CS449 Assignment-3: Cognitive Modeling in HCI

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Which shopping procedure is faster, Amazon or Ebay?

Based on the calculations from CogTool, the Ebay mobile app completed the shoe purchase task in 40.9 seconds, which is 2.2 seconds faster than Amazon's time of 43.1 seconds.

Why is the faster procedure faster?

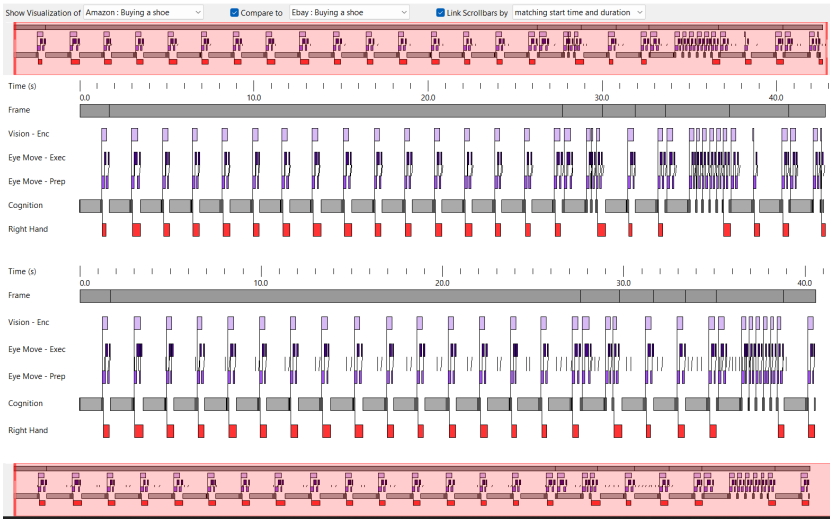

Figure 1. Comparison of eBay and Amazon by Visualization

In human-computer interaction (HCI), the comparison of eBay and Amazon's mobile app interfaces highlights the crucial role of interface design in user experience. David Benyon (2019) underscores the importance of the user interface in facilitating interaction between people and systems. The interface encompasses all aspects users interact with physically, perceptually, or conceptually, making a holistic approach to design essential for an efficient, user-friendly experience.

Physically, interaction might involve actions like pressing buttons or swiping screens. Perceptually, it's about how users see and understand interface elements, such as button size and label clarity. Conceptually, users engage with systems through understanding their functionality,

forming a 'mental model' of how things work (Benyon, 2019). This blend of physical, perceptual, and conceptual elements is vital in interface design, helping users effectively utilize the system.

Cooper et al. (2007) stress the role of visual interface design in UX, focusing on consistency and accommodating human perception and memory, like advocating for recognition over recall (Benyon, 2019). CogTool analysis reveals eBay's interface reduces cognitive load more effectively than Amazon's, likely due to fewer steps such as less scrolling for size selection and purchasing, resulting in a more intuitive process. This reflects a design that efficiently utilizes users' perceptual and conceptual understanding. As Dix et al. (2003) suggest, eBay's streamlined interface with fewer interaction steps and direct pathways enhances task efficiency and aligns with HCI principles of ease of use and intuitive design, highlighting the significance of thoughtful interface design in improving user experience.

How can you make the slower procedure faster? How much time can a user save with this change?

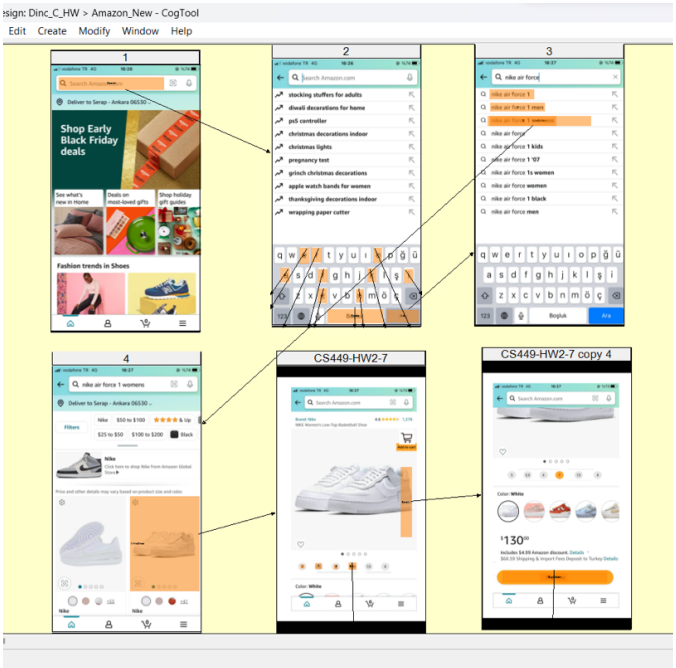

Figure 2. New Design of Amazon

Amazon's mobile app redesign streamlines the shoe purchasing process, adhering to key HCI and UX principles outlined by David Benyon in 2019. Figure 2 shows the new design featuring directly accessible shoe sizes with clickable buttons beneath the shoe image, simplifying size selection and reducing cognitive load, aligning with Benyon's principles of simplified navigation.

The redesign also resolves confusion from the original interface's similar 'Add to Cart' and 'Buy Now' buttons. A distinct cart icon at the shoe image's upper right corner aids in differentiating options, supporting HCI's focus on recognition over recall (Benyon, 2019), enabling quicker and more accurate selections.

Overall, this redesign saves 4.8 seconds, reducing the process time from 43.1 to 38.3 seconds. While modest individually, these savings contribute to significant efficiency and satisfaction gains for Amazon's extensive user base. This redesign demonstrates the impact of thoughtful design in enhancing user experience and operational efficiency on digital platforms.

References

Benyon, D. (2019). Visual interface design. In *Designing User Experience: A Guide to HCI, UX and Interaction Design* (4th ed., pp. 287-318). Pearson.

Cooper, A., Reiman, R. and Cronin, D. (2007) About Face 3: *The Essentials of Interaction Design*. Wiley, Hoboken, NJ.

Dix, A., Finlay, J., Abowd, G., & Beale, R. (2003). The Human. In *Human-computer Interaction* (3rd ed., pp. 11-58). Pearson.