

Graphical Means of Directing Users' Attention in the Visual Interface

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Presenting Information

- 1. Presenting all objects in the same manner (multiple choices)
- 2. Forcing user to one choice (e.g O.K button)
- 3. Suggesting preferred action but leave choice to the user - attention direction by “masking”

Checking in with WarpGuide

WarpGuide is a task-mentor that needs to know who you are and how familiar you are with OS/2 Warp.

When you start a task that WarpGuide knows about, cue cards, like this one, or wizards, help guide you.

1. Type a name. WarpGuide will know you by this name.
2. Click the >> arrow on this cue card, or press Ctrl+Tab.



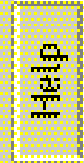
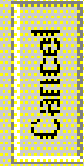
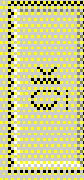
Use **Click** in for WarpGuide - New Person

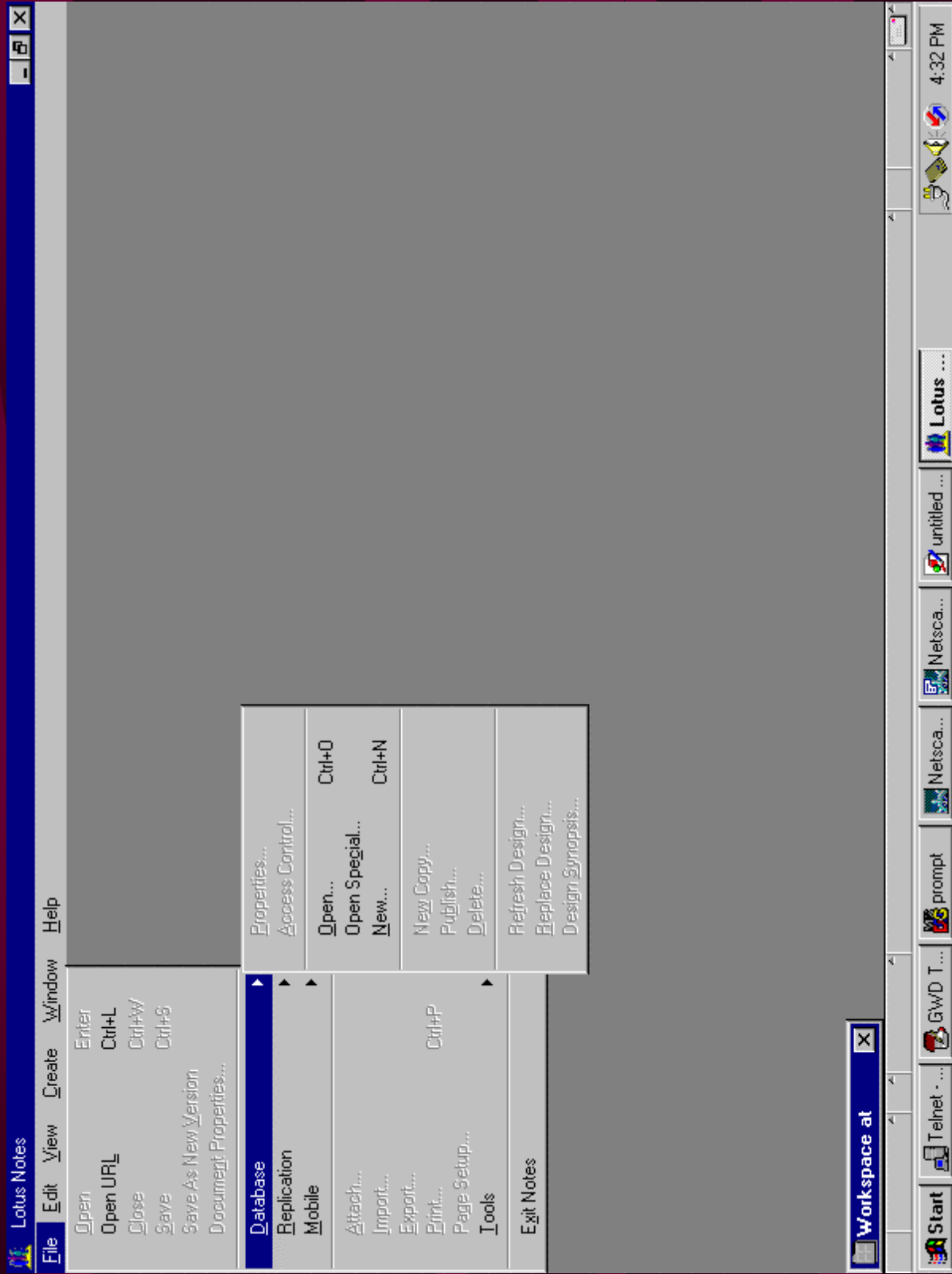
Name:

How comfortable are you with computers?

