

NO SUCH THING AS NORMAL: EXPLORATION AND OPPORTUNITIES FOR NEURODIVERSITY IN RESEARCH

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1 INTRODUCTION

Neurodiversity was coined in 1999 [9]. At its start, the movement was used to advocate for people with Autism and has since broadened to include other neurological conditions such as ADHD (Attention Deficit Hyperactivity Disorder), dyslexia, and even mental health disorders such as depression and anxiety. While the neurodiversity movement has made efforts into researching and designing technology with diverse voices and experiences at its center, there is still a lot of work that needs to be done in this area. For example, cognitive accessibility user research deals with the challenges for people with cognitive or learning disabilities when using technologies [5]. However, these developments are limited to the scope of web users but have the potential to reach all technologies, from wearables to mobile apps to data analytics and visualization tools.

As new movements arise and thoughts shift towards social justice, it is becoming more and more apparent that marginalized groups can no longer be left out of design conversation and innovation. For example, design justice focuses on the ways that race, class, gender, and disability, 90% of which are invisible, account for a variety of user needs [10]. As Harvey Blume noted, “Neurodiversity may be every bit as crucial for the human race as biodiversity is for life in general. Who can say what form of wiring will prove best at any given moment?”[4]. Though it is difficult to separate the intersection of these groups, we can contribute to the discourse and goals of disability justice in Human-Computer Interaction (HCI) through the lens of the neurodiversity movement and those impacted by being left out of design to guide our practice and create opportunities for collaboration and solutions.

In this position paper we highlight two neurodiversity topics of interest as discussion points for the Dreaming Disability Justice (DJ) in HCI 2022 CHI Workshop. The first topic is DJ and intersectionality, and the second topic is the expansion and complications of neurodiverse approaches to HCI. We selected these topics to discuss both the roots and potential direction of this space within HCI.

2 HOW DOES DISABILITY INTERSECT WITH OTHER OVERLAPPING SYSTEMS OF OPPRESSION (RACISM, ANTI-BLACKNESS, SEXISM, CLASSISM, COLONIALISM, ETC) AND HOW DOES IT INFORM THE TECHNOLOGIES WE DESIGN?

In her book *Design Justice*, activist and author, Sasha Costanza-Chock tells us that there has been more effort in diversifying teams in tech through addressing previous sexist and racist discourse and practices. However, these diversity initiatives often leave the issues of white supremacy, heteropatriarchy, capitalism, and settler colonialism out of the conversation and result in reinforcing these issues in both the workplace and in technology design [7]. Costanza-Chock also reveals that historically, tech has been designed by, and

for, white males and though the face of the modern workplace may be changing, the largest working racial group in the US is still white men [8]. Though design and the ethnic distribution of the workforce may be seemingly unrelated, they are very much tied together. This is because when creators of new technologies are similar to each other, they may be more likely to build products that meet their needs and not more diverse users [1]. Thus, if the majority of tech workers are white males, they may be likely to design products for other white males.

This bias blind spot is not exclusive to race and gender. For example, neurotypical individuals may not think about how a dyslexic individual experiences a variety of default visualizations within a dashboard. Accessibility, equality, and cultural sensitivity are afterthoughts [1] in a world that centers the white, male, able-bodied, and neurotypical narrative as the source of truth. We do a disservice not only to our products, but to the lived experience of millions by not addressing, amongst many other factors, neurodiversity in HCI. Not only does it reinforce antiquated and often problematic power structures but keeps those negatively impacted as invisible and unheard voices. We believe this to be inherently true for the domain of data and analytics, and thus we ask the question: How can we help research and design teams within data and analytics identify and address problematic power structures?

3 HOW DOES DISABILITY JUSTICE EXPAND AND COMPLICATE HUMAN-CENTERED APPROACHES TO HCI RESEARCH?

While DJ has the potential to do a lot of good in HCI research, it may also disrupt industry norms and complicate current practices. Specifically, when we make the effort to understand neurodiversity, we not only increase our knowledge and subject matter expertise, but we increase the sense of meaning we can make with these underserved communities [1] and acknowledge their experience as legitimate [2]. Some techniques that we can apply here are participatory sense-making [1] to not only facilitate co-creation for neurodiverse individuals, but to create solutions for co-collaboration between “neurotypical” and neurodiverse people [6], and gain a deeper understanding of how to design for their strengths [3, 10]. More traditional interviews and experimentation will, of course, also yield insights. For example, in a 2021 study, researchers found that neurodiverse individuals have an easier time understanding and drawing meaningful insights from stacked bar charts than pie charts when two values were very close [11]. However, current research techniques and tools may work for some individuals but not others. This may complicate how we approach research as we rethink how our methodologies and evaluative measures could exclude neurodiverse individuals and we can work to improve upon them.

Still, DJ may also complicate approaches to HCI research. For example, as researchers in private industry, we are often at the mercy of product deadlines and release schedules. By introducing DJ into our research practice, we run the risk of taking longer to run research to recruit diverse groups that may be difficult to reach and accommodate any potential participant needs. This may impact stakeholder buy-in as they may not think it worthwhile to push deadlines for groups that may not fall in “typical” user groups. Further complications arise because it is extremely difficult to capture everyone in every group when conducting research. It is with these thoughts we identify the following as a discussion topic: How can we make sure we’re meeting the needs of neurodiverse groups with the pressures of tight industry deadlines?

4 CONCLUSION AND FUTURE WORK

To integrate disability justice and HCI, we must keep an open discourse and make sure we are bringing the affected communities into these conversations to make sure that design decisions are not made without their input. We cannot disregard their lived experience as it is not only essential to making sure we’re designing the right thing, but to empower neurodiverse individuals by giving them a voice in the design process to begin with.

In this paper we discussed two neurodiversity topics to introduce a discussion around potential future research opportunities and practices. Some of these areas may include: (1) making sure that we maintain a sense of empathy when designing screening criteria and protocols to make sure that we do no harm to those willing to participate in our studies, (2) focusing on the strengths of neurodiverse individuals rather than treating their diversity as something to be fixed, (3) finding ways to partner with communities like the Autistic Self Advocacy Network to make sure their voices are being heard, and (4) keeping in mind that no individual is just their disability and finding ways to navigate multiple areas of identity impacted by structures of oppression. We are excited to discuss these topics of interest further at the workshop.

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