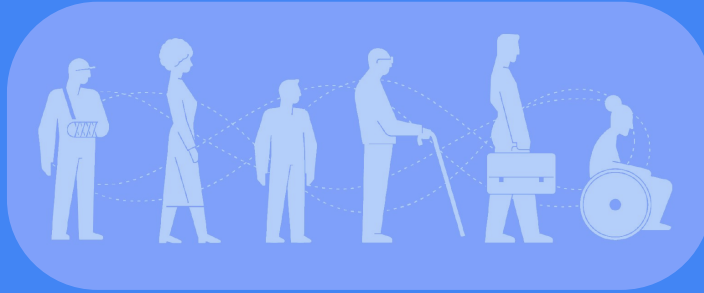


Day 2: Discussion on Accessibility and Aging



By: Cameron Cassidy, Kelly Dickenson, and Julie Oh

CueSee: Exploring Visual Cues for People with Low Vision to Facilitate a Visual Search Task

Yuhang Zhao, Sarit Szpiro, Jonathan Knighten, Shiri Azenkot

This is a cool paper, but....

- It's not under 2 years old.
 - Physical assistive tech artifact contributions have been rare during the pandemic.
- It's not from CHI or ASSETS.
 - But the authors are prominent contributors to both.
 - It is an excellent example of participatory design; one of the researchers is visually impaired.

Introducing and Legitimizing the Topic:

- The motivation is strongest in the aptly-named “Motivating Study”
 - Contextual inquiry which demonstrates the problem of visual search with 11 participants.
- Analyzes the faults of previous approaches, in both old assistive technology and modern digital ones.
 - Previous work focuses on improving the visibility of a scene as a whole, but don't focus on finding a target amongst many other options.
 - Most are not hands free devices.

Positioning The Design:

- Merges concepts from cognitive psychology, VR, and HCI.
- Reviews existing artifacts and pulls various useful design choices from them:
 - ColorEyes: A program that uses a set of moving eyes to help a person find their cursor position
 - VizWiz: A “human in the loop” approach to the same task.
- Draws from previous HCI work on “cue-based” notifications:
 - Hong et al. conducted a study which demonstrated how flashing interfaces can shorten search time.
- Draws from cognitive psychology for identifying the most effective cues:
 - McLeod’s work on how motion impacts visual search times.
 - Yantis and Jonides’ “abrupt onset” research

Contribution:

- What's the research contribution?

Contribution:

- What's the research contribution?
- CueSee is an artifact contribution.
- **The paper** is also an empirical contribution:
 - It also contains a quantitative study of cues preferred by BLV people for search tasks, based on accuracy and time.

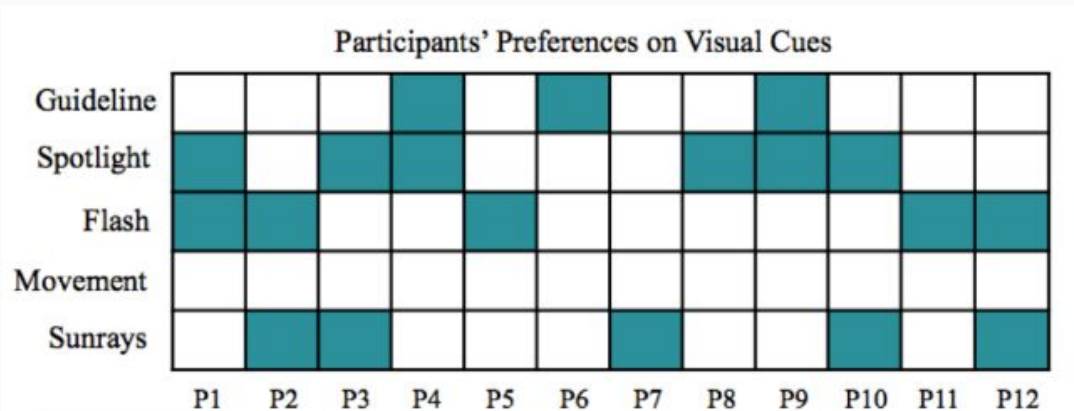


Figure 4. Visual cues preferred by each participant: we use filled in blocks to represent the visual cues (row) that each participant (column) chose to use in our study.