- I'm unfamiliar with computers
- I'm familiar with computers, but not OS/2
- I'm familiar with computers and OS/2

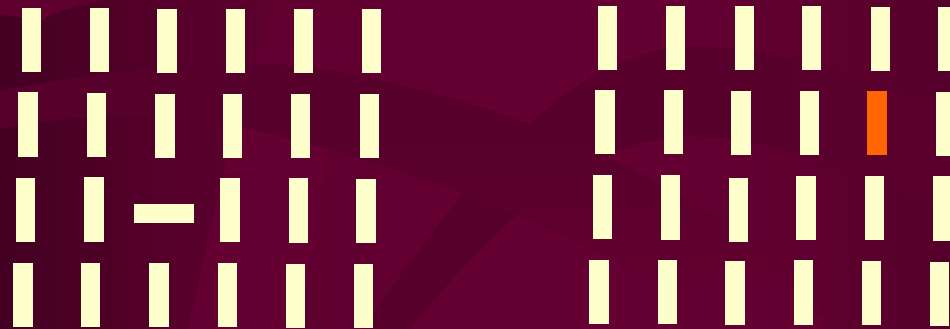
Change WarpGuide Properties...





Variety of Means for Directing Attention

- Highlighting
- Preattentive “pop out” effect



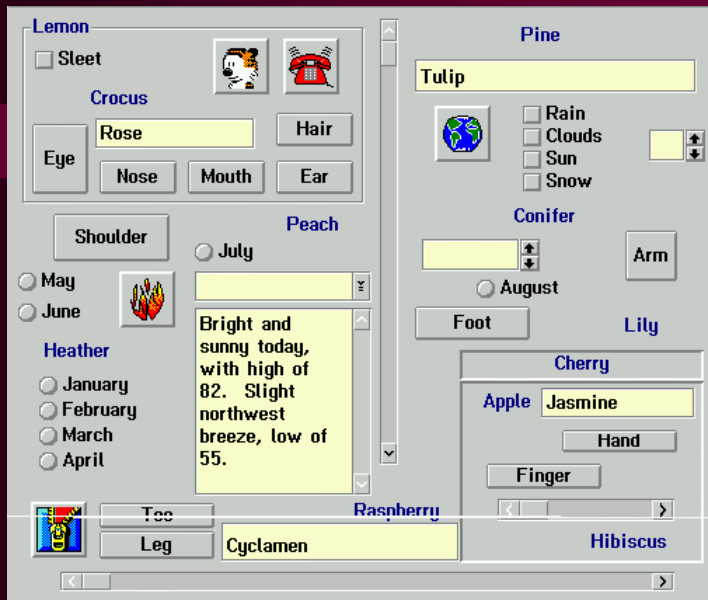
- Restricting application design space

Non-restrictive Methods

- Altering image by changing
 - brightness
 - contrast
 - resolution
 - etc.

