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Members:

- ❖ Isa Abdul-Hamid, 816037392 - Capturing Cancer as Music: Cancer Mechanisms Expressed through Musification
- ❖ Zane Edwards, 816037008 - Investigating Perceptual Biases in Icon Arrays
- ❖ Andre Benjamin, 816036749 - “I Don't Even Remember What I Read”: How Design Influences Dissociation on Social Media

Capturing Cancer as Music: Cancer Mechanisms Expressed through Musification

Abstract: Cancer is complex, and literature is often too technical for the general public. Musification helps to visualize cancer mechanisms through auditory learning

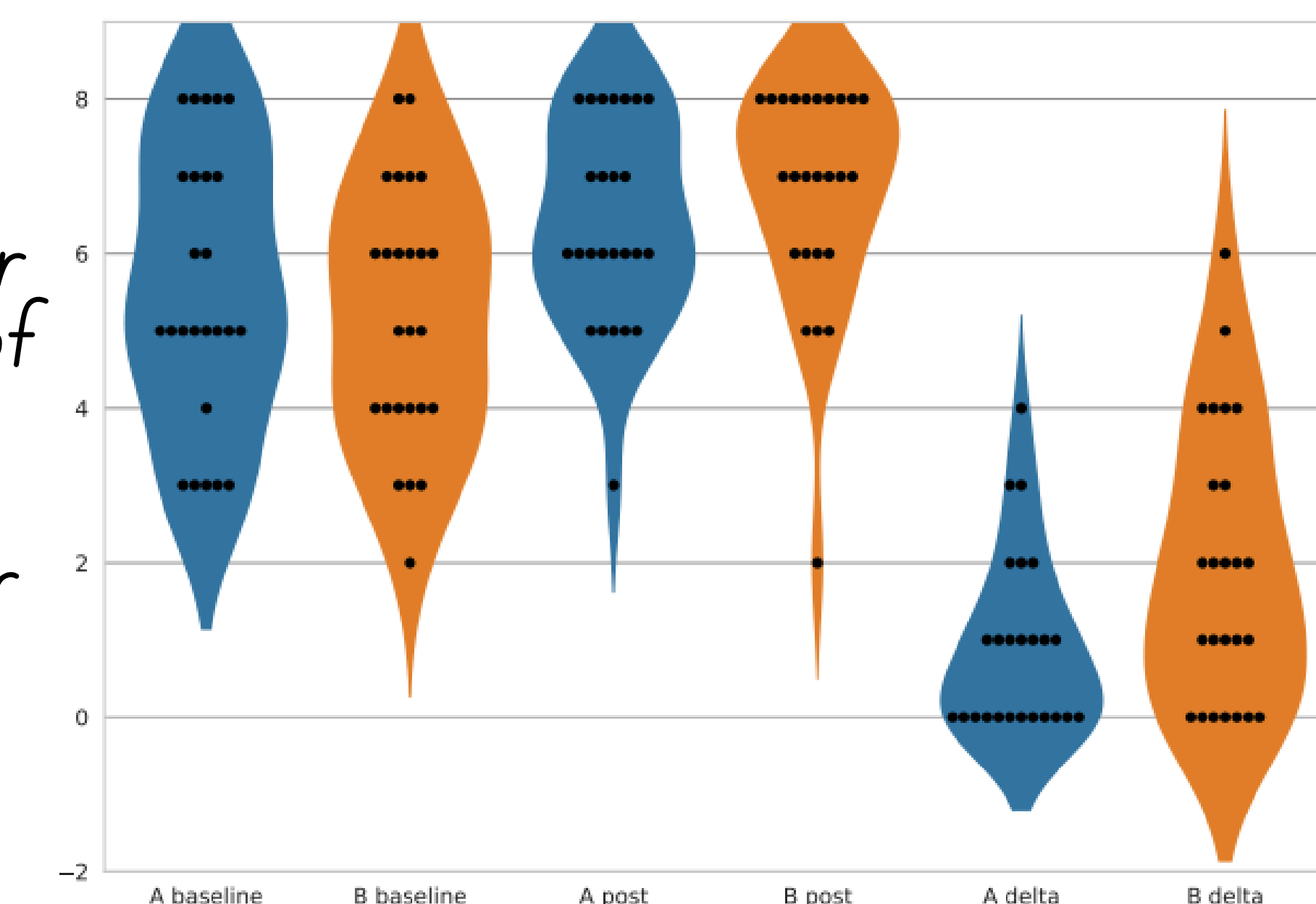


Methodology: Musical notes mutate to symbolize cancer's evolution, showing inversions, deletions, translocations and transpositions

Figure 3: A sample mutation in action. The boxes denote the cancer theme that is mutating. The top-most red theme was replicated twice, creating two more mutant parts, marked in green and blue. Then, one of the blue child mutated again, forming the purple part, for three in total. Some of the mutant parts are randomly offset in order to create more variation in the piece, as otherwise the parts would all overlap.

