Design Justice: towards an intersectional feminist framework for design theory and practice

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Design is key to our collective liberation, but most design processes today reproduce inequalities structured by what Black feminist scholars call the *matrix of domination*. Intersecting inequalities are manifest at all levels of the design process. This paper builds upon the Design Justice Principles, developed by an emerging network of designers and community organizers, to propose a working definition of design justice: *Design justice is a field of theory and practice that is concerned with how the design of objects and systems influences the distribution of risks, harms, and benefits among various groups of people. Design justice focuses on the ways that design reproduces, is reproduced by, and/or challenges the matrix of domination (white supremacy, heteropatriarchy, capitalism, and settler colonialism). Design justice is also a growing social movement that aims to ensure a more equitable distribution of design's benefits and burdens; fair and meaningful participation in design decisions; and recognition of community based design traditions, knowledge, and practices.*

Keywords: design justice, intersectional feminism, matrix of domination

Introduction

In June of 2015, at the Allied Media Conference in Detroit, a group of 30 designers, artists, technologists, and community organizers took part in the workshop "Generating Shared Principles for Design Justice." The goal of the workshop was to move beyond the frames of 'social impact design' or 'design for good,' to challenge designers to think about how good intentions are not necessarily enough to ensure that design processes and practices become tools of liberation, and to develop principles that might help practitioners avoid the (often unwitting) reproduction of existing inequalities. The draft principles developed at that workshop would come to be refined over the next few years, and were most recently (in 2018) released in the following form:

Design Justice Network Principles

This is a living document.

Design mediates so much of our realities and has tremendous impact on our lives, yet very few of us participate in design processes. In particular, the people who are most adversely affected by design decisions — about visual culture, new technologies, the planning of our communities, or the structure of our political and economic systems — tend to have the least influence on those decisions and how they are made.

Design justice rethinks design processes, centers people who are normally marginalized by design, and uses collaborative, creative practices to address the deepest challenges our communities face.

- We use design to **sustain, heal, and empower** our communities, as well as to seek liberation from exploitative and oppressive systems.

- We **center the voices of those who are directly impacted** by the outcomes of the design process.

- We **prioritize design's impact on the community** over the intentions of the designer.

- We view **change as emergent from an accountable, accessible, and collaborative process**, rather than as a point at the end of a process.

- We see the role of the **designer as a facilitator rather than an expert.**

- We believe that **everyone is an expert based on their own lived experience**, and that we all have unique and brilliant contributions to bring to a design process.

- We **share design knowledge and tools** with our communities.

- We work towards **sustainable, community-led and -controlled** outcomes.

- We work towards **non-exploitative solutions** that reconnect us to the earth and to each other.

- Before seeking new design solutions, **we look for what is already working** at the community level. We honor and uplift traditional, indigenous, and local knowledge and practices."

(Design Justice Network, 2016).

In this paper, I will attempt to further develop the approach articulated in the Design Justice Principles, and to explore design justice as a broader framework that might guide design theory and practice across a wide range of fields.

Naming oppressive systems: On intersectionality and the matrix of domination

Design is key to our collective liberation, but most design processes today reproduce inequalities that are structured by what Black feminist scholar Patricia Hill Collins calls the matrix of domination: white supremacy, heteropatriarchy, capitalism, and settler colonialism (Collins, 2002). These and additional

intersecting inequalities are manifest at all levels of the design process, including (but not limited to): designers, intended users, values, affordances and disaffordances, scoping and framing, privileged design sites, governance, ownership, and control of designed objects, platforms, and systems, and narratives about how design processes work.

The Design Justice Principles (above) were proposed in part as a response to this situation. These principles are an important starting point for growing a network of practitioners who care about articulating and more intentionally practicing design that, as much as possible, avoids reproducing structural inequality and oppression. The first principle states that design justice practitioners "seek liberation from exploitative and oppressive systems." More explicitly naming the oppressive systems that design justice seeks to counter can strengthen the approach. To do this work, we can draw upon the tradition of Black feminist thought.

Intersectionality

First, we need to briefly clarify the concepts of intersectionality and the matrix of domination. Black feminist thought fundamentally reconceptualizes race, class, and gender as interlocking systems: they do not only operate 'on their own,' but are often experienced together, by individuals who exist at their intersections. The analytical framework built on this fundamental insight from Black feminist thought and experience is called *intersectionality*. The term was first proposed by Black feminist legal scholar Kimberlé Crenshaw in her 1989 article "Demarginalizing the Intersection of Race and Sex: A Black Feminist Critique of Antidiscrimination Doctrine, Feminist Theory and Antiracist Politics." In the article, Crenshaw describes how existing antidiscrimination law (Title VII of the Civil Rights Act) repeatedly failed to protect Black women workers. First, she discusses an instance where Black women workers at General Motors (GM) were told they had no legal grounds for a discrimination case against their employer, because antidiscrimination law only protected single-identity categories. The Court found that GM did not systematically discriminate against all women, because the company hired white women, and that there was insufficient evidence of discrimination against Black people in general. Thus, Black women, who did in reality experience systematic employment discrimination as Black women, were not protected by existing law, and had no actionable legal claim.

In a second case described by Crenshaw, the court rejected the claims of a Black woman who claimed discrimination by Hugh Helicopters, Inc, because "her attempt to specify her race was seen as being at odds with the standard allegation that the employer simply discriminated 'against females'" (Crenshaw, 1989). In other words, the court could not accept that Black women might be able to represent all women, including white women, as a class. In a third case, the court *did* award discrimination damages to Black women workers at a pharmaceutical company, but refused to award the damages to all Black workers, under the rationale that Black women could not adequately represent the claims of Black people as a category. Crenshaw notes the role of statistical analysis in each of these cases: sometimes, the courts required Black women to include broader statistics for all women that countered their claims of discrimination; in other cases, the courts limited the admissible data to that dealing with Black women only. In those cases, the low total number of Black women employees typically made statistically valid claims impossible, whereas strong claims could have been made if the plaintiffs were allowed to include data for all women, for all Black people, or both. Later, in her 1991 Stanford Law

Review article "Mapping the Margins: Intersectionality, Identity Politics, and Violence Against Women of Color," Crenshaw (1991) powerfully articulates the ways that women of color often experience male violence as a product of intersecting racism and sexism, but are then marginalized from both feminist and antiracist discourse and practice, and denied access to specific legal remedies.

The concept of intersectionality provided the grounds for a long, slow paradigm shift that is still unfolding in the social sciences, legal scholarship, and in other domains of research and practice. This paradigm shift is also beginning to transform the domain of design. The shift away from what Crenshaw calls 'single-axis analysis,' where race or gender are considered as independent constructs, has wide reaching consequences for design theory and practice.

Universalist design principles and practices, as well as single-axis evaluations of fairness in design, erase certain groups of people: specifically, those who are intersectionally disadvantaged (or multiply-burdened) under white supremacist heteropatriarchy, capitalism, and settler colonialism. When designers do consider inequality in design (and most professional design processes do not consider inequality at all), they nearly always employ a single-axis framework. Most design processes today are therefore structured in ways that make it impossible to see, engage with, account for, or attempt to remedy the unequal distribution of benefits and burdens that they reproduce. As Crenshaw noted, feminist theory and antiracist policy that is not grounded in an intersectional understanding of gender and race cannot adequately address the experiences of Black women when it comes to the formulation of policy demands. Design justice holds that the same is true when it comes to 'design demands.'

The matrix of domination

Closely linked to intersectionality, but less widely used today, the *matrix of domination* is a term developed by Black feminist scholar Patricia Hill Collins to refer to race, class, and gender as interlocking systems of oppression, rather than each operating 'on its own.' It is a conceptual model that helps us think about how power, oppression, resistance, privilege, penalties, benefits, and harms are systematically distributed. When she introduces the term, in her book *Black Feminist Thought* (2002), Collins emphasizes race, class, and gender as the three systems that historically have been most important in structuring most Black women's lives. She notes that additional systems of oppression structure the matrix of domination for other kinds of people. The term, for her, describes a mode of analysis that includes any and all systems of oppression that shape people's lives.

This framework also emphasizes that every individual simultaneously receives both benefits and harms, or 'penalty and privilege,' based on their location within the interlocking systems of oppression that structure our experience. As Collins notes, "Each individual derives varying amounts of penalty and privilege" within the matrix of domination (Collins, 2002). An intersectional Black feminist analysis thus helps us each see that we are simultaneously members of multiple groups, both dominant and subordinate. Design justice urges us to consider how design (affordances, objects, systems, processes) simultaneously distributes both penalty and privileges to individuals based on their location within the matrix of domination, and to attend to the ways that this operates at various scales.

In Black Feminist Thought, Collins notes that "People experience and resist oppression on three levels: the level of personal biography; the group or community level of the cultural context created by race, class, and gender; and the systemic level of social institutions. Black feminist thought emphasizes all three levels as sites of domination and as potential sites of resistance" (Ibid.). Design justice as a framework urges us to explore the ways that design relates to domination and resistance at each of these three levels (personal, community, and institutional).

For example, at the personal level, we might explore how interface design affirms or denies aspects of a person's identity through features such as, say, a binary gender dropdown during account profile creation. More broadly, we might consider how design decisions play out in the impacts they have on different individual's biographies or life-chances. At the the community level, we might explore how platform design fosters certain kinds of communities while suppressing others, through setting and implementing community guidelines, rules, and speech norms, instantiated through different kinds of content moderation systems. At the institutional level, design justice asks us to consider the ways that various design institutions reproduce and/or challenge the matrix of domination in their practices. This might include large companies (Google, Apple, IDEO), venture capitalists, standards-setting bodies (ISO, W3C, NIST), laws (such as the Americans with Disabilities Act), and universities and educational institutions that train designers.

Additionally, institutions design objects, systems, and processes that they then use to distribute benefits and harms across society. For example, the ability to immigrate to the United States is unequally distributed among different groups of people through a combination of laws passed by the U.S. Congress, software decision support systems, executive orders that influence enforcement priorities, and so on. Within the broader immigration system, visa allocation is an algorithm that has been designed according to the ideology and political priorities of those who hold political power.

Finally, Black feminist thought also emphasizes the value of situated knowledge over universalist knowledge. In other words, particular insights about the nature of power, oppression, and resistance come from those who occupy a subjugated standpoint, and knowledge developed from any particular standpoint is always partial knowledge.

A tentative definition of design justice
Having briefly explored the ideas of intersectionality and the matrix of domination, I offer the following tentative definition of design justice:

> *Design justice is a field of theory and practice that is concerned with how the design of objects and systems influences the distribution of risks, harms, and benefits among various groups of people. Design justice focuses on the ways that design reproduces, is reproduced by, and/or challenges the matrix of domination (white supremacy, heteropatriarchy, capitalism, and settler colonialism). Design justice is also a growing social movement that aims to ensure a more equitable distribution of design's benefits and burdens; fair and meaningful participation in design decisions; and recognition of community based design traditions, knowledge, and practices.*

This definition emphasizes that design justice is both procedural and distributive: we have an ethical imperative to systematically advance the participation of marginalized communities in all stages of the technology design process; through this process, resources and power can be more equitably distributed. Procedural goals are reflected in the second Design Justice Principle ("we center the voices of those who are directly impacted by the outcomes of the design process"), while distributive goals are emphasized in the third ("we prioritize design's impact on the community over the intentions of the designer").

In this definition, design justice also has both normative and pragmatic justifications: it is based on broader ideals of democratic inclusion and social justice in all spheres of life; at the same time, design processes that operate according to these ideals can produce products, processes, and systems that work better for all of us, in the long run.

This is not meant to be the only definition of design justice, but rather a provisional proposal that we can use to build a conversation. There is already a growing community of people who identify with the term design justice, and many have worked to explore the idea and clarify what it might mean.

Design justice as a framework asks us to engage with a series of questions about how design processes currently work, and about how we want them to work. These include questions of equity (who gets to do design?), beneficiaries (who do we design for, or with?), values (what values do we encode and reproduce in the objects and systems that we design?), scope (how do we scope and frame design problems?), sites (where do we do design, what design sites are privileged and what sites are ignored or marginalized, and how do we make design sites accessible to those who will be most impacted?), ownership, accountability, and political economy (who owns and profits from design outcomes, what social relationships are reproduced by design, and how do we move towards community control of design processes?), and discourse (what stories do we tell about how things are designed?) In the next section of this paper, I will briefly engage with several of these questions, in an attempt to illustrate the generative power of the proposed definition of design justice.

Designers: Who gets (paid) to do design?

Design justice as a theoretical framework recognizes the universality of design as a human activity. "Design," in a general sense, means problem-solving; all human beings participate in design (Papanek & Fuller, 1972). Design theorist Anne-Marie Willis (2006) put it this way: "Design is something far more pervasive and profound than is generally recognised by designers, cultural theorists, philosophers or lay persons; designing is fundamental to being human — we design, that is to say, we deliberate, plan and scheme in ways which prefigure our actions and makings [...] we design our world, while our world acts back on us and designs us." Through this lense, and inspired by feminist critiques of the invisibilized, unpaid labor of reproduction (for example, see Dalla Costa, 1999), design justice includes a call for broader recognition of everyday design practices.

At the same time, as Willis notes, 'design' is also often used to refer to expert knowledge and practices contained within a particular set of professionalized fields, including software development, architecture, planning, and industrial design, as well as in various media and audiovisual industries, such as graphic design. Within a discussion of 'design' as a specialist activity, or as a certain type of work accomplished by experts, there is also a significant and steadily growing

literature on design practices by marginalized people. Alternative histories of technology and design help to recuperate and center people, practices, and forms of expertise that have long been erased by mainstream theory and history, both in scholarly and popular writing. Some histories of invisibilized technology design work have been widely popularized; for example, the 2016 film Hidden Figures chronicles the work of Katherine Johnson and other Black women who worked for NASA as "human computers," coding space flight trajectories (Shetterly, 2016). Additionally, recent literature on innovation decenters the myth of the individual designer and emphasizes the key roles played by 'lead users' who constantly modify, hack, repurpose, and reuse technologies in order to better fit their needs (Von Hippel, 2005).

With these caveats — all humans design, design is not only the domain of paid experts, the contributions of expert designers and technologists who are not wealthy and/or educationally privileged white cisgender men have been erased from history, and professional designers constantly draw both from one another and from the unsung design work of everyday people — it is still possible and valuable to consider the ways that the matrix of domination systematically structures paid professional design work.

Although the discussion that follows could easily apply to any of the professionalized design fields, we will focus on the U.S. software industry. Designers in this sector are highly rewarded, both economically and culturally, and have achieved status as iconic figures who stand in for the promise of innovation and entrepreneurialism under informational capitalism.

There has been a growing public conversation about the fact that the most advanced sector of the economy might well be the most unequal. In 2016, many Silicon Valley firms, under pressure from mobilized publics, released diversity data about their employment practices. Unsurprisingly, this data did not paint a flattering picture of progress towards gender and racial equity. Overall, white and asian cisgender men dominate software industry jobs. For example, in the United States, women overall hold 25% of these jobs; Black women hold just 3% of computer programming jobs, and Latinas, 1% (Ashcraft, Eger, & Friend, 2012). Even when women and People of Color (POC) are employed in technology design, development, and product management, in a context of extremely hierarchical organizations, only a handful of women have positions at the top. Gender diversity on the boards of top software and technology companies tends to range between just 10% to 25% (almost exclusively white) cisgender women. For example, Apple's board has six men and two women, Google, eight and three; Microsoft, eight and two; Twitter, seven and one; eBay, eleven and one, and so on. Yahoo, with a board composed of six men and three women, is the top-tier software firm that comes closest to gender parity at the highest decisionmaking level (Evans and Rangarajan, 2017).

These dismal employment equity statistics reflect broader raced and gendered patterns that persist across nearly all sectors of the U.S. economy (Weeden, Cha, and Bucca, 2016; Wilson, 2016; Arce and Segura, 2016). Racial and gender inequality in who gets paid to do design is consistent with persistent structural inequality across a stratified labor market; it is also shaped by inequalities in access to education. In a broader context of rising wealth inequality, a winner-take-all dynamic is at play, with wealthy whites withdrawing children and tax dollars from schools that used to serve mixed income and multiracial populations. White flight, and later, gentrification and the recolonization of urban cores, have produced a school system where nearly half of Black & Latino students attend schools with poverty rates higher than 75%, vs less than 5% of

Whites (Orfield, Ee, Frankenberg, & Siegel-Hawley, 2016). Schools in low-income communities of color are rarely allocated the resources they need to provide high quality STEM education. As a result, Black, Latinx, and low-income students are statistically more likely to be taught by less experienced teachers, receive less funding per student, face lower expectations, score lower on standardized STEM tests, and are less likely to enter higher education in STEM fields (Flores, 2007). Other factors that militate against more women, POC, and LGBTQI people gaining STEM education, and thereby moving into lucrative design positions in the software and technology professions, include the defunding of public education, the rise of mass incarceration and the school to prison pipeline, school pushout, and in-school abuses faced by LGBTQ and GNC youth, especially LGBTQ youth of color (Costanza-Chock, Schweidler, & Transformative Media Organizing Project, 2017).

Towards equity in the tech workforce: organizations that build the design skills of more women, POC, and LGBTQ folks.

Despite recent attention to the lack of diversity in the tech sector, the debate about gender and racial equity in science and technology is not at all new. Many organizations have long worked towards gender parity in STEM fields. For example, the National Center for Women & Information Technology (NCWIT), a community of several hundred companies, universities, government agencies, and nonprofit organizations, was founded in 2004 by the National Science Foundation to advance women and girls' participation in ICTs. For a recent review of best practices towards gender equity in computer science education, see Hamilton, et. al. (2016). In addition to longstanding organizations and initiatives, a number of groups have recently emerged that focus on building the design, tech, and media skills of girls and women, POC, and LGBTQ folks. For example, Black Girls Code, started in 2011, teaches young African American women the basics of computer science and software development. Girls Who Code (http://girlswhocode.com), launched in 2012, focuses on eliminating the gender gap in the technology and engineering sectors. Code2040, based in San Francisco, works "to ensure that by the year 2040 - when the US will be majority Black and Latinx - we are proportionally represented in America's innovation economy as technologists, investors, thought leaders, and entrepreneurs." (Code2040.org, 2017). The Lesbians Who Tech Summit provides a physical meetup and networking space for lesbians working at all levels of technology industries. Trans Tech Social Enterprises aims to provide jobs and job training in web design to trans* folks in the Chicago area, and Trans*H4CK is a series of hackathons by and for trans* and gender non-conforming people. Trans*H4ACK has grown rapidly, and has organized local events in San Francisco, Boston, and many other cities (See http://www.transhack.org).

These and similar initiatives are important developments. However, design justice impels recognition that employment in paid design fields is important, but is not the whole picture. We also need to rethink a number of other aspects of current design practice, including the intended benificiaries of design.

'Users:' Who do we design for/with?

We must also examine design beneficiaries. In other words, who are we designing for? Journalist and feminist activist Laurie Penny puts it this way:

"There is nothing wrong with making things that people want. The problem is that personhood and desire are constrained by capital; money affects whose wants appear to matter. The kids in Startup House may want a pizza delivery drone, but not in the same way low-income families want health care, or the elderly men lying in their own faeces on Howard Street want a safe place to sleep. There is nothing wrong with making things people want. It's just that too little attention is being paid to the things people need. The wants and needs of young, healthy, middle-class people with connections and a reasonable amount of spare cash are overrepresented among Start-up City's priorities. For one thing, those are the problems with solutions that sell. For another, given a few million dollars and a team of semi-geniuses, those problems are easy to solve. Structural social injustice and systemic racism are harder to tackle – and that's where the tech sector has, until recently, thrown up its hands." (Penny, 2014).

To Penny's critique of the classed prioritization of users within capitalist start-up scenes, we can add that the 'default' imagined users are often raced, classed, and gendered within a worldview produced by the matrix of domination and internalized, then reproduced, by design teams. Designers most frequently assume that the unmarked user has access to a number of very powerful privileges, such as U.S. citizenship, English language proficiency, access to broadband internet, a smartphone, no disabilities, and so on. Diversifying the software workforce, unfortunately, will not automatically produce a more diverse default imagined user. Unless the gender identity, sexual orientation, race/ethnicity, age, nationality, language, immigration status, and other aspects of end user identity are specified in advance, the imagined user for whom technology design teams develop products tends to default to the dominant social group. In the U.S., this means straight white middle class cisgender men, with educational privilege and high technological literacy, citizenship, native English speakers, and so on. Even with diverse design teams, the types and scope of 'problems' addressed by most product design ends up limited to this tiny, but potentially highly profitable, subset of humanity.

There is growing awareness of this problem, and a number of designers, projects, events, and communities of practice who are attempting to address it through intentional focus on designing for, or with, communities who are usually invisibilized in the world of technology. For example, the Trans*Hack series of hackathons focus on trans* and gender nonconforming communities; the Make the Breast Pump Not Suck! Hackathon focuses on breastfeeding parents; and Contratados.org, operates like a "Yelp, for migrant workers" to review potential employers and recruitment agents, educate migrant workers about their rights, and protect them from transnational recruitment scams.

Accountability: "Nothing About Us, Without Us"

We began this section by considering the ways that race and gender structure employment in the software and technology design industries; we then introduced a discussion of the ways the matrix of domination structures our ideas about who to design for. This shifts us from an argument for equity (we need diverse designers, and diverse users) to an argument for accountability (those most affected by the outcomes should lead and own digital design processes and products). In a nutshell: according to both the Design Justice

Principles and our tentative definition of design justice, the most valuable 'ingredient' in design justice is the full inclusion of people with direct lived experience of the conditions the design team is trying to change.

This reflects the 'participatory turn' in technology design; for example, see intersecting histories of User-Led Innovation, Participatory Design (Schuler & Namioka, 1993; Muller & Kuhn, 1993), and Feminist HCI (Bardzell, 2010, and see recent work by the organizers of the Design, Research, and Feminism(s) Track at DRC2018 (Ramia Mazé, Laura Forlano, Li Jonsson, Kristina Lindström, and Åsa Ståhl). Additionally, design justice draws from the disability justice movement, whose activists popularized the phrase "Nothing About Us, Without Us" (Charlton, 1998). The key lessons include: involving members of the community that is most directly affected by the issue that you are focusing on is crucial, both because it's ethical, and also because the tacit and experiential knowledge of community members is sure to produce ideas, approaches and innovations that a non-member of the community would be very unlikely to come up with. It is also possible to create formal community accountability mechanisms in design processes.

Values: What values and assumptions do we encode in designed obects and processes?

Scholars of science and technology have long noted that values are encoded in, and reproduced through, the affordances of the objects, processes, and systems that we design (Friedman, 1997; Flanagan, Howe, & Nissenbaum, 2008). In addition to shifting designers and users, design justice proposes systematic evaluation of the values that we choose to encode in designed objects and systems. Intersecting forms of oppression, including white supremacy, cisnormativity, heteropatriarchy, capitalism, and settler colonialism, are hard-coded into designed objects and systems. This typically takes place not because designers are intentionally 'evil,' but largely through structural forces: resources for design are typically allocated based on potential profitability, and that means most resources are dedicated to design problems that affect the wealthiest groups of people. In addition, at the level of the individual designer or design team, several mechanisms that introduce unintentional bias are at play. These include assumptions about the 'unmarked' end-user, limited feedback loops, and (most recently), the use of systematically biased datasets to train algorithms using machine learning techniques (Munoz, Smith, & Patil, 2016).

The emergence of 'values in design' is an important shift in design thinking and practice, but design justice goes further, to consider not only the ways that we hard-code oppressive values and norms into affordances, but also the transformative potential of broader participation in the design process, as well as ownership and stewardship of the results. We might consider case studies in areas as diverse as consumer electronics (cameras), algorithm design in sectors such as banking, housing, and policing, and on the other end of the spectrum, intentional values based design in projects like Contratados, and so on. For example, "Native Americans, African Americans, and other people of color are banned disproportionately because, to Facebook, a "real" name sometimes means "traditionally European" (Kirkham, 2015). This happens, in part, because the algorithms used to flag 'real' vs 'fake' names were trained on real name datasets that over-represent European names, using machine learning and natural language processing techniques.

The LGBTQ community, and in particular, drag queens, did successfully organize to force Facebook to modify its 'real name' policy. Many LGBTQ folks choose to use names that are not their given name on social media platforms, for various reasons, including a desire to control who has access to their self presentation of sexual orientation and/or gender identity (SOGI). For many, undesired 'outing' of a non hetero- and/or cis-normative SOGI may have disastrous real-world consequences, from teasing, bullying, and emotional and physical violence from peers, to loss of family, a stable housing situation, access to resources for education, and so on. Facebook systematically flagged and suspended accounts of LGBTQ people who it suspected of not using 'real names,' especially drag queens; drag queens fought back. After several prominent drag queens began to leave the hegemonic social network for startup competitor Ello, Facebook ultimately implemented both modifications to its real-name flagging and dispute process and instituted a new set of options for users to display gender pronouns and gender identity, as well as more fine grained control over who is able to see these changes. These examples demonstrate the ways that dominant values are typically encoded in the affordances of systems that we design and build - in this case, assumptions about names, pronouns, and gender that were built into various aspects of Facebook interface design. They also demonstrate how, typically through user mobilization, platforms and systems can be redesigned to encode alternative value systems.

Overall, design justice builds on the foundational work in values in design (VID). VID emphasizes that designers make intentional choices about the affordances and aesthetics of objects and systems that they create. The approach proposes rubrics for analysis of how designed affordances encode particular value sets, as well as evaluation of design projects according to their values. However, design justice as an approach goes several steps further. First, VID is 'apolitical,' in the sense that the approach suggests that designers should make conscious choices about the values they wish to encode, but avoids a normative stance as to what such values should be. Design justice, as we have seen, begins instead with an intersectional analysis of the matrix of domination, and proposes a systematic effort to encode liberatory values that counter white supremacist capitalist heteropatriarchy, ableism, and settler colonialism. Design justice centers the perspectives and values of Queer, trans*, Black and POC, indigenous, migrant, decolonial, antiauthoritarian, and commons-based communities, among others, while recognizing that there is always conflict both within and between marginalized groups. Additionally, where values in design tends to focus on the affordances and aesthetics of designed objects or systems, design justice is concerned with all aspects of design, including the values that are reproduced in the social relations of power of the design process itself, as well as what happens to the profits, attribution, and governance of the designed object or system.

Conclusions: Towards Design Justice

We began with the Design Justice Principles, then moved to a brief discussion of intersectionality and the matrix of domination. We then posited a tentative definition of design justice as a framework. We explored the implications of design justice for questions about who gets to do design, who we design for (or with), and the values we encode in designed objects and systems.

The design justice framework raises many other questions that we will not be able to explore here in depth, such as design scoping, sites, platforms, and pedagogy. Design justice encourages a shift from deficit to asset based approaches to design scoping, the formal inclusion of community members in

design processes during scoping; and the valorization of intentionally inclusive hacker and makerspaces (such as Liberating Ourselves Locally, a QTPOC led hackerspace in Oakland). Design justice also has implications for the current discussion of platform cooperativism (Scholz & Schneider, 2016); projects that challenge the matrix of domination at the level of the platform include worker-centered projects like Turkopticon, SherpaShare, Stocksy, Union Taxi, and more. Applied to labor markets, design justice requires that designers and developers involve workers, worker advocacy organizations, and cooperatives from the beginning in the design of (cooperative, worker owned) platforms in various sectors. Additionally, a design justice framework requires that we consistently attend to the question of who receives credit for innovative design work. For example, social movement media innovations are often adopted by the journalism profession and by the broader cultural industries, although stripped of their original counterhegemonic intent. Examples might include Indymedia and CNN iReports, TxtMob and Twitter, and DIY livestreams from DeepDish TV to Occupy (GlobalRevolution, Timcast) to Facebook Live (Costanza-Chock, 2012).

These and other questions about design practices will have to wait for future explication. It will also be useful to develop rubrics for evaluation rooted in design justice: how do we determine the degree to which a given design project, process, product, or object follows the design justice principles? We might develop and share design justice tools and toolkits, guides, checklists, and case studies, along with best practices and awards.

Indeed, the Design Justice Network is already engaging in some of these activities. There are a growing number of organizations, spaces, networks, and events that share a vision of design justice. Design organizations like And Also Too, in Toronto, Intelligent Mischief, in Brooklyn, and the worker-owned cooperative Research Action Design (RAD.cat), are putting design justice principles into practice in their daily work.

There is also a growing community that focuses on challenging the design of algorithmic bias, with a wave of recent feminist publications such as Virgina Eubanks' *Automating Inequality* (2018) and Safiyah Noble's *Algorithms of Oppression* (2018). There are new organizations such as Data4BlackLives, the AI Now Institute, Data and Society, the Data Justice Lab, the Data Equity Lab, and the Algorithmic Justice League, and conferences such as Fairness, Accountability, and Transparency in Machine Learning.

Finally, the Design Justice Network is growing rapidly. This network, composed of designers who work with social movements and community based organizations, as well as community organizers who use design as a tool to build power in their neighborhoods, authored the Design Justice Principles that opened this paper. The network has produced a series of 'zines, and coordinated a Design Justice Track at the Allied Media Conference in 2017 and again in 2018. I urge readers to explore the work of the Design Justice Network, sign on to the Design Justice Principles, and develop additional work through the design justice lense.

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