Experiment 1

- Three methods / metaphors
 - Darkening
 - Bleaching
 - Blurring



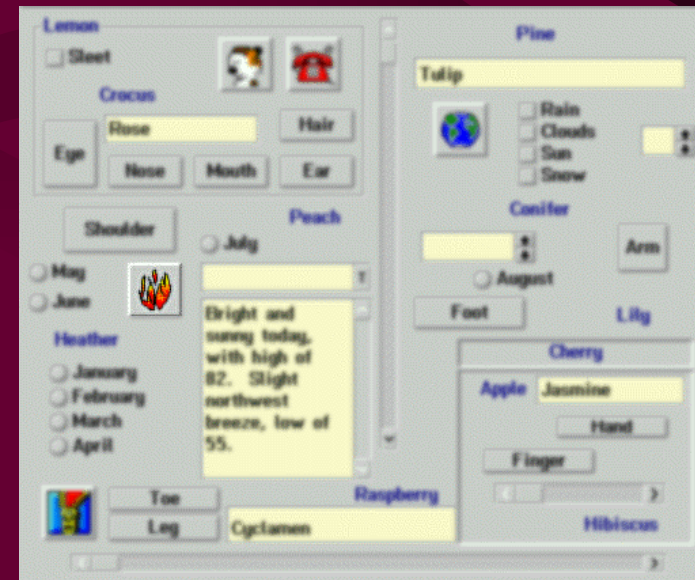
Unmasked



Bleached



Darkened

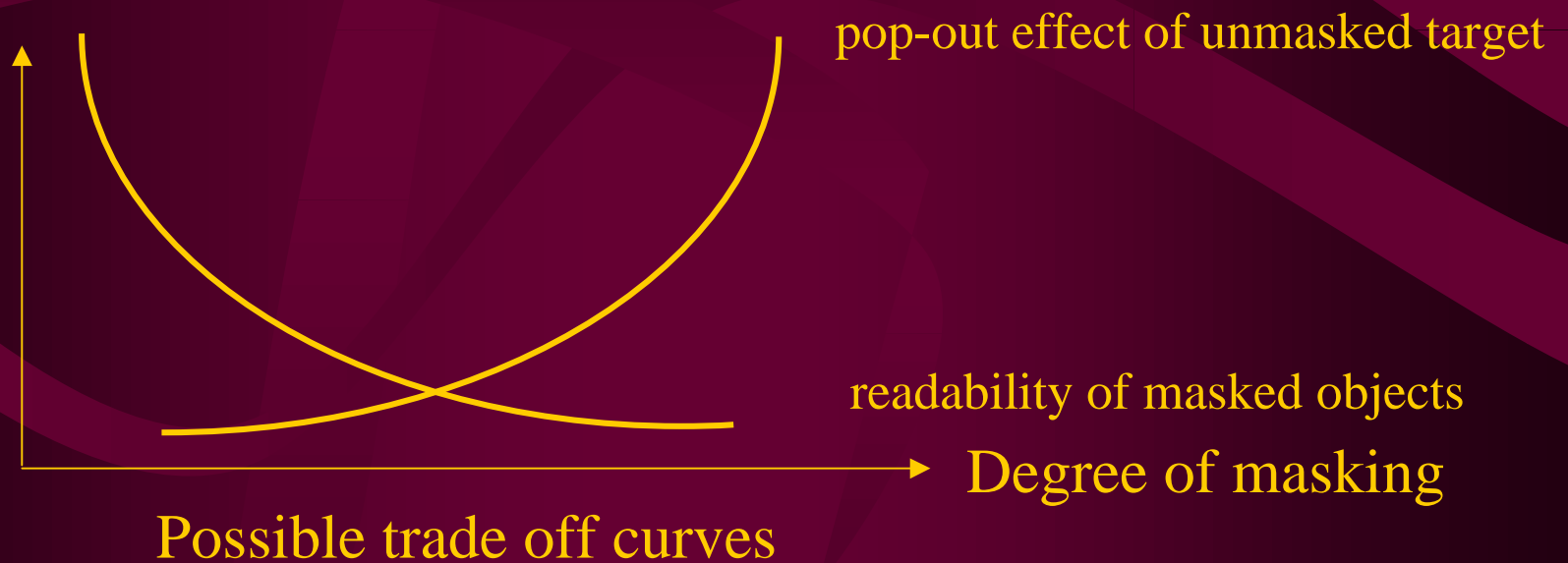


Blurred



Exp't 1: conclusions and unresolved issues

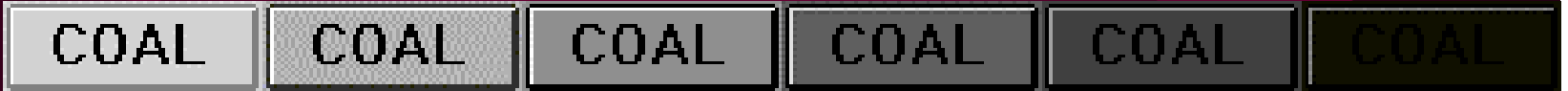
- Masking can be effective
- Some masking techniques are more effective than others
- No control condition
- Trade-off: pop-out effect vs. background readability