Cancer Knowledge Results

Results: Participants showed a higher understanding of cancer after exposure to musified cancer mechanisms compared to text-based explanations alone



Limitations:

- Musification alone was not enough for participants to fully understand the cancer mechanisms.
- The approach relies heavily on auditory learning, which makes it inaccessible to individuals with hearing impairments.
- The paper did not use real-world cancer data for the musification.
- The model was seen as too abstract to be directly useful for researchers or professionals in the field

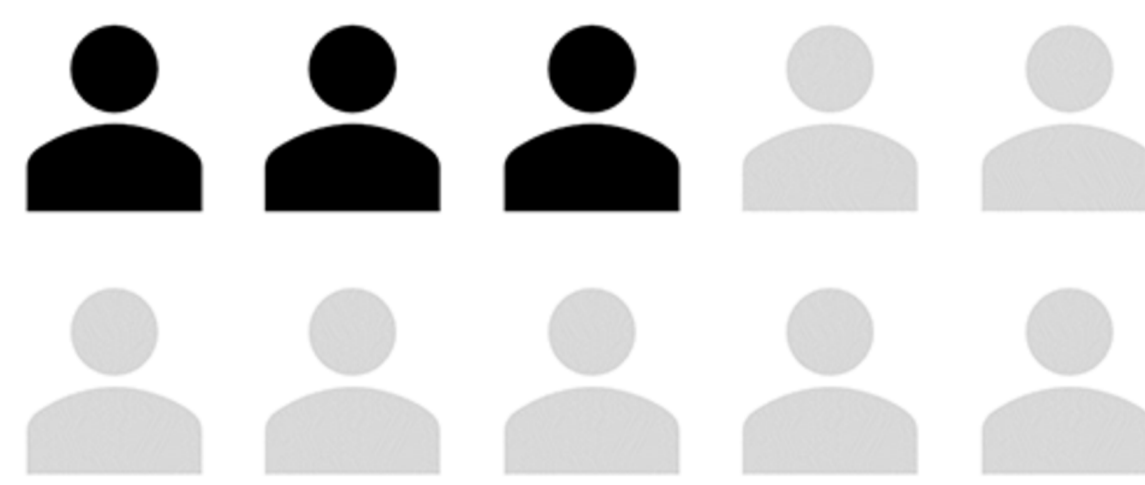
Conclusion: The paper intends to improve cancer literacy and understand cancer mechanisms. The research shows the potential for application in healthcare education, making difficult concepts like cancer more understandable to the general public

Author: Rostyslav Hnatyshyn, Jiayi Hong, Ross Maciejewski, Christopher Norby, Carlo C. Maley

Investigating Perceptual Biases in Icon Arrays

What is an Icon Array?

