
SIGCHI Social Impact Award Talk – Ability-Based Design: Elevating Ability over Disability in Accessible Computing

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CHI'17 Extended Abstracts, May 06-11, 2017, Denver, CO, USA
ACM 978-1-4503-4656-6/17/05.
<http://dx.doi.org/10.1145/3027063.3058588>

Abstract

The term “disability” connotes an absence of ability, but is like saying “dis-money” or “dis-height.” All living people have some abilities [2]. Unfortunately, history is filled with examples of a focus on *dis*-ability, on what is missing, and on ensuing attempts to replace lost function to make people match a rigid world. Although often well intended, such a focus assumes humans must be adapted, and that interfaces, devices, and environments get to remain as they are. At the same time, our built things embody numerous “ability assumptions” imparted by their designers, and yet our built things remain unaware of their users’ abilities. They also remain unaware of the situations their users are in, or how those situations affect their users’ abilities [2,3]. An important shift in perspective comes by allowing people to “remain as they are,” asking instead how interfaces, devices, and environments can bear the burden of becoming more suitable to their users’ situated abilities. I call this perspective and the principles that accompany it “Ability-Based Design” [4,5], where the human abilities required to use a technology in a given context are questioned, and systems are made operable by or adaptable to alternative abilities. From this perspective, all people have varying degrees of ability, and different situations lead to different ability limitations, some long-term and some momentary. Some ability limitations come mostly

from within the self, others from mostly outside the self. Ability-Based Design considers this whole “landscape of ability,” respecting the human at its center and asking more of our technologies. In this talk, I will cover a decade’s worth of projects related to Ability-Based Design, some directed at “people with disabilities” and others directed at “people in disabling situations.” Rather than dive into any one project, I will convey a space of explored possibilities. I will also put forth a grand challenge: that anyone, anywhere, at any time can interact with technologies ideally suited to their specific situated abilities, and that our technologies do the work to achieve this fit.

Author Keywords

Ability, disability, assistive technology, accessible computing, adaptivity, adaptability, configurability, human performance, situation, context, environment, situationally-induced impairments and disabilities.

ACM Classification Keywords

K.4.2. Computers and society: Social issues – *assistive technologies for persons with disabilities*.

Speaker’s Bio

Jacob O. Wobbrock is an Associate Professor in the Information School and an Adjunct Associate Professor in the Department of Computer Science & Engineering at the University of Washington, where he directs the Mobile & Accessible Design Lab.¹ He is a founding member of the design: use: build: Group (DUB Group)² and the multi-departmental Master of HCI & Design³ program at UW. Dr. Wobbrock’s research seeks to scientifically understand people’s interactions with

computers and information, and to improve those interactions through design and engineering, especially for people with disabilities. His specific research topics include interaction techniques, human performance measurement and modeling, HCI research and design methods, mobile computing, and accessible computing. He pursues Ability-Based Design [4,5], where the human abilities required to use a technology in a given context are questioned, and systems are made operable by or adaptable to alternative abilities. For example, his Slide Rule project [1] (with Shaun Kane and Jeffrey Bigham) was the first to make touch screen smartphones accessible to blind people using gestures, influencing Apple’s VoiceOver design for iOS.⁴ Dr. Wobbrock has co-authored over 120 peer-reviewed publications, receiving 19 paper awards, including 7 best papers and 7 honorable mentions from ACM CHI. He is the recipient of an NSF CAREER award and five other National Science Foundation grants. He is on the editorial board of ACM Transactions on Computer-Human Interaction. His advisees, to whom he owes his success, have become professors at Harvard, Cornell, Colorado, Maryland, Brown, Simon Fraser, and elsewhere. Dr. Wobbrock received his B.S. in Symbolic Systems and his M.S. in Computer Science from Stanford University; he received his Ph.D. in Human-Computer Interaction from Carnegie Mellon University. Upon graduation, he was honored with CMU’s School of Computer Science Distinguished Dissertation Award.

Acknowledgments

The author thanks his former and current students and collaborators who have contributed to advancing

¹ <http://depts.washington.edu/madlab/>

² <http://dub.washington.edu/>

³ <http://mhcid.washington.edu/>

⁴ <http://www.apple.com/accessibility/iphone/vision/>

Ability-Based Design, especially (in alphabetical order): Shiri Azenkot, Jeffrey Bigham, Abigail Evans, Leah Findlater, James Fogarty, Batya Friedman, Jon Froehlich, Krzysztof Gajos, Mayank Goel, Susumu Harada, Alex Jansen, Shaun Kane, Richard Ladner, James Landay, Alex Mariakakis, Meredith Ringel Morris, Martez Mott, Katie O’Leary, Shwetak Patel, Eve Riskin, Kristen Shinohara, Jessica Tran, and Daniel S. Weld. This work was supported in part by Microsoft Research, Google, and the National Science Foundation under grants IIS-0952786 and IIS-1217627. Any opinions, findings, conclusions or recommendations expressed in this work are those of the author and do not necessarily reflect those of any supporter listed above.

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