Experiment 2

- Systematic evaluation of three techniques
- 6 levels each

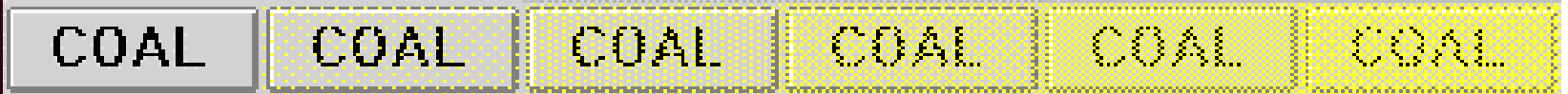
Darkened



Bleached



Screened



Masking
level

0
No mask

1

2

3

4

5

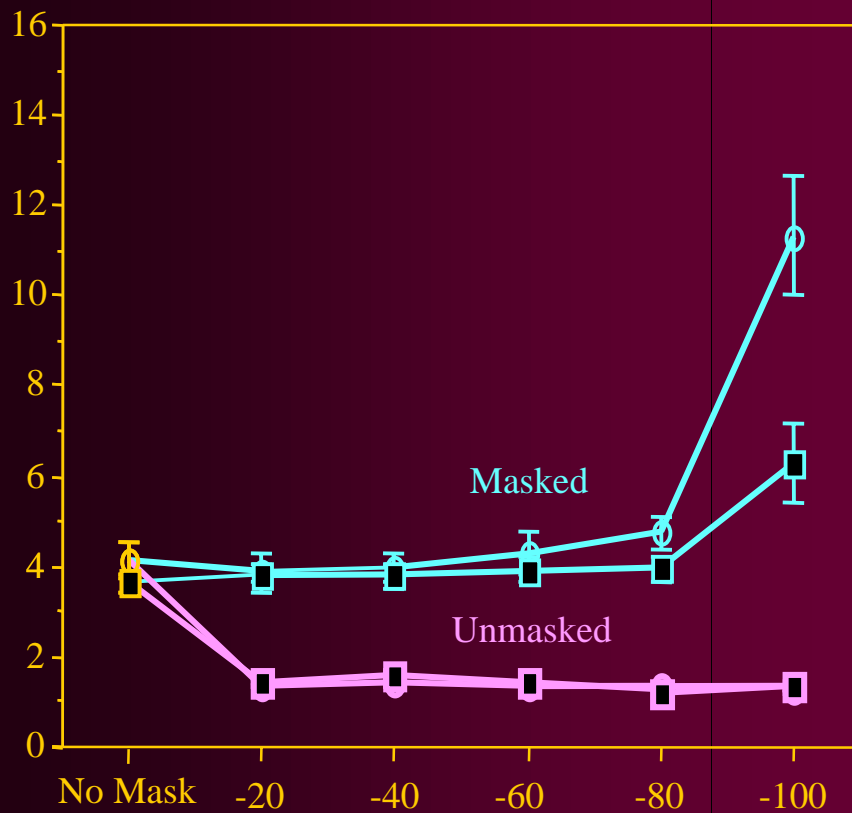
Expt'2 design



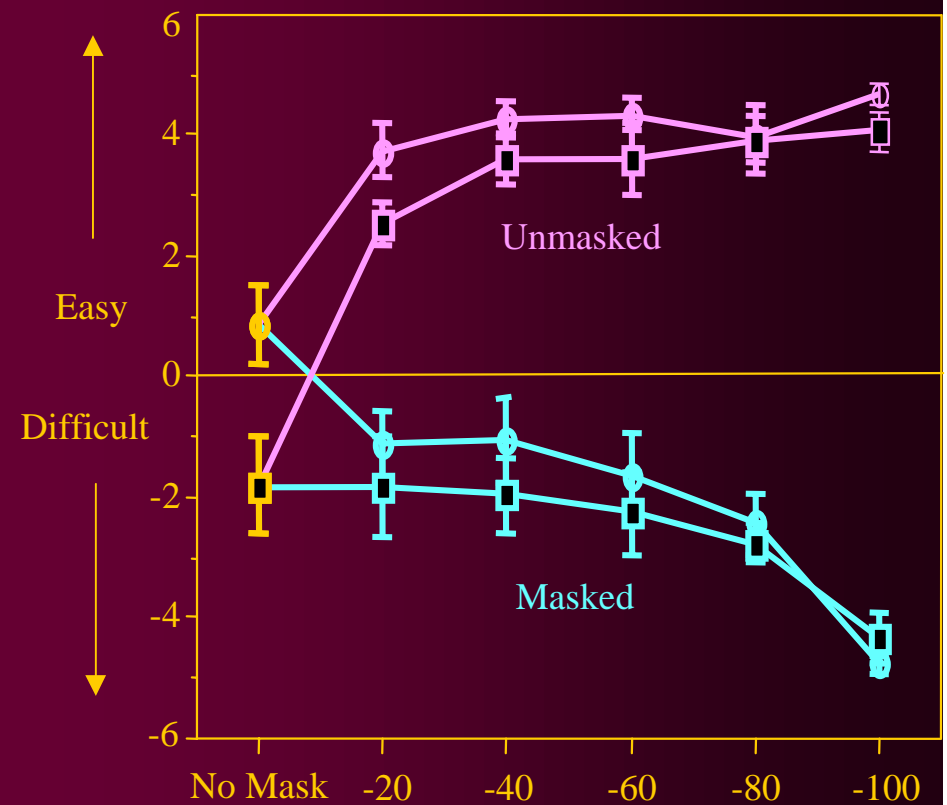
- Task: target selection
- Target could be masked (to measure readability) or unmasked/highlighted (to measure pop out effect)
- 13 subjects, balanced within
- Both performance and subjective rating measured

Results: masking by darkening

selection time (sec)