3 in 10 people are bald (false)



- A graphical display
- Icons are filled to represent probabilities

- Allows viewer to quickly grasp proportions and comparisons

Background

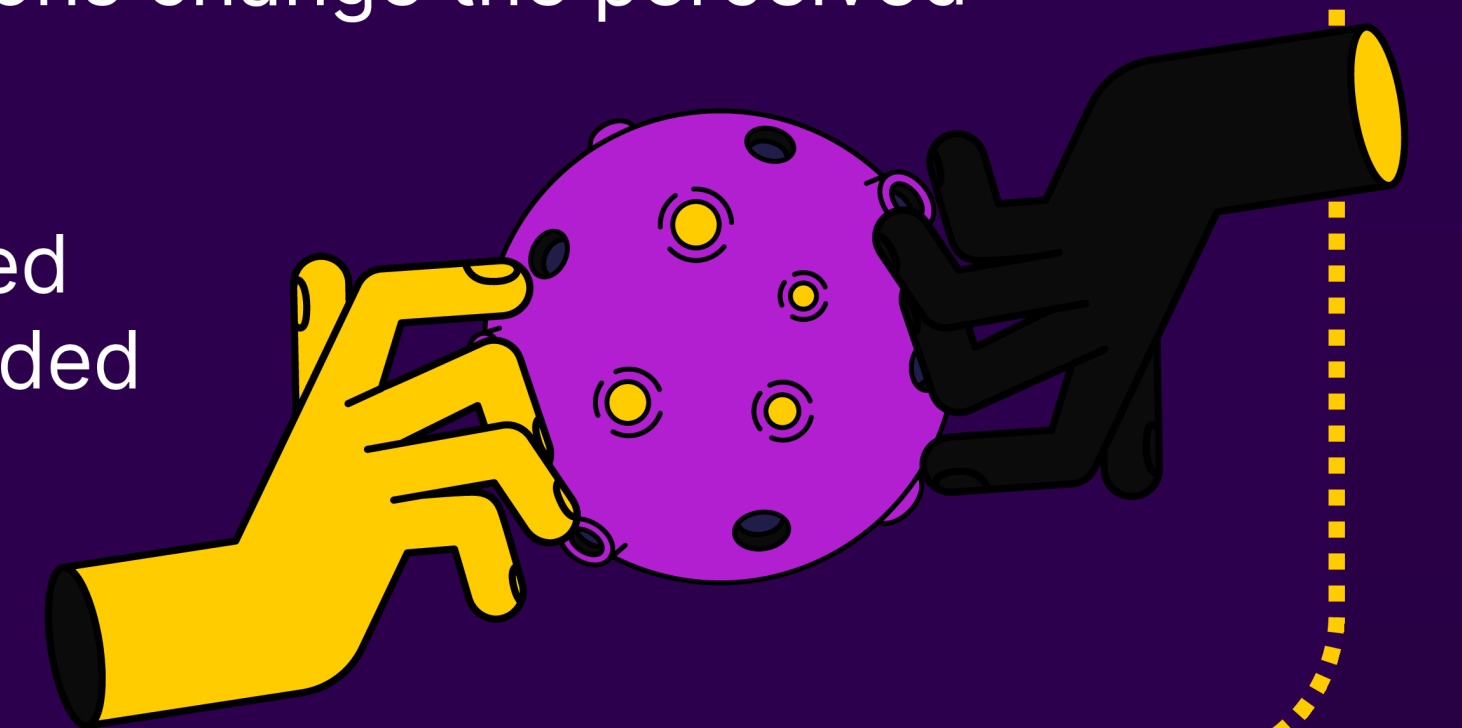
- Cindy Xiong, University of Massachusetts Amherst
- Ali Sarvghad, University of Massachusetts Amherst
- Çağatay Demiralp, Sigma Computing
- Jake M. Hofman, Microsoft Research
- Daniel G. Goldstein, Microsoft Research

Conference on Human Factors in Computing Systems (CHI '22)
Published: 28 April 2022

Abstract

Does the spatial arrangement of icons change the perceived probability?

