



Eye Tracking Over Small and Large Shopping Displays

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Introduction



- Future pervasive shopping environments may embed eye trackers to track shoppers' gaze



Figure 1. Shopping: (a) XuuK's eyebox2; (b) CUshop

Background



- Current consumer-related eye tracking studies confined to projected screens or images
 - Packaging Media Lab in Bergvik shopping center (Lundberg, 2004)
 - Chandon et al's (2009) examination of shelf facings and position using *planograms*
 - Tonkin et al's (2011) comparison of visual search between physical and virtual display (projected screen)
- This paper compares visual search between projected screen and laptop display

Stimulus



Figure 2. Six product shelves: lettuce, lotion, dressing, freezer, organic, shampoo



Figure 3. Corresponding search products

- Six images of a grocery store's product shelves were made

Apparatus

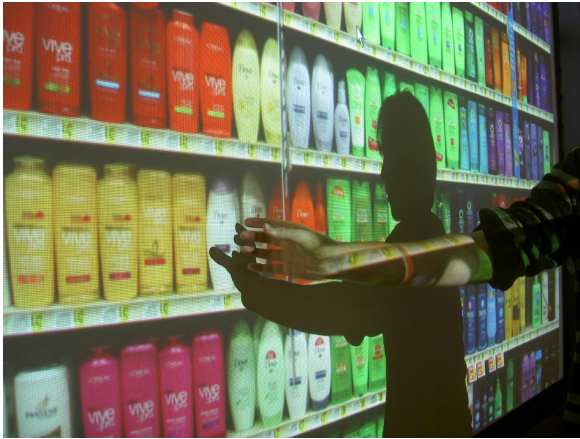


Figure 4. Apparent object size



Figure 5. Participant at canvas and laptop

- Apparent size of objects tested “manually”
- Two displays:
 - 15.4 inch laptop display
 - 11.5 foot projection canvas screen
- S1 eye tracker from Mirametrix

Experimental design



- 2 (display) x 6 (product) design
- 20 undergraduate or graduate students recruited
- one group searched for half the items on one display then switched displays (other group did the reverse)

	lettuce	lotion	dressing	freezer	organic	shampoo
canvas	G ₁	G ₁	G ₁	G ₂	G ₂	G ₂
laptop	G ₂	G ₂	G ₂	G ₁	G ₁	G ₁

Results



- Accuracy (correct identification) varied across the six product shelves
 - from 44% (lotion) to 100% (shampoo)
- Two-way ANOVA of search time showed:
 - significant effect of product ($F(5,75)=5.20, p<0.01$)
 - (to a lesser extent) effect of display ($F(1,79)=3.08, p=0.08$)

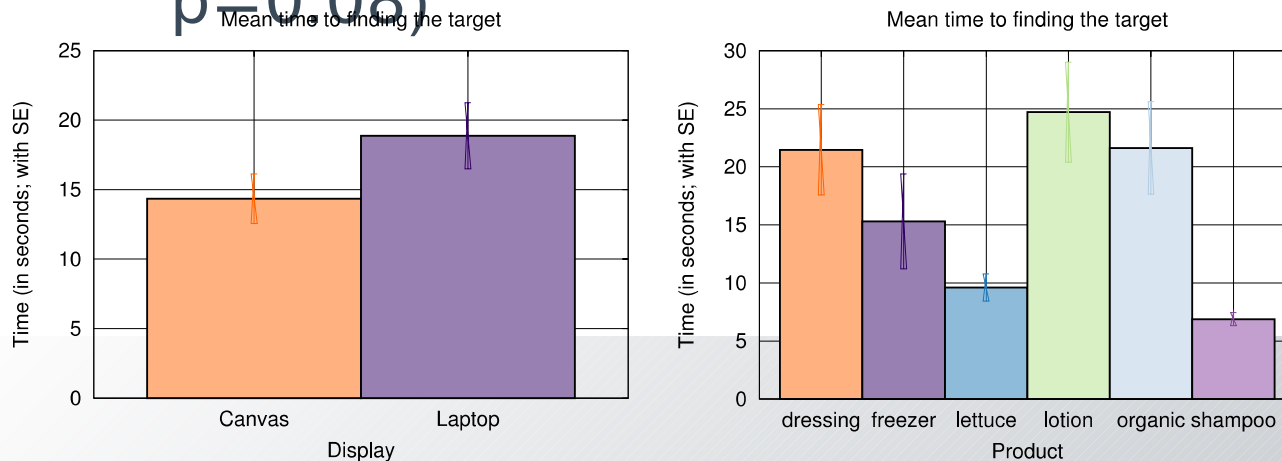


Figure 6. Search time results

Discussion



- Effect of display suggests larger display offers better preview benefit
- Effect of product type appears to be more significant
 - search may be highly dependent on shelf layout
 - context may be more important than display size
- Ultimately, pervasive eye tracking systems embedded in store shelves may be the most suitable for this type of research

Q & A



- Thank you!
- Questions?