subjective rating

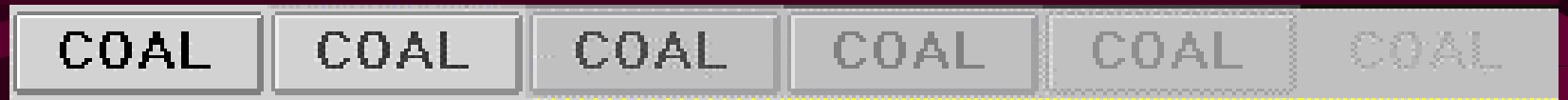


○ Head motion restrained ■ Head motion free

Darkening to various levels

						
Masking level	0 No mask	1	2	3	4	5

Bleaching to various levels



Masking
level

0

1

2

3

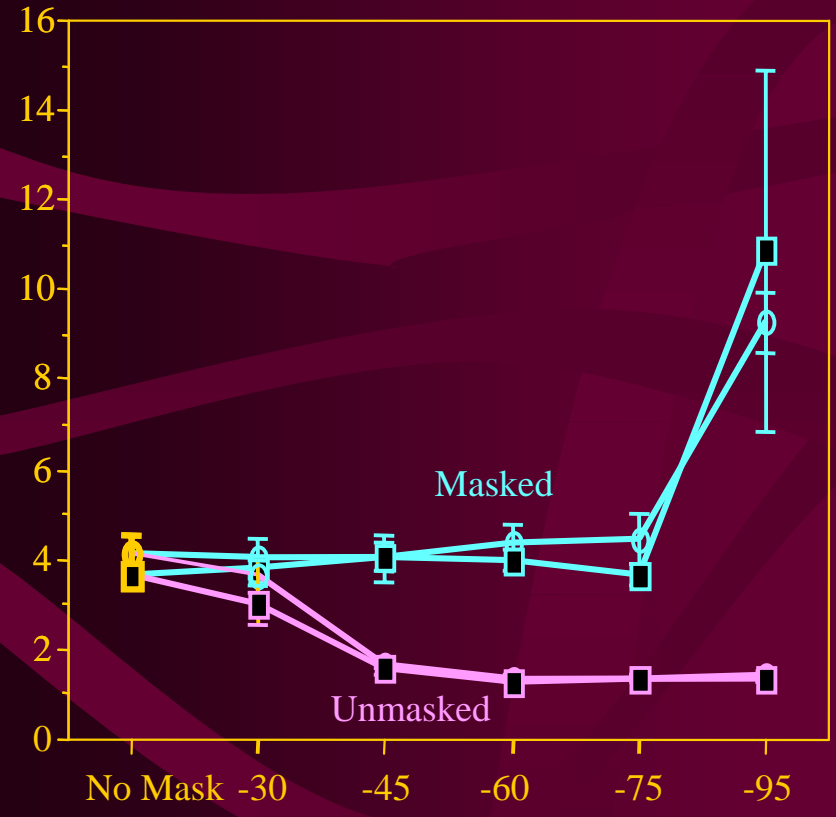
4

5

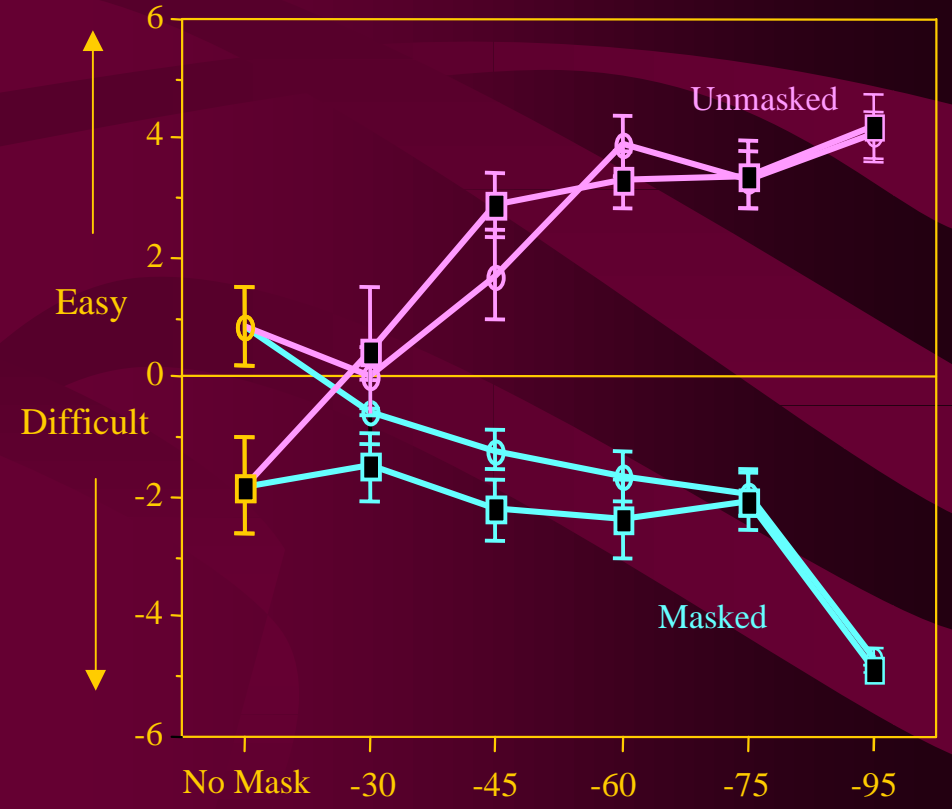
No mask

Bleaching

selection time (sec)



subjective rating



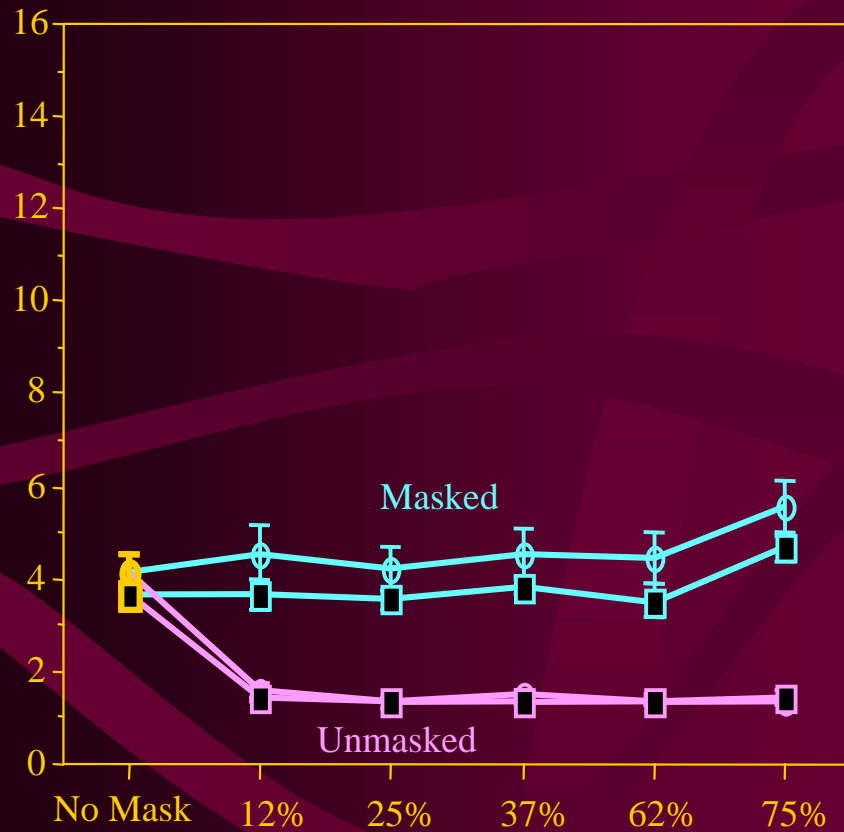
○ Head motion restrained ■ Head motion free