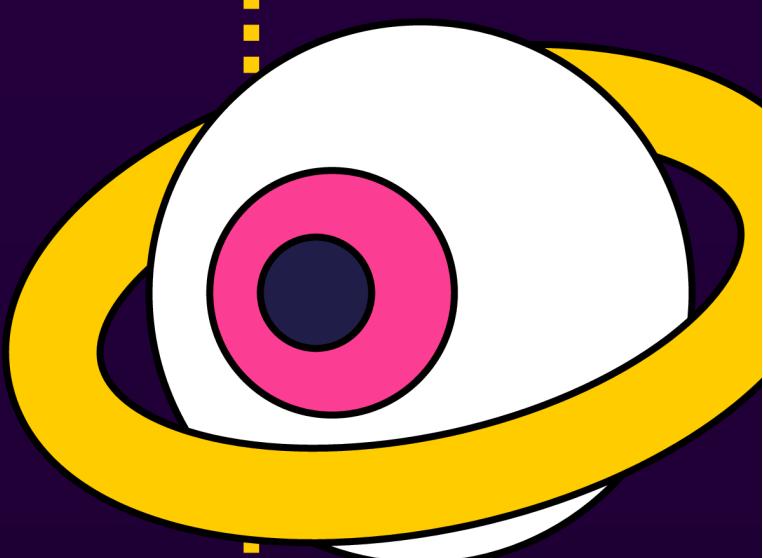
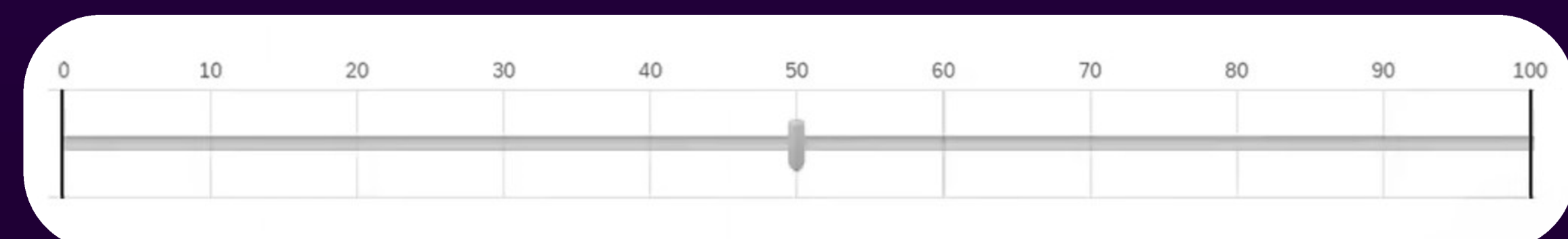
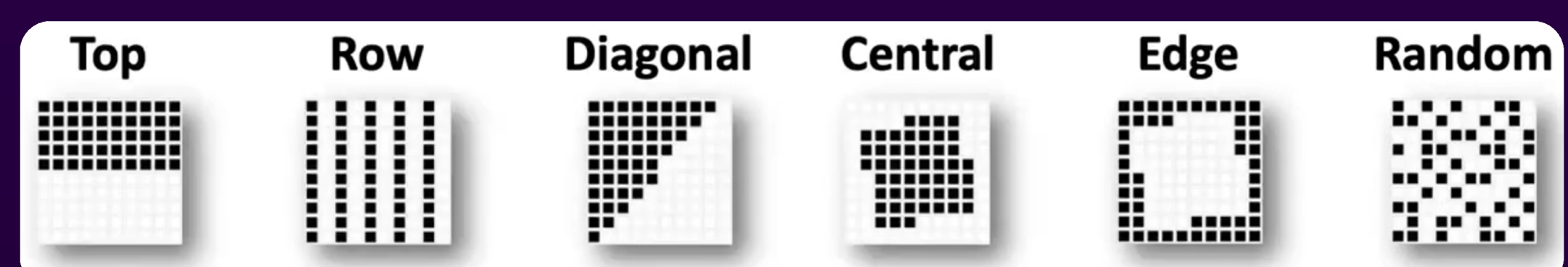
- Yes
- Potential viewer biases identified
- Design recommendations provided



