CHAPTER 19

What We Aren't Seeing

Exclusionary Practices in Visual Media

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Introduction

Disability in visual culture is arguably flawed, with ideas and concepts created and accepted in the vacuum of ableist, capitalist environments. "Disability has always been part of the human condition," write art historians Keri Watson and Jo Mann. "Throughout history, people with disabilities have often served as visual and cultural objects, rather than as active participants in and creators of culture and media." Mimi Onuoha, Catherine D'Ignazio, Lauren Klein, and other scholars establish that visual media have the power to communicate injustices, evoke uncomfortably necessary conversations, and raise the volume on silenced voices. Recent scholarship and strategies have focused on visual media under the lens of misinformation and misrepresentation with the aim of training visual consumers' palates to distinguish propaganda from critical discourse. Missing from this mainstream dialogue is that visuals can be equally exclusionary and harmful to persons with disabilities.

Information educators play a role in disrupting the assumed perceptions around disability and can challenge situations where common remediations fall short, where barriers are introduced, and where damaging stereotypes are perpetuated.

Terminology

We want to introduce first the terminology that will frame our discussion. In writing this, we learned and unlearned concepts around disability and visual culture. We recognize



that we bring our own positionalities to the topic: both as women with disabilities and as a white woman and a black woman, among other distinctions that marginalize us and shape our experiences and expertise.

Accessibility, at its core, encompasses "qualities that make an experience open to all." Accessibility exclusions are often categorized as temporal—existing in situational, temporary, or permanent capacities—and functional—disruptions in sight, sound, mobility, or cognitive ability. Accessibility as an attribute is largely discussed in terms of design methods, and, as we consider how to frame our work on visual media, we are no exception. While a comprehensive analysis of the derivations and uses is not our goal here, it's important to acknowledge their evolution to include diversity, cultural, and contextual aspects of access and provide explicit meanings to our use of these terms.

Accessible design is derived from the "ADA [Americans with Disabilities Act] Standards for Accessible Design," published in 1991 and revised in 2010.⁵ It's commonly tethered to an outcome-based approach where the needs of people with disabilities are specifically addressed.⁶ Recent definitions transition away from the word *disability*, proposing accessible design as "focused on diverse users to maximize the number of potential users who can readily use a system." *Universal design*, however, strives for usability "by all people, to the greatest extent possible, without adaptation or specialized design." It pushes the designer to address a barrier issue from a broader angle of access for everyone.⁹

Inclusive design is more variably defined but shifts from explicitly connecting with disability and acknowledges that it isn't always possible or appropriate to design one product to address all needs—the goal of universal design.¹⁰ It's "design that considers the full range of human diversity with respect to ability, language, culture, gender, age and other forms of human difference."¹¹ Inclusive design takes into account an ever-evolving and expanding audience while accepting that more can always be done.

The 1964 Civil Rights Act enabled the disability community to frame the needs of the disabled as rights; it paved the way for the disability rights movement and the 1990 ADA. It was during this time that the term *ableism* emerged to serve "as an analytical parallel to sexism and racism for those studying disability as social creation." Ableism focuses on the normative way for people to function, aiming to correct disabled individuals to align them more with that standard, rather than tap their existing abilities and design a more broadly accessible environment. Those who don't fit the ideal are seen to require charity to fill the gap.

Critical race theory, a framework and social movement, also arose from the Civil Rights Movement in the 1970s and '80s.¹⁴ Legal scholar Kimberlé Crenshaw, as paraphrased by Janel George, defines critical race theory as an "evolving and malleable practice" that "critiques how the social construction of race and institutionalized racism perpetuate a racial caste system that relegates people of color to the bottom tiers." This definition includes *intersectionality*, framing the intersection of other identities, including gender identity, sexuality, disability, and more. George adds that "racism is not a bygone relic of the past.... The legacy of slavery, segregation, and the imposition of second-class

citizenship on Black Americans and other people of color continue to permeate the social fabric of this nation."16 Today, the framework is used to examine policies, systems, and structures that claim race neutrality or race color blindness.

Disability justice builds on the civil rights and critical race theory movements. Developed by "Black, brown, queer, and trans members of the Disability Justice Collective," 17 disability justice centers the intersectionality of the various systems of oppression in ten principles. 18 It's a lens to examine existing disability and human rights discourse to move toward more equitable and inclusive practices.

Finally, critical design, introduced in the early 2000s, is an alternative to the materiality-focused mainstream design as a way to provoke debate and investigate ethical, social, and design ideologies. 19 This theory was under-articulated, 20 so advocates turned to critical theory, adopting systems, strategies, and vocabulary to ground critical design theory and apply them to the design process. Aimi Hamraie, Sara Hendren, Michelle Murphy, and other scholars and practitioners have integrated critical race theory, feminist theory, and disability justice into critical design practice to address inequitable designs in curriculum, visual content, and technology for persons with disabilities.²¹

Complexities to Inclusivity

Critical design is the aim. Considering the inclusivity of visual media and how it's discussed, we should clarify what being inclusive means and where the gaps exist. We need to acknowledge the popular yet perfunctory focus on interventions that address the specific needs of a narrowed and privileged class instead of inclusive practices that provide wider accessibility. Here we reflect on the work that highlights problematic compromises or oversights and where we need to evolve our approaches.

Ableism and the Multilayered "Other" Identity

In 2011, the World Health Organization (WHO) and the World Bank reported that 15 percent of the world's population (over a billion) had a disability.²² In 2016, the Centers for Disease Control and Prevention shared that 61 million people in the US were living with a disability.²³ This data shows the prevalence of disability, but the numbers do not take into account the wide range of disabilities and experiences of those with one or more disabilities, as well as the intersectional identities that may exist for disabled individuals, such as race, gender, ethnicity, sexuality, and so on, that shape the individual and how they experience the world.²⁴

In defining accessibility, we distinguished between temporal and functional categories. Our efforts are inspired by Microsoft, which created the Persona Spectrum as a component of a broader effort toward inclusive product design; the spectrum presented a matrix of these categories "to help foster empathy and to show how a solution scales to a broader audience."25

Reviewing the matrix in table 19.1, we see how the number of those with disabilities may fluctuate; someone with an eye injury, for example, has a temporal visual disability. But this matrix also highlights situational access issues that may not traditionally be labeled as disabilities (e.g., a distracted driver unable to read a complicated road sign). Presenting these scenarios alongside each other, the model recognizes the diversity of access challenges that can be addressed in designing for visual restriction, but also the power of removing silos in how we discuss an individual's identities and their access barriers.

Table 19.1

Based on the Persona Spectrum introduced by Microsoft, this matrix aligns functional disability categories across temporal categorizations, illustrating the fluctuation and intersection of disability one can experience. Albert Shum et al., *Inclusive Microsoft Design* (Microsoft, 2016), 41–44, https://download.microsoft.com/download/b/0/d/b0d4bf87-09ce-4417-8f28-d60703d672ed/inclusive_toolkit_manual_final.pdf.

| | | Temporal Disability Categorizations | | | |
|---|-----------|-------------------------------------|---------------|-------------------------|--|
| | | Permanent | Temporary | Situational | |
| Functional Disability Categorizations | Sight | Blind | Eye injury | Distracted driver | |
| | Sound | Deaf | Ear infection | Bartender (in loud bar) | |
| | Mobility | Amputee | Broken arm | Parent (holding child) | |
| | Cognition | Nonverbal | Laryngitis | Heavy accent | |

The use of categories has its benefits—particularly when shaping accessibility interventions that provide the broadest access—but we also run the risk of perpetuating harmful labels, however temporary. As Jay Timothy Dolmage explains in *Academic Ableism*, higher education, in particular, extends an ableist culture that encourages students and teachers alike "to accentuate ability, valorize perfection, and stigmatize anything that hints at intellectual (or physical) weakness." The disability label can perpetuate the idea of individuals belonging to a lesser "other" group requiring charity versus equitable participation in society.

Further, disability identity is often coupled with identities that additionally impact this equitable participation. An estimated 18 percent of US Black adults have a disability, and two in five Indigenous people have a disability. The most recent *Annual Report on People with Disabilities in America* found that approximately 26 percent of people with disabilities are living in poverty, as opposed to 11.4 percent of those without disabilities. Only 16 percent of people with disabilities have received a college degree and, as a whole, earn over \$8,000 less a year than their nondisabled counterparts earn. These numbers don't take into account the fluid disabilities that may temporarily impact an individual, the complexities of multiple disability reporting, nor underreporting by minority groups.

Ableism places the burden of enabling access on individuals who must navigate available resources to acquire costly technologies, for example, while often living with additional economic, educational, and societal disadvantages. Critical design pivots this

avalanche of burden, and this is where we will explore how visual creators can more equitably carry the responsibility to make visual media more accessible.

Exclusionary Practices in Visual Media

While there are many examples, we'll examine three prevalent areas of visual media exclusion that we can collectively work to address.

1. Representation. Visual media, specifically marketing media, reinforces and reflects existing biases and influences attitudes toward cultural groups and their positions in a given society.²⁹ There are countless examples of harmful images that perpetuate racist, sexist, and other harmful ideas over time. 30 "Representation matters" is a rallying cry for a new ideal—pushing not just to include minority groups as token or background figures to a white and able-bodied version of a "normal" population, but to present minorities in those same high-status and influential positions. Advertising practice has evolved from the openly derogatory images of the past, but visual creators need to stay vigilant in their representation of minority groups when they create and recognize their power in societal perception and norms.³¹

> We need to consider not only our scholarship but also what we put forth as examples in both the classroom and outside of it. It is our responsibility to continually reflect and be open to criticism that may illuminate our own ingrained biases to further more accurate representation.

2. Alt text. Representation needs to be perceivable to all. For digital visual media, alternative text, or alt text, enables nonvisual consumers or those with cognitive disabilities to access the visual's information. The presence of alt text—as an image attribute tag, caption, and so on—allows assistive technology, such as screen readers, to announce the text in place of the images; provides an alternative when an image can't load or is blocked; and adds information that search engines factor into their evaluation of a page's content.32

> Alt text is one of the more difficult accessibility remediations. Its reliance on context and thus dependence on an individual writer's interpretation can contribute to nonintuitive, exclusionary outcomes.

Exclusionary practice 1: An image is missing alt text.

Not all images require alt text. Decorative graphics or stock photos often do not add anything beyond a visual break. Marking them "decorative" lets assistive technology know that the image can be safely ignored. More often, though, images provide additional or complementary information. In this case, missing alt text denies a consumer subset access to the same information as visual consumers who are not dependent on alt text.

Exclusionary practice 2: The available alt text is contextually damaging.

In their piece on including race in alt text, Tolu Adegbite stated, "Writers of alt text hold power in shaping the experience and perception of screen-reader users." This power can feel like a burden to get right, and the draw to include all possible details is hard to resist. Alt text best practices often steer writers toward succinct alt text that provides only information that the visual adds without repeating any accompanying text. However, when it comes to images of people, omissions of race and gender may perpetuate racism and gender inequality. Take the image in figure 19.1.



Figure 19.1

Black author Kai Alexis Smith with her service dog, Storm. The inclusion of race descriptors here curtails problematic white-centric assumptions. Photo credit: Waddell Photography. Photo capture: December 2021. Location: Cambridge, MA.

Alt text without reference to race: Author Kai Alexis Smith with her service dog, Storm.

Alt text with reference to race: *Black* author Kai Alexis Smith with her service dog, Storm.

Haben Girma, a Black Deafblind lawyer and disability justice advocate, explains that in the absence of race references, as in the example above, the default is that the subject is assumed to be white because white is "normal." The representation is invisible to alt-text consumers. Girma cautions, "Don't leave room for the assumptions to set in, because those assumptions can be terribly harmful."34

Such inclusion of race, gender, and ethnicity should not be assumptions. If the image's subjects can be consulted for their self-identification, these references add correct attributes that counter exclusionary assumptions. If such confirmations cannot be made, guessing such information only perpetuates biases and misconceptions.35

Lastly, where human-written alt text may be flawed, artificial intelligence isn't yet a solution. The 2015 Google Photo app example that tagged two black people as gorillas demonstrates that human intervention, however imperfect, is still required to remediate the harmful limitations and inaccuracies of artificial intelligence and other human-developed technological systems.³⁶

3. Color accessibility. Unlike alt text, color accessibility is far more prevalent in standard visualization practice. Color blindness-friendly palettes and color blindness simulators are widely available, providing creators cues and resources to make images accessible to those with this disability. However, embracing critical design means expanding beyond color blindness to consider color accessibility for a broader range of experiences.

> Exclusionary practice: Visualization accessibility centered on color blindness.

In January 2021, Frank Elavsky, a data visualization engineer, began a Twitter thread with, "Data visualization cares disproportionately far too much about designing for color blindness relative to other disabilities that are more common."37 Elavsky, the creator of Chartability,38 a resource for ensuring accessibility of data visualizations, systems, and interfaces, is part of a growing contingent in the data visualization community that is reshaping the conversation around accessibility and data visualization.

In his Twitter manifesto, Elavsky explained that red-green color blindness (the most common form) impacts more males of Northern European ancestry than other populations.³⁹ Yet other low vision disabilities that impact a much larger and broader community lack the same saturation of tools as this largely white, male impacted group. Attention needs to be recentered on addressing other functional disabilities. For color accessibility, resources for high-contrast, use of texture and shape in concert with color, and reduction of visual complexity would broaden visual accessibility beyond the narrow color-blindness group.

Frameworks to Guide Us

Shifting from surveying the landscape to enacting change, we need to examine what existing frameworks have provided to address the complexities of equity and inclusivity. While there are many concurrent principles, we introduce the following frameworks that have grounded much of the discussion up to this point.

Web Content Accessibility Guidelines (WCAG) 2.1

For twenty years, the *Web Content Accessibility Guidelines* (WCAG) have evolved from an accessibility standard focused on HTML to a technology-agnostic framework applied to all digital assets, from web pages to PDFs to e-books and mobile apps.⁴⁰ The third iteration, WCAG 2.1, is organized around the four "POUR" principles of accessibility: Perceivable, Operable, Understandable, and Robust.⁴¹ Within these categories, guidelines provide specific criteria and techniques to achieve minimum accessibility.

For visual media, the WCAG 2.1 is a robust and well-established standard that offers specific guidance and, in some cases, quantifiable criteria for ensuring a baseline of accessibility.

Example WCAG 2.1 Guidelines Specifically Applicable to Visual Media

Guideline 1.1: Text Alternatives

Provide text alternatives for any non-text content so that it can be changed into other forms people need, such as large print, braille, speech, symbols, or simpler language.

Guideline 1.4.11: Non-text Contrast

The visual presentation... [has] a contrast ratio of at least 3:1 against adjacent color(s).

Source: World Wide Web Consortium, Web Content Accessibility Guidelines (WCAG) 2.1, June 5, 2018, https://www.w3.org/TR/WCAG21/.

Universal Design for Learning

Universal Design for Learning (UDL) has wide applications for teaching and learning pedagogy and is useful for content creators and for working with design communities. 42 Grounded in modern neuroscience, the UDL framework aims to change the educational environment by addressing systemic barriers within curriculums and classrooms to make learning more equitable and accessible rather than changing the learner. Created by the Center for Applied Special Technology (CAST), UDL theory and principles were introduced and refined in the late 1990s;⁴³ the guidelines were introduced in 2008 and revised three years later. An upcoming release will incorporate a wider equity lens with a community-driven process.⁴⁴ The framework is designed around three principles engagement, representation, and action and expression—and offers guidelines for each frame organized by Build, Access, and Internalize. As with WCAG 2.1, there are multiple applicable UDL guidelines for visual media.

Example UDL Guidelines Specifically Applicable to Visual Media

Principle: Representation

Guideline: Build—Provides Options for Language and Symbols

Checkpoint 2.5: Illustrate through Multiple Media

Providing alternatives—especially illustrations, simulations, images, or interactive graphics—can make the information in a text more comprehensible for any learner and accessible for some who would find it completely inaccessible in text.

Source: CAST, "Illustrate through Multiple Media," in "UDL Guidelines," Universal Design for Learning, https://udlguidelines.cast.org/representation/language-symbols/illustrate-multimedia.

Guideline: Build—Provides Options for Expression and Communication

Checkpoint 5.1: Use Multiple Media for Communication

Unless specific media and materials are critical to the goal... it is important to provide alternative media for expression. Such alternatives reduce media-specific barriers to expression among learners with a variety of special needs but also increase the opportunities for all learners to develop a wider range of expression in a media-rich world.

Source: CAST, "Use Multiple Media for Communication," in "UDL Guidelines," Universal Design for Learning, https://udlguidelines.cast.org/action-expression/expression-communication/use-multimedia.

ACRL Framework for Visual Literacy

The ACRL Framework for Visual Literacy in Higher Education: Companion Document to the Framework for Information Literacy for Higher Education (VL Framework) is the benchmark for developing visual media competencies.⁴⁵ The latest iteration weaves antiracism, critical race theory, and accessibility explicitly into the four high-level theoretical approaches. The VL Framework maps to the Framework for Information Literacy in Higher Education (IL Framework)⁴⁶ and directly addresses criticism of the IL Framework, particularly the advocacy for critical information literacy and non-neutral language, and the IL Framework task force rejection of the community-suggested "Information literacy as a human right." The task force that authored the VL Framework states they "believe social justice should not be siloed as a discrete entity for visual literacy learning. Rather, the pursuit of social justice must be recognized as integral to all aspects of visual practice."48 This integration provides a necessary authority for the place of critical design in visual media.

The VL Framework's stated knowledge practices and dispositions guide those developing their visual literacy abilities, delivering actionable principles well aligned to our expanded discussion here.

Example of ACRL VL Framework Addressing Accessibility, Antiracism, and Social justice

Learners pursue social justice through visual practice

Knowledge Practice

Implement a range of principles and strategies for accessibility in visual media, including alt text, complex image descriptions, and audio description of visuals in video, among other techniques.

Disposition

Acknowledge that the digital tools for creating and viewing visuals may cause or exacerbate technological, economic, or accessibility barriers that affect user experience.

Source: Association of College and Research Libraries, The Framework for Visual Literacy in Higher Education: Companion Document to the Framework for Information Literacy for Higher Education (Chicago: Association of College and Research Libraries, 2022), g, https://www.ala.org/acrl/sites/ala. org.acrl/files/content/standards/Framework_Companion_Visual_Literacy.pdf

Role of Information Professionals in **Addressing Exclusionary Practices**

With critical design as an approach to less exclusionary visual media, information educators play a role in advancing equity and inclusion when teaching with or about visual media.

Knowledge creation and libraries have a history steeped in neutrality and color blindness, which are common tools in the erasure of BIPOC, women, and LGBTQIA while promoting their exploitation. Educators and scholars like Jarrett Drake, Alyssa Jennings, Kristine Kinzer, and Jonathan Furner unpack these ties with racism, sexism, and misogyny.⁴⁹ Using critical race theory to address white supremacist systems of power in libraries and archives and dismantling rhetoric around neutrality in shared knowledge and libraries, they acknowledge that we cannot be neutral when trying to provide access and equity. These systems of power affect how visual media is organized and consumed in these institutions.

One example of information professionals as disrupters is within the Wikimedia movement that aims to confront biases and inequities with Wikipedia and WikiCommons, where anyone with internet access consumes visual and text-based creator content. Authors, activists, and educators like Jina Valentine, Eliza Myrie, Heather Hart, Siân Evans, Jacqueline Mabey, Michael Mandiberg, and Kai Alexis Smith, as well as organizations like AfroCrowd, Art+ Feminism, Black Lunch Table, and Whose Knowledge?, have collectively edited content, hosted upload-a-thons, and created programming that educates content creators and editors on inclusive practices.⁵⁰

Shaping the Equitable and Inclusive Norm for Visual Media

Critical design needs to be embedded in the design process instead of treated as an addendum practice or compliance checklist item. That said, this can be overwhelming for both visual creators and educators trying to frame overall best practices.

Critical Design for Disability Culture

There isn't one approach to educating for equitable and inclusive visual media. The intersectionality of gender, race, disabilities, privileges, and so on, means that one approach, one visual media output, won't work for all. We need to teach that multiple approaches should be examined in the design process.⁵¹ As we consider how to model this, we can draw upon the extensive output of the multidisciplinary arts and design collaborative Critical Design Lab, which addresses access as a concept in ethics, creative content, and methodology.⁵² It uses the disability justice framework to offer practical, community-based solutions; specific to visual media, it includes "protocols" or replicable methods for research-creation and accountability, "pedagogy" materials, and map-a-thons to produce more critical forms of collective access and accessible zines.⁵³

While activists and scholars work on systemic change for equitable and inclusive design, we as information educators can move the needle forward and model behavior by weaving in best practices and rethinking how we develop content for consumption. It's easy to get consumed by the pitfalls of exclusion. We propose starting with the exclusionary practices we have highlighted here: representation, alt text and alternative formats, and color accessibility.

Representation. Information professionals selecting or creating visuals need to consider what we are communicating. Are the chosen or created images reflective of our interactions and our intersectional communities? Are minority groups included as celebrated contributors or token aesthetics? Is everyone able-bodied? Resources with stock images that intentionally represent gender, race, ethnicities, and persons with disabilities can be models for our practice.⁵⁴

Alt text. Beyond including alt text when images are not decorative, we should consider the inclusion of known (not assumed) information that upends assumed whiteness and privilege.

Alternative formats. Embracing our perspective that no solution will work for all, we should be prepared to provide alternative representations of information. While alt text is one example, dynamic visuals can allow users to change color palettes, rearrange layout, and so on. In the case of instruction or presentations, making materials available in advance empowers consumers to manipulate the content to address their needs without disclosing a disability. It also allows them to provide feedback on what changes may best serve the audience.

Color accessibility. When developing content for teaching, we should not limit accessibility checks to color-blindness tools,⁵⁵ instead broadening our approaches to include color contrast checks that help flag color issues that may impact low vision users and people with other impairments.⁵⁶

Along with these new practices, recognize and share the inclusive roots of overall good design practice. In data visualizations, adequate white space distribution looks cleaner and gives visually and cognitively impaired consumers the necessary room to fully ingest the information. Equally, a font selection that is non-cursive, sans serif, and has generous kerning (space between letters) doesn't just look nice; it enhances the readability, particularly for visually impaired or non-native language consumers (situationally, cognitively impaired).

Conclusion

From my perspective, accessibility is an open-ended project because what we know or claim to know about who uses accessible design is always changing.

Just as the terminology has evolved over time, from addressing individual barriers to the intersectionality of identities that encompass the range of lived experience, so should our approach to dismantling exclusionary practices and teaching. Incorporating new practices into our routines will not be without error. We will make mistakes, but these are part of the process of unlearning ableist, capitalist, racist biases. This chapter acknowledges the roots and outputs of our historically flawed approaches and proposes small, specific practices to carry the journey forward. To further develop inclusive practices, we suggest building relationships with community resources and enabling visual consumers to provide feedback. Learning and unlearning are necessary, and we as a profession should continue to position ourselves to evolve accordingly.

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