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OPINION
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Empathy Cannot Sustain Action in Technology Accessibility

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INTRODUCTION

Accessibility programs and advocates use a range of approaches to persuade people to prioritize accessibility in technology design and development. Two common methods are empathy and inclusive design, aimed at making accessibility relatable and urgent. An empathy design practice involves intentionally seeking to understand accessibility needs by learning from people with disabilities. Inclusive design starts with broadening the definition of accessibility to include people who may not be defined as having a disability but who share similar characteristics and needs. Both inclusive design and empathy are design practices that help answer the question of *how* to design accessible technology. Neither is strong enough to sustain the necessary level of commitment and prioritization to achieve accessible outcomes. To resolve the question of *why* we must design accessible technology, we need requirements and professionalism. Through reviews of research and current practices, this opinion article explores the use of empathy and inclusive design for technology accessibility, highlights fundamental gaps, and proposes ways toward sustainable attention to accessibility and disability inclusion in our digital world.

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DISCUSSION

Inspiring Attention to Accessibility and People With Disabilities

In their CHI 2019 paper, "The Promise of Empathy: Design, Disability, and Knowing the 'Other,'" Bennett and Rosner examine the practice of empathy and inclusive design in the technology profession. They define empathy, cover different approaches to generating and using empathy in the design process, and provide two case studies to illustrate the use of empathy to address accessibility in designing products (a voting machine) and design tools (a prototype brainstorming game). They provide a thoughtful discussion on "the slipperiness of empathy," using the case studies to illustrate the negative effects of empathy in the context of designing for people with disabilities, explaining that "Empathy exercises of simulation or persona creation may help designers distance themselves from disabled people, framing the disabled identity as one distinct and non-overlapping with that of the designer." Despite its shortcomings, they acknowledge that a practice of empathy can produce positive outcomes. "Well-meaning attempts to support disabled people through the prototypes that designers build and the empathy activities they devise result in important interventions." (Bennett and Rosner, 2019).

Bannet and Rosner also discuss inclusive design approaches as a means to bring designers closer to the experience of disability. For example, Microsoft's Inclusive Design resources aim to broaden perspectives to support design for diversity (Microsoft, 2018a). Their Inclusive Design Toolkit includes personas representing a range of people with accessibility needs, for example, the commonalities between a someone with one arm or an arm injury or holding an infant, or someone who is non-verbal or has laryngitis or a heavy accent, in an effort to "help foster empathy and to show how a solution scales to a broader audience (Microsoft, 2016)."

At the core of these practices is the premise that organizations and technology professionals

are not inherently concerned with ensuring people with disabilities are able to use the technology they produce and provide and therefore must take measures to generate concern for people with disabilities and sustain commitment and attention to accessibility. Lauridsen describes the effect of these approaches and their underlying assumptions in a 2020 presentation, Entering the Accessibility Space as an Ally.

> We don't wait to put security into a product until we have an empathy exercise where I come in and steal your wallet so you can feel what it feels like to have your money go away, and now you care and you'll build in security. But sometimes that's still how we treat accessibility, like either something fun and inspirational or aspirational that gets added on. I want the part of my job where I kind of have to go out and advocate and cheerlead for accessibility to someday not be necessary (Lauridsen, 2020).

Additionally, empathy and inclusive design approaches do not appear to be having a significant impact on improving digital accessibility. As with requirements for other quality attributes like security and privacy, digital accessibility requirements are defined by standards, including the ISO/IEC 40500 international standard, ICT Accessibility 508 Standards and 255 Guidelines in the United States, and EN 301 549 in the European Union (ISO/IEC 40500, 2012; Information and Communication Technology, 2018; EN301 549, 2021). These and other standards incorporate requirements defined in the Web Content Accessibility Guidelines (WCAG), developed by the Worldwide Web Consortium (W3C). WCAG was first published in 1999 and is regularly revised to reflect changes in technology (Web Content Accessibility Guidelines, 2020).

Despite the availability of standards and conformance obligations defined by policies, regulations, and laws, much of today's technology has not been designed for accessibility, and many products and services are not built to digital accessibility standards. For example, in a February 2020 review of one million home pages using automated tests against web standards, WebAIM reported an average of 60.9 WCAG conformance errors per page. "Users with disabilities would expect to encounter detectable errors on 1 in every 14 home page elements with which they engage (WebAIM, 2020)."

Empathy as a design practice has potential, but its ability to influence action is unclear. Bennett and Rosner's paper was researched and written well before 2020—the year when the COVID-19 pandemic, police brutality, and criminal disregard for public safety from leadership, showed both the power and profound limitations empathy and concern for others. Empathy cannot be relied on to sustain quality attention to accessibility in technology companies and professionals.

Fundamental Gaps Between Aspiration and Quality Attention

In the tech industry, organizations and individuals decide whether or not to design and build products and services that are accessible and usable for people with disabilities. In some sectors, accessibility is treated as a requirement, but for many tech companies and professionals, accessibility is at best treated as "the right thing to do," rather than as a professional obligation to avoid discriminating against people with disabilities. At worst, accessibility is completely absent in the design and development process.

Let's turn again to Microsoft for illustration purposes only, as a large technology company with a long-standing commitment to accessibility. In addition to the Inclusive Design resources cited above, Microsoft has a Chief Accessibility Officer, Customer Accessibility Stories, and open access to its library of Accessibility Conformance Reports for Microsoft products (Briggs, 2020; Microsoft, 2020a,b). These and many other indicators of quality attention to accessibility position Microsoft as a leader among large technology companies in its commitment to accessibility. Microsoft recognizes both legal and ethical requirements of accessible technology in its Code of Business Conduct. "Designing accessible products is a legal requirement in many of the places where we operate, and with over one billion people around the world with disabilities, it's also the right thing to do (Microsoft, 2019)."

However, Microsoft's Windows Developer documentation sends a different message. In its accessibility documents, the seven steps for inclusive design starts with, "Decide if inclusive design is an important aspect to your software (Microsoft, 2020c)," reinforcing the idea that some software does not need to be inclusive, i.e., that some software does not need to be usable by people with accessibility needs. During the submission process, developers are prompted to state whether their app is accessible as one of the product declarations. The advice cautions, "Don't list your app as accessible unless you have specifically engineered and tested it for that purpose. If your app is declared as accessible, but it doesn't actually support accessibility, you'll probably receive negative feedback from the community (Microsoft, 2018b)." This statement demonstrates a profound lack of professionalism, focusing on the reputation risk to the app developer rather than on the risk of excluding people with disabilities from using the app.

Microsoft is not alone in this inconsistent approach to treating accessibility as a requirement. How can a tech company with a strong focus on disability inclusion not require conformance with accessibility standards? Has the push to go "beyond compliance" moved us away from respecting minimum standards?

The Need for Requirements, Competency, and Accountability

Producing inaccessible technology is unprofessional and unethical; it is also likely to be a source of unlawful discrimination. In the United States, people with disabilities are protected from discrimination under the Americans with Disabilities Act (ADA). In 2019, there were ∼2,200 ADA lawsuits related to discrimination caused by inaccessible websites and mobile apps (Seyfarth, 2020). Accessibility barriers could prevent a person with accessibility needs from working, learning, caretaking, and other essential activities. As society relies increasing on technology in high-risk contexts, barriers could lead to significant harm to health and safety. Research studies conducted during the COVID-19 pandemic

show the consequences of accessibility defects at a time of rapid transition to the digital environment, with inaccessible technology presenting barriers to employment, education, health information and services, shopping, and more (Gleason et al., 2020; Rosenblum et al., 2020).

For example, Microsoft has partnered with UnitedHealth Group to develop ProtectWell, an app designed to help individuals and organizations "Get back to life with confidence (Microsoft, 2020)." Knowing their guidance to Windows app developers, can we be confident that the app will be built to accessibility standards, offering the same protection to students and employees who have accessibility needs? Or will someone who uses assistive technology on their smartphone miss important notifications due to a lack of quality attention to accessibility? A quick review in October 2020 of the ProtectWell website (UnitedHealth Group, 2020) does not instill confidence, with no mention of accessibility in the product description and no statement of commitment. The website has basic WCAG conformance errors, like missing alternative text on the logo image link and keyboard focus on invisible text inputs.

Who is responsible for ensuring that the people who are building our digital world have the necessary competence to adhere to laws and protect people from harm? For accessible technology, academic programs intended for entrants to the technology industry do not offer much support, with limited coverage of accessibility in programs related to technology (Shinohara et al., 2018; Teach Access, 2020).

In his 2020 article, A Brief History of Software Professionalism and the Way Forward, Laplante recounts the history of efforts to professionalize technology that started over half a century ago, in 1968:

> Society expects a standard of competence, professionalism, and accountability from its doctors, nurses, and other professionals who hold lives in trust. Yet anyone can write software that can appear in or interact with critical systems, so what does "software professional" mean, and what are society's expectations for those individuals?

After years of work to professionalize software engineers, he concludes, "I am convinced licensing software engineers in any way will never happen again (at least not in the United States) (Laplante, 2020)."

The Association for Computing Machinery (ACM) was involved in early professionalization efforts. In 2018, they updated the ACM Code of Conduct to provide clear guidance for professional standards for accessibility:

> The use of information and technology may cause new, or enhance existing, inequities. Technologies and practices should be as inclusive and accessible as possible and computing professionals should take action to avoid creating systems or technologies that disenfranchise or oppress people. Failure to design for inclusiveness and accessibility may constitute unfair discrimination (Association for Computing Machinery, 2018).

ACM's Code of Ethics has associated Enforcement Procedures to address complaints concerning suspected violations of the Code, which presumably would include ACM members who fail to take action to avoid creating inaccessible technology, for example, by not conforming with accessibility standards (Association for Computing Machinery, 2020). On October 7, 2020 in preparing this paper, I submitted the following question to ACM's "Ask an Ethicist" feature (ACM Ethics, 2020): "Is it a violation of the ACM Code of Ethics and Professional Conduct to knowingly implement technology features that violate accessibility standards?" As of this writing I have not had a response. Without enforcement, questions remain about how effective a code of ethics and conduct can be in influencing behavior. For example, in their study of the impact of ACM's Code of Ethics on engineering students and software developers, McNamara, Smith, and Murphy-Hill found no statistically significant difference between people who reviewed the code and those who did not before responding to ethics-focused scenarios (McNamara et al., 2018).

CONCLUSION

In his session at the 13th Brazilian Symposium on Human Factors in Computing Systems (IHC '14), Urbano deftly summarized the gap between technology education and scholarship and professional technology practice:

> Academia has questions and answers. Industry has problems and solutions.—Paulo Urbano (Urbano et al., 2014)

Faced with grave problems, humanity is turning to the digital world for solid and sustainable solutions. However, the people who design and build our digital landscape are not prepared to meet the demand for quality, safety, and stability. Organizations do not give sufficient weight to legal obligations in the technology profession, instead focusing on empathy and inclusion, ethics and conduct. Academic programs do not treat knowledge of accessibility standards as a core competency. These factors contribute to an overall lack of quality attention to accessibility, which in turn results in digital products and services that are not accessible to people with disabilities.

Despite being made of intangible bits and bytes, the digital world can have barriers as solid as a brick wall. To avoid barriers, academics must prepare future technologists to at least meet minimum standards for equality, health, and safety in their work, by treating accessibility as a core professional competence in learning programs. Technology companies must make accessibility a core requirement of all products and services, not an aspirational goal or optional feature. Professional organizations must respect the legal obligations of the profession, including accessibility, and revisit their role in establishing and enforcing professionalism. And technology professionals must take on accessibility standards as a core competency, and be accountable when

inaccessible technology results in exclusion for people with disabilities.

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