Main Takeaways:

- Visual Cues may be just as effective as audio directions for BLV people
- Future work:
 - Designing and testing new interaction techniques for assistive AR/VR?
 - More efficient CV. the system ran at 20FPS and some participants scanned the shelves too quickly for the system.

Discussion Questions:

- What were your impressions of the methods used in the paper?
- What model of disability/impairment does this technology support?
- What role, if any, do you think aesthetic/appearance playing in assistive technology?

Perusall Question #1:

- “I find contradiction in saying it is a “human-powered service” that “recognized the product using SURF or color histograms.” I was taking human-powered to mean it isn't really AI, just a photo sent to a person with a direction of “find me X product.” - Adrianna Burton
- This is called a “human in the loop” approach. In this case, the worker sketches an outline of the object which is obviously the focal point of the image, and the automated system helps guide the user to the object in 3D space.
- “AI in the loop” also exists.
- Does the 1 AI researcher have any input on this?

Perusall Question #2:

- *“interestingly, they don't mention what products, and why they chose them or how the computer vision works. I've seen critical AI research which highlighted a similar device which only worked on household items commonly found in the West” - Andrew Hamann*
- Thoughts on the product choice/design implications?
- While this isn't a “computer vision” paper, I would've liked a section on what was used in the OpenCV toolkit, and how accurate CueSee was at product recognition without Chillitags.

Perusall Question #3:

- “What would be the cost for this technology? From the design breakdown, this seems like a tool that could cost a pretty penny. Pricing will have a huge impact on who gets access to a tool like this.” - Whitney-Jocelyn Kouaho
- High-tech assistive technology is **expensive**.
- Stacy Branham and I just finished a study on a remote-worker approach. Our vision is something like the Telecommunications Relay Service but for the visually impaired.



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Understanding Mental Ill-health as Psychosocial Disability: Implications for Assistive Technology

Kathryn E. Ringland, Jennifer Nicholas, Rachel Kornfield, Emily G. Lattie, David C. Mohr, Madhu Reddy

- “Psychosocial Disability”



- Gather and Document Information on People with Psychosocial Disabilities
- Design Considerations for Assistive Technology FOR Psychosocial Disability
- Psychosocial Disability from Medical Model of Disability and Social Model Disability
 - MM - limits the person, perceives disability as a flaw of an individual, aimed in “normalizing” the person
 - SM - society is limiting & creates the barriers on the individual. Individual is validated and highlighted
 - Stigma, Context, Autonomy
- We need a more Holistic support system for adequate support

How does this paper argue that its topic is worthy of study?



- RELEVANCY - large number of people have mental diagnosis worldwide
- GAP - Not a lot of research done in this area in general
 - ASSETS and AT in general focus on physical disabilities
 - Existing Digital Interventions that address Mental Illness are outside framework for AT
 - Lack of holistic support that looks at physical and psychosocial disabilities
- PRESENTATION OF VALID PROBLEMS THAT RISK GETTING WORSE AND ARE PERSISTENT
 - Negative Physical and Mental Impact that react to one another
- APPLICABLE BENEFITS
 - Higher Life Quality
 - Patient Empowerment
 - Validation in “Invisible Illnesses”, more accurate understandings

- What areas of inquiry within HCI and outside of does each paper draw from?
- How does the paper expand on those areas to make its contribution?

What Type of Research Contribution(s)?

- Empirical Research
- Artifact
- Methodological
- Theoretical
- Dataset
- Survey
- Opinion

Empirical Research Contribution

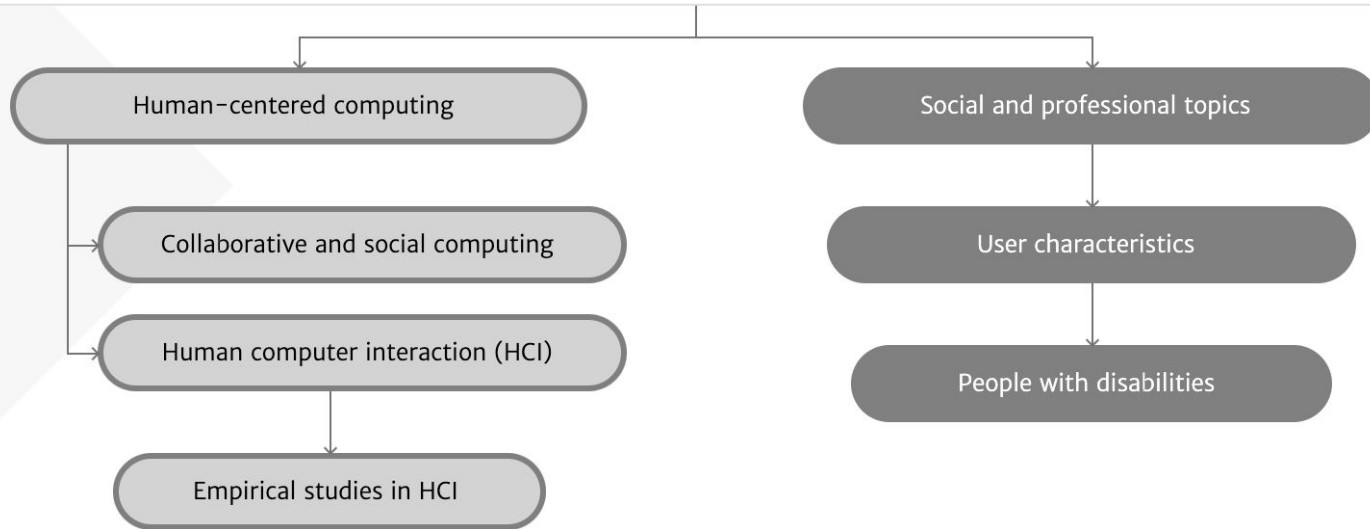
They provide new knowledge through findings based on observation and data gathering. Data may be qualitative or quantitative, aspiringly objective or unapologetically subjective, from the laboratory or from the field. Empirical contributions arise from a variety of sources, including experiments, user tests, field observations, interviews, surveys, focus groups, diaries, ethnographies, sensors, log files, and many others.

Empirical research contributions are evaluated mainly on the importance of their findings and on the soundness of their methods. If empirical findings are uninteresting or unimportant, or if the methods by which those findings arise are sloppy, imprecise, or confounded, then empirical contributions are judged unfavorably.

Do you agree or disagree?

And why?

Understanding Mental Ill-health as Psychosocial Disability: Implications for Assistive Technology



What are the Main Takeaways?

For this paper, what do you think are the main takeaways for the HCI research community?

Are there any main takeaways to other research communities?

RESULTS

- Three Emerging Themes
 - Personal Health as Disabling Experience
 - Discourse Around Personal Health
 - Caring for Mental Health

AT IMPLICATIONS

- Viewing the whole Person beyond the Medical Context
- Reframe Research & Design to meet UX
- Moving away from a solely Medical Model of Psychosocial Disabilities

Communities...

- Medical Communities?
- Psychology?
- ASSETS?
- Health Care System as a whole?

Class Discussion:

Comments Made in Perusal

Why and how? I wish the authors had taken a bit more time to emphasize this. It's another paper, I'm sure, and they give citations, but this feels more interesting to expand upon than the social > medical model two paragraphs. - EJ

**Social Model > Medical
Model**

Methodology: Participant Eligibility

I'm curious how the authors came up with the inclusion/exclusion criteria. It seemed they were targeting individuals who may not meet the medical threshold, but they did not mention excluding people who are experiencing severe depression/anxiety or have had multiple episodes. - AB

“... many individuals may not meet the medical “threshold” for mental health conditions but may still find their daily living activities impaired by mental health symptoms.”

I'd be curious learn more about this "threshold". Based on the author's description it seems like the 1 in 4 statistic is for those who do meet the threshold. I agree with @EJ that there is a large gap in this, especially for how many people are impacted by mental health conditions -LF

But it also seems like the social model of disability might capture some of this ... by moving to support from diagnosis and treatment - RW

I think having a threshold in mental health conditions is stigmatizing itself, specially for those who seek help but do not get the proper service - MH

I also wonder what goes into the creation of these thresholds. - WK

Totally agree. I recall those application for low health literacy. "The threshold" is for about 80% US citizens who don't have enough medical information. But actually even people with high literacy could use same designs. - YG

: 0

AT for Psychosocial
Disabilities

Stigma and Medical
Labeling

Stance on Medication Use?

Getting People with
Psychosocial Disabilities to
feel trust and empowerment?

And general discussion!!

: D

THANK YOU