Screening to various levels

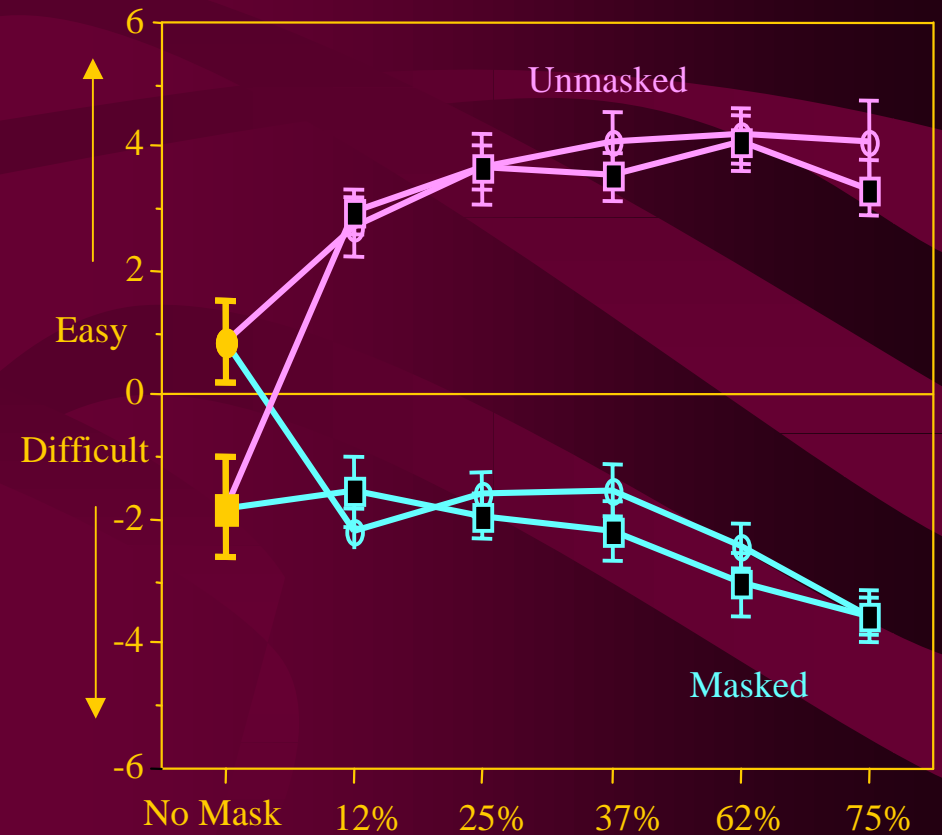
						
Masking level	0 No mask	1	2	3	4	5

Screening

selection time (sec)

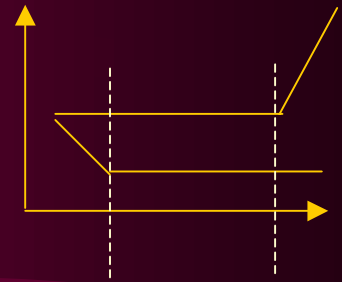


subjective rating



○ Head motion restrained ■ Head motion free

Conclