Black women's work throughout this book, I hope that rather than appropriation and erasure, I have contributed in a small way to centering Black feminist scholarship and activism in design theory and practice. I also acknowledge the multiple forms of privilege that I benefit from based on my particular location within the matrix of domination, including whiteness, employment at a powerful university, US citizenship under ongoing settler colonialism, and my lack of lived experience with disability (mostly), even as I face particular forms of oppression as a nonbinary trans* person. I urge readers to further explore the powerful analysis

coming from spaces like the Center for Critical Race and Digital Studies, the resources assembled by Melissa Brown at blackfeminisms.com, and the JUST DATA Lab resource guide, gathered by Ruha Benjamin at www.thejustdatalab.com/resources.

The next section describes possible directions for future work, organized according to the top level categories from this book's five chapters: values, practices, narratives, sites, and pedagogies.

Values

Chapter 1 addressed the question, "How do the affordances of the digital objects and systems that we design encode, reproduce, and/or challenge power?" However, technologies frequently, if not always, have unintended consequences.⁴¹ Designers never really know how the things we make will be used. This is a significant area of research in science and technology studies, and it has important implications for any attempts to embed values in sociotechnical systems. To address this question, and for design justice methods to be broadly adopted, we need to develop evaluation criteria, as well as guidelines, standards, codes, and laws, while remaining attuned to the dangers of extractive forms of knowledge production.

Evaluation and Impact Assessment

How might we evaluate design projects according to the design justice principles? One approach is outlined in the *Design Justice Zine*, no. 2. For any design project, we can ask three questions: Who participated in the design process? Who benefited from the design? And who was harmed by the design?⁴² The zine provides examples of applying this approach to several recent design projects in Detroit.

In certain types of design practice, formal accessibility evaluations are required by law. For example, the ADA requires compliance with accessibility standards in architectural design, web design, and other domains.⁴³ As a result, accessibility assessment processes, tools, and metrics, such as web services and browser plug-ins, are widely used by designers to check for ADA compliance. More in-depth compliance testing is also available as a service, with an ecology of firms that are available to conduct audits at various levels of detail. Unfortunately, as

design historian and feminist scholar Aimi Hamraie points out, for the most part designers approach accessibility as a post hoc checklist and as a burden required by their company's legal team. Regulation, legal accountability, and mandated accessibility compliance should certainly be seen as real victories based on organizing and disability activism, but they are no panacea.⁴⁴

Others propose formal design discrimination impact assessments based on environmental impact assessments—an approach developed by the environmental justice movement. In the early 1980s, scholar of rural feminisms Corlann Bush suggested gender impact assessment reports for design projects.⁴⁵ A small but growing set of firms and organizations, including the Algorithmic Justice League, provide algorithmic accountability audits; Deborah Raji and Joy Buolamwini recently studied the impact of these audits and found that public, multifirm, intersectional algorithmic bias audits do produce improved outcomes in products sold by targeted firms.⁴⁶

Tools to support design justice evaluation include intersectional benchmarks, such as the Pilot Parliament Benchmark dataset created by Buolamwini (2017) to test facial analysis algorithms' ability to classify gender across diverse skin tones; libraries for use by software developers, such as those proposed by proponents of value-sensitive design; how-to guidelines, manuals, and handbooks like those produced by the Design Justice Network and the Detroit Community Technology Project; model working agreements and MOUs, such as those gathered and shared by the Boston Civic Media Consortium;⁴⁷ and many others. We also must develop design justice auditing methods that account not only for the intersectional nature of identities, but also for the fluidity of identity categories (which shift over time at a societal level), individual identification (which may shift over an individual's lifetime), and expression/performance (which constantly shifts, consciously or not, in the course of daily life).⁴⁸

Design justice practitioners can expand these types of tools and services to make it easier for more design teams to evaluate for discriminatory design through an intersectional lens. Designers in multiple fields need tools to conduct intersectional audits, and we need to foster an ecology of firms that will audit using design justice criteria. The point is ultimately not to impose a single rubric but to encourage

designers and communities to develop and share many different evaluative approaches that are rooted in design justice principles.

Guidelines, Standards, Codes, and Laws

Design justice principles can also be used to produce guidelines, standards, and codes, and designers then need to organize for their adoption by standards bodies and professional associations. Different design domains require different kinds of design justice guidelines. For example, the principles of universal design, compiled in 1997 by universal design advocates Bettye Rose Connell, Mike Jones, Ron Mace, Jim Mueller, Abir Mullick, Elaine Ostroff, Jon Sanford, Ed Steinfeld, Molly Story, and Gregg Vanderheiden, include both overarching principles and specific guidelines for designers to help them implement those principles.⁴⁹

Standards adoption is sometimes voluntary; in other cases, standards become legal requirements. The International Code Committee develops codes for safe buildings,⁵⁰ the National Institute of Standards in Technology (NIST) produces standards across a wide range of technological domains in the United States. For example, NIST is currently exploring standards to curb algorithmic bias. In HCI, practitioners of user-centered design are guided by the International Organization for Standardization (ISO) document ISO 9241-210:2010, “Ergonomics of Human-System Interaction—Part 210: Human-Centred Design for Interactive Systems.”⁵¹ To take yet another example, there is a tradition of human rights and social justice advocacy at the Internet Engineering Task Force (IETF), the key standards-setting body for the global internet. Lawyers, hackers, scholars, and activists like Niels ten Oever, Joana Varon (executive directrix of codingrights.org), Corinne Cath, and others have worked for years to develop the IETF guidelines for Human Rights Protocol Considerations. This document translates human rights concepts into technical terms relevant for those working on internet networking protocols.⁵² It also builds on existing standards that were developed to explicitly support privacy at the network protocol level.⁵³ Proposed methods include analyzing draft IETF standards for whether they consider human rights at all, analyzing the potential human rights impact of standards changes, incorporating interviews with directly impacted people and communities into the regular process of internet standards design, and post-hoc analysis of the human rights impact

of new standards implementations. Guidelines for engineers to consider when developing new protocols include their impacts on privacy, internationalization, open standards, accessibility, authenticity, and anonymity.

Design standards that potentially support social justice are also sometimes adopted into law, as in the case of the universal and accessible design standards that informed the Americans with Disabilities Act in the United States⁵⁴ or the General Data Protection Regulation (GDPR) in the European Union.⁵⁵ In this book, I have barely touched on law and policy. I hope that the legal and policy implications of design justice will be taken up by legal scholars, public-interest lawyers, and advocacy organizations over time.

A Note about Appropriation

There's a disjuncture between academic attention to community appropriation of technology, as discussed in chapter 3, and the more widely used sense of the term to describe cultural theft. Although many scholars valorize resistant, critical, or bottom-up forms of technological appropriation, appropriation is a process that can be employed by anyone, including those who hold very different values. In popular culture, the term most often is used to name the process whereby white people, and cultural industries that produce and valorize whiteness, constantly steal and use B/I/PoC cultural practices (ideas, fashion, music, food, slang, and so on) without acknowledging their history and origins and without sharing the benefits (monetary and otherwise) that accrue. Those in positions of power under white supremacy benefit from the systematic appropriation, or theft, of ideas and culture from B/I/PoC. Settlers benefit from the appropriation (theft) of native lands and cultures. Under capitalism, the dynamic of appropriation by those in positions of structural power also can be seen in labor process innovations by workers that result in their own displacement through automation. When shop floor workers redesign assembly processes to be more efficient, for example, the gains are typically realized by factory owners, rather than workers, whose workload doesn't decrease; on the contrary, they are frequently expected to produce at a higher level within the new, redesigned process. Under heteropatriarchy, men do not systematically appropriate femme styles, mannerisms, speech

forms, and culture; indeed, to do so is to break male gender norms and invite transmisogynistic violence. However, men constantly appropriate labor by women and femmes, including emotional, affective, and reproductive labor, as well as housework and other forms of work that are feminized, racialized, and devalued under heteropatriarchal racial capitalism.⁵⁶

Although many individual designers and developers do not *intentionally* participate in theft from and exploitation of marginalized communities, they do indeed participate in such processes; this is why one of the principles of design justice is that it focuses on outcomes over intent. In many cases, unintentional appropriation plays a key role in reproducing the matrix of domination.

Practices

Chapter 2 explored the question, “Who participates in and controls design processes?” It also argued for accountability to marginalized communities and, ultimately for community control of design. Frequent critiques of community-controlled design processes include variants of “design by committee produces mediocrity” or “we don’t want to end up with lowest-common-denominator design!”

“Design by Committee Produces Mediocrity”

There are various versions of the argument that design justice in practice produces mediocre outputs. Among software development communities, for example, the phrase *design by committee* is often shorthand for a process that is assumed to produce designs that are “(a) ineffective, (b) inelegant and (c) not responsive to the core concerns.”⁵⁷ The implication is that shared decision making never works. To take an example from another domain, in the documentary film world, many directors feel that community accountability crushes creativity.⁵⁸ These kinds of arguments must be situated within a larger conversation about the relationship between community accountability, democratic processes, shared decision making, and delegation, on the one hand, and the role of expert knowledge, professionalization, and individual creativity on the other. To address this line of critique, at least two questions are helpful.

First, does design justice require design by committee? The answer is simple: it does not. On the contrary, in a well-functioning design process, the design team recognizes and values the unique skillsets and experiences of each participant. The team frequently delegates particular kinds of work and particular kinds of decisions to skilled individuals and working groups. For example, if one person on the team is a skilled illustrator, they may be assigned the task of creating illustrations and detailed mock-ups for the project. There is nothing about design justice as a framework that necessarily implies that particular talents or skills must be devalued or subordinated to an abstract “collective will.” Indeed, if anything, design justice ensures that all of those who contribute to a design process receive recognition, attribution, and, where appropriate, remuneration for their labor. This is in contrast to other design approaches where those at the top of the hierarchy receive the vast bulk of the rewards for the collective labor and ideas of those below them in the pyramid. In contrast, in HCD and even in many participatory design processes, community members who take part in various stages of design, and whose ideas and feedback may provide the key to the realized product, are rarely compensated or recognized. If they are, such recognition is typically token.

Second, does design by committee always produce mediocrity? Perhaps not. To take the most visible example, no one disputes that the internet itself was designed by community consensus.⁵⁹ It is fair to say, though, that the devil is in the details. A design process where every decision is made by many people may take much longer, and it is also possible that the results may be mediocre. However, this has more to do with the specific decision-making process of the design committee than with the mere fact that the decision involves a committee at all. Is it consensus? Majority rules? Instant runoff voting? Is it consultative, with a delegated individual making the final decision after listening carefully to input from everyone? For example, standards for the World Wide Web are set by a technical body called the W3C, which functions by committee. The W3C recommends committees of about ten to fifteen people, with a small, highly engaged core augmented by feedback from a larger public mailing list.⁶⁰ Software developer and scholar of consensus process Charlie DeTar wrote an excellent doctoral

dissertation about the design of sociotechnical systems to support democratic decision making.⁶¹

Funnel or Prism? A Further Response to the Lowest Common Denominator

The concept of *lowest-common-denominator design* holds that when many people are involved in a design decision, they may arrive at a solution that no one really loves but that everyone can live with. The argument is that design justice asks us to design for everyone, but if we try to design for everyone, we will design boring, uninspired objects. Further, we won't be able to take advantage of all the possible affordances of designed objects if we're trying to make them accessible to all. For example, if we want to design physical spaces that are accessible to people in wheelchairs, then we won't be able to use stairs as a design element in the built environment.

I am writing these words in a small, beautiful house in Punta del Diablo, Uruguay. The house has one large room with high ceilings, a smaller bedroom, and a bathroom. It is designed with a loft area with two child-sized beds; the loft area is accessed by a steep wooden stairway with a ten-step ladder built against the wall at an angle of about 75 degrees. The loft area is clearly inaccessible to anyone who cannot climb such a ladder; the design excludes small children, elders, and many Disabled people. Does design justice imply that we should never build such a loft space? It does not. The loft is an excellent use of space. It takes a small-footprint floorplan and adds an aesthetically pleasing, functional, additional sleeping and working space. It provides an area slightly separate from the bedroom and the main living space. From the standpoint of anyone who enjoys lofts, it is a lovely design decision.

Design justice doesn't imply that we must somehow reduce our options to only those that satisfy all accessibility criteria for the most marginalized within the matrix of domination. It is not meant to be a filter that we use to eliminate most design possibilities from consideration because they fail an accessibility checklist. In fact, design justice as a framework is meant to do the opposite: to act not as a funnel that we use to limit ourselves to a minimal set of supposedly universal

design choices, but rather as a prism through which to generate a far wider rainbow of possible choices, each better tailored to reflect the needs of a specific group of people.

As discussed throughout this book, many design approaches attempt to universalize, without acknowledgment of who will benefit, who will be excluded, and who might be harmed. Design justice makes these choices explicit. It is opposed to false universalization; it is allied with standpoint theory. It is an approach to design that recognizes, respects, and specifies difference, instead of pretending to erase difference. Design justice builds on feminist epistemologies.⁶² This means that instead of pretending to design based on supposedly universal, unemotional, and value-free data (often a mask for the lived experience of relatively wealthy white cis men), design justice values insights that are developed through open dialogue, empathy, and the lived experience of people from the communities that will be the most affected by the designed object or system, as well as by the design process itself. To return to the example of the small house in Uruguay: the loft, with its ladder steps, is inaccessible to many but is still a wonderful feature of the house. It provides great joy to a certain subset of people, although others cannot make use of it. On the other hand, the narrow width of the only door, together with the six-inch raised lip of the doorway, greatly reduce the accessibility of the entire house to those who use wheelchairs. A design justice approach might indeed support a different design, with wider doors flush at the entrance, to allow an entire family to enjoy time here together, including elders and/or others who might need the use of a wheelchair or who have a harder time with steps.

Design justice, in other words, requires that we specify, consider, and intentionally decide how to best allocate both benefits and harms of the objects and systems we design, with attention to their use context. It doesn't mean lowest-common-denominator design. Quite the opposite: it means highly specific, intentional, custom design that takes multiple standpoints into account. It is not about eliminating the benefits of excellent design unless everyone can access them; instead, it is about more fairly allocating those benefits.

Narratives

Chapter 3 asked, “How do the stories that we tell shape design?” It argued that narrative shifts are necessary in terms of design framing, scoping, and attribution.

Design Saviors versus Design’s Role in the Cycle of Struggles

One necessary narrative shift would turn us away from technochauvinism⁶³ and solutionism and toward an understanding that designers can play an important role within broader social movements. The explicit politicization of design is periodic: it rises and falls within the context of cycles of struggle.⁶⁴ As I write these words, we are living through the ascendance to political power of hard-right and explicitly white supremacist tendencies within democracies around the world, from the Trump administration in the United States to Bolsonaro in Brazil. Yet resurgent authoritarianism, like the Snowden revelations, spiraling income inequality, climate crisis, the perpetual War on Terror, and the ever-expanding prison industrial complex, also provoke new social movements, from Occupy Wall Street to #BlackLivesMatter. The continued push for petroleum extraction, linked with ongoing projects of settler colonialism, faces resistance from a new wave of indigenous-led organizing, such as #StandWithStandingRock. The extreme and open racism, misogyny, and xenophobia of the Trump administration galvanized a massive cycle of struggles, including for immigrant rights (#NoWallNoBan and #KeepFamiliesTogether), against rape culture (#MeToo), and more. These take place at the same time as the increased mainstream cultural visibility of trans* people of color, the spread of intersectional analysis, and the repoliticization of queer struggle. It’s in this context that many feel a desire to realign design values, practices, narratives, sites, and pedagogies with explicitly intersectional feminist, queer, antiracist politics. Design justice thus is part of a broader cycle of struggles.

Platform Cooperativism versus the “Sharing Economy”

Another key narrative that must be challenged by design justice practitioners is that of the so-called sharing economy. The design of platforms like Uber, Amazon, Airbnb, and other digital markets for on-demand

services and goods is currently structured to reinforce the power of consumers over workers, and owners over all. Platform affordances too often privilege those who occupy positions of social and economic privilege. Platform design is a key “moment” in the reproduction of economic relationships and social control under white supremacist capitalist heteropatriarchy and settler colonialism. Platform ownership also is an increasingly important source of capitalist profitability and worker exploitation. Counterstrategies to the “Uberization of everything” include worker self-organization, consumer boycotts and buycotts, shareholder activism, platform worker organizing by labor unions, and platform cooperativism.

Platform cooperativism is the proposal, most clearly articulated by media studies scholar-activist Trebor Scholz, journalist and media studies professor Nathan Schneider, and lawyer and writer Janelle Orsi, that workers should own their own digital labor markets.⁶⁵ There is a growing volume of writing on platform cooperativism, as well as a community of practice that has formed around the conference of the same name and the Platform Cooperativism Consortium (platform-coop.net). Examples of already existing platform cooperatives include photographer-owned stock photography platform Stocksy, musician- and listener-owned streaming service resonate.is, and driver-owned Green Taxi Co-op in Denver. Other platforms that aren't cooperatives but have been designed together with workers to support worker power include Contratados.org (a “Yelp for migrant workers” by the Center for Migrant Rights), Turkopticon (where Mechanical Turk workers can share resources and information about employers), Alia (a portable benefits platform for home cleaners by the National Domestic Workers Alliance), and many others. Platform cooperativism is an important proposal with a growing group of adherents. At the same time, platform cooperativism will not be able to advance as a liberatory project if it fails to fully incorporate race and gender analysis, and it will advance most fruitfully if its practitioners integrate a design justice approach. Design justice, applied to the development of digital labor markets, means involving workers, worker advocacy organizations, and cooperatives from the beginning in the design of (cooperative, worker-owned) platforms in various sectors.

There are many other master narratives about design that must be challenged and replaced; unpacking them is one of many important tasks for design justice practitioners in the future.

Sites

Chapter 4 asked, “How do we imagine and construct more intentionally liberatory sites where design justice principles can come to life?” Privileged design sites are raced, classed, and gendered. We need to challenge the ways that the matrix of domination is reproduced within design sites like hackathons, hacklabs, makerspaces, and fablabs. Hopefully, these can be transformed into deeply diverse and inclusive spaces, and chapter 4 documents many ways that this is already happening. At the same time, we need to think beyond diverse participation alone, to consider how such sites might be reconfigured to help hard-code liberation, shift discursive power, and instantiate design justice pedagogies.

Although the chapter concludes with some suggestions for how to make design sites more inclusive, practical guides to organizing various kinds of sites according to design justice principles (like the *DiscoTech* zine) would be useful. Victoria Palacios has recently synthesized a set of extremely helpful guidelines from existing literature and how-to guides; her work is available at bit.ly/designeventguidelines. Besides opening privileged design sites to more people—in particular, those who are marginalized and multiply burdened under the matrix of domination—we also need to valorize and systematically resource subaltern design sites. In addition to actions that individual space or event organizers can take, we also need to think on the policy level. For example, what would it look like for cities, states, and countries to condition permitting, site allocation, and grants to hacker, maker, and innovation spaces in part based on diversity and inclusion plans and measurable targets?

In addition, although chapter 4 is an attempt to think about design sites through a design justice lens, it is beyond my capacity to elaborate a spatial theory of design justice, to deeply engage with the extensive literature in architecture and urban planning, or to do justice to the many people and organizations who already do that work. For example, the

Design Justice Platform, initially convened by architect Bryan C. Lee Jr. and his firm Colloqate Design, organized a series of local DesignAsProtest events in cities including New Orleans, New York, and Detroit on January 20, 2017. These events gathered architects and city planners to act in solidarity with and defend the communities most targeted by the incoming Trump administration. In September of 2018, the same group organized a Design Justice Summit in New Orleans, in affiliation with the American Institute of Architects (AIA).⁶⁶ The EquityXDesign group has developed an analysis of gender and racial disparity in architecture, organized a series of conferences, pushed the AIA to collect data and set targets for equity, conducted a series of surveys of professional architects and produced publications about ongoing disparities in the field, and created public-facing campaigns to demand equity in architecture.⁶⁷ In the future, it will be important for the Design Justice Network to develop closer ties with groups focused on design justice within architecture, urban planning, and related design domains.

Pedagogies

Chapter 5 focused on the question, “How do we teach and learn design justice?” It built on popular education methods and explored design justice pedagogies in both formal and informal educational spaces. In the chapter, I draw largely from my own experience teaching in a university setting. Some questions for further exploration include: What would it mean for institutional structures to support community-engaged pedagogies of technology design? And what are the challenges to realizing design justice pedagogies in an age of the neoliberalization of the educational system?

For example, the Boston Civic Media Consortium links educators from universities across the Greater Boston area who work with PAR, PD, or codesign approaches. In 2018, the consortium released a report that summarizes some of the key challenges to this kind of engaged pedagogy.⁶⁸ In the realm of institutional support, there is also a recent boom in tech ethics classes. This is driven in part by the public conversation about ethics and AI, as well as by funders like Omidyar, Mozilla, Schmidt Futures, and Craig Newmark Philanthropies, which in 2018 partnered to launch the Responsible Computer Science Challenge. This

grant competition supports the creation of classes that integrate ethics into undergraduate CS training.⁶⁹

At the same time, future work should explore design justice pedagogies in other learning sites. For example, there is an urgent need to discuss how to teach and learn design justice specifically with younger children, in high schools, and in community colleges, as well as to unpack the relationship between design justice approaches and the numerous different kinds of coding boot camps. For example, the design studio And Also Too has recently launched a *Consentful Tech UX/UI Un-Bootcamp*, which they describe as “a net-for-profit education program that will equip learners with digital design skills and result in prototypes of consentful tech.”

Simultaneously, there is a need to interrogate the dynamics that lie behind recent attempts to apply design thinking to education, and to teach all students design thinking. In a brilliant summary of growing pushback against calls to “rethink education,” educator Sherri Spelic writes: “Design Thinking aligns well with a certain kind of neoliberal enthusiasm for entrepreneurship and start-up culture. I question how well it lends itself to addressing social dilemmas fueled by historic inequality and stratification.”⁷⁰ As she notes, any approach to redesigning education that leaves history and structural inequality out of the picture is not an approach that will turn out well for youth of color, low-income youth, and others who have always been marginalized by the formal educational system. Instead, she argues: “Our students can see inequality. Many of them experience its injustices on a daily basis. Precisely here is where I would like to see us focus our educator energies: on helping students see and identify the faulty designs throughout our society that plague the most vulnerable among us. In order to dismantle and correct these designs and patterns, they must first be able to notice and name them. That’s the kind of design thinking I hope and wish for: Where ‘what’s wrong?’ drives our pursuit of ‘what if?’”⁷¹ Finally, the discussion of design justice pedagogies must be more closely linked with the movement for educational justice. This means connecting design justice work with student, teacher, and parent-led community organizing groups that focus on education, like Philly Student Union, People in Education in Detroit, Make the Road New York, Youth Justice Coalition in Los Angeles, and many others. It also means

linking with national networks like the Alliance for Educational Justice and with the new wave of teacher union organizing, such as the successful United Teachers Los Angeles (UTLA) strike. These and many other groups have been fighting for years to end the war on youth of color, dismantle the school-to-prison pipeline, and build power among youth organizers to demand quality education for all. True design justice pedagogies will be more tightly connected to youth-, teacher-, and parent-led struggles around the future of education.

Conclusions

#TechWontBuildIt is an exciting development. Successful worker-led campaigns to push Google to abandon Project Maven, to cancel Project Dragonfly, and to take #MeToo seriously are all important, as are the ongoing campaigns at Microsoft, Amazon, IBM, Salesforce, and other tech companies to end complicity with ICE's ongoing human rights violations. What's more, #TechWontBuildIt mobilizations are not single-issue campaigns. Many of the workers involved have built coalitions across firms and are tightly linked to the networked social movements that characterize the present cycle of struggles. It remains to be seen whether the current mobilization wave is a short-lived moment in response to the polarized political climate under the Trump administration, or the beginning of a sea change that has the potential to reshape the trajectory of sociotechnical design writ large.

Either way, hopefully design justice as an approach, and the growing Design Justice Network, can help provide some useful concepts and tools. Although design practices today too often systematically reproduce the matrix of domination, there is a growing community of design justice practitioners: people and organizations who work on a daily basis to leverage the power of design for collective liberation and ecological sustainability. I hope that this book has provided a window into that work. Together, let's build the worlds we need!

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Design Justice

Community-Led Practices to Build the Worlds We Need

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