Methodology

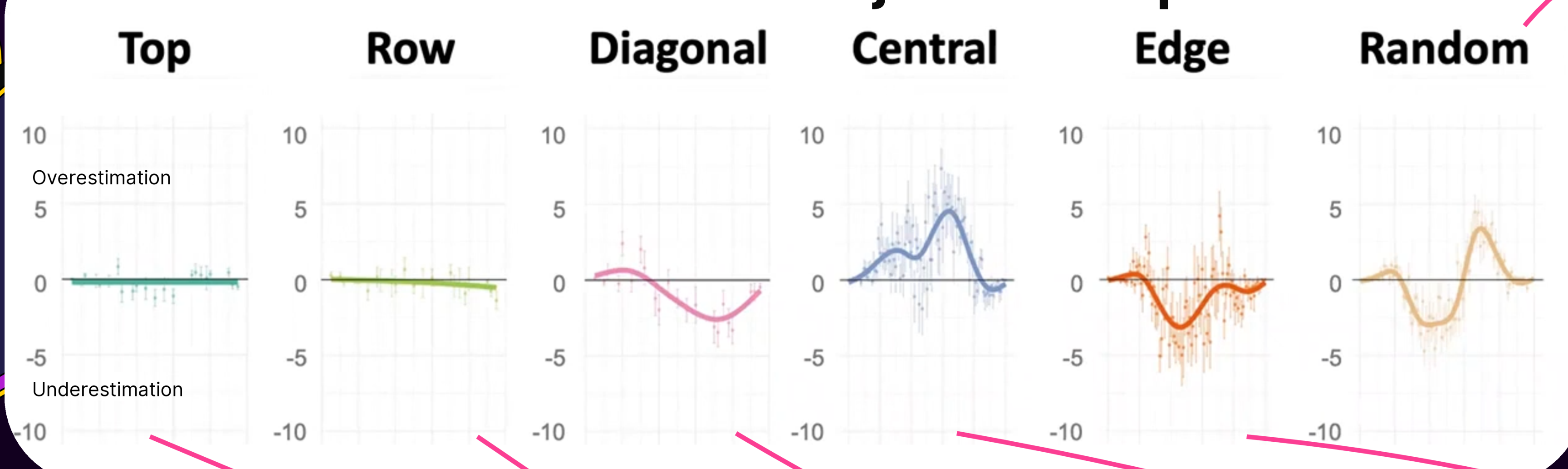
Participants shown proportions using different arrangements and asked to indicate the proportions observed using this slider

Arrangements



Results

Estimation Error vs Objective Proportion



Discussion

Random

- Reflects Steven's Power Law
 - Underestimate perceived small values
 - Overestimate perceived large values
- Suggests observers use 0% and 60% as reference points for estimations

Edge

- Lots to underestimation

Central

- Leads to overestimation

Top & Row

- Most accurate
- Little deviation

Diagonal

- Fairly accurate
- Small loss in perceptual accuracy

Limitations

- Limited number of arrangements tested
- Other visual factors can impact perception (eg colour)
- Translating visual data into verbal/numerical data can introduce bias (eg rounding to nearest 5)

Conclusion

- Best are **top & row** (from those tested)
- Designers must consider how proportions would be perceived

References

- Xiong, C., Sarvghad, A., Goldstein, D. G., Hofman, J. M., & Demiralp, Ç. (2022). Investigating perceptual biases in icon arrays. CHI Conference on Human Factors in Computing Systems. <https://doi.org/10.1145/3491102.3501874>
- ACM SIGCHI. (2022, April 3). Investigating perceptual biases in icon arrays [Video]. YouTube. <https://www.youtube.com/watch?v=S7kEZwHv4os>



← Paper

“i don’t even remember what i read”: how design influences dissociation on social media

a thread 📄

💬 43 ↺ 129 ❤️ 301

Background

Investigates social media use through the lens of [normative dissociation](#).

Methodology

A custom Twitter client, Chirp, was deployed. This allowed researchers to determine if users experienced dissociation as well as test different design interventions aimed at interrupting dissociation.

Results

Users do experience normative dissociation when using social media, and many are dissatisfied with this. However, the design interventions tested were able to [interrupt and reduce this](#).

Discussion

Users experiencing dissociation while using social media aren’t usually able to break themselves out of it. However, platforms may implement design features to help users interrupt their dissociation, regain control over their time, and improve their satisfaction with the platform.

Conclusion

The paper proposes that normative dissociation as a better model for what is commonly referred to as “internet addiction.” Moreover, given that users are generally frustrated by this experience, work can be done to implement design features that alleviate this dissociation.

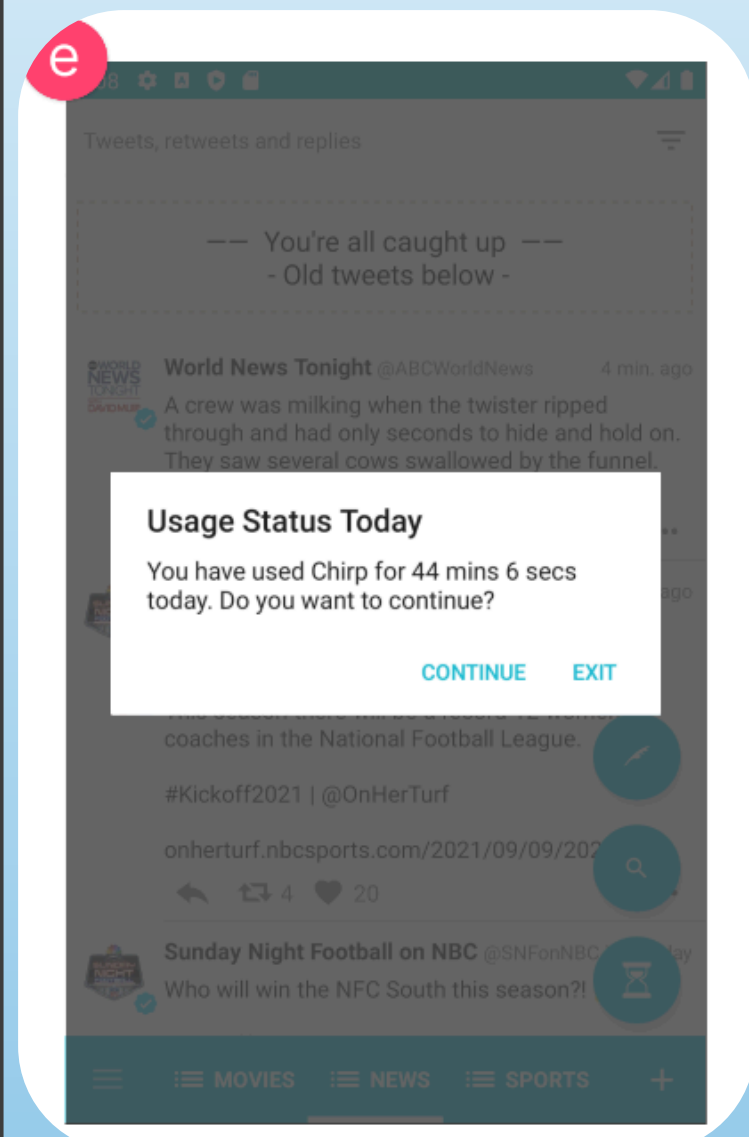
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normative dissociation

the everyday experience of being absorbed in an activity to the point of losing self-awareness.

through statistical analysis, researchers were able to show a negative correlation between their design interventions and dissociation



An example of a design intervention tested, a time limit dialog.

Who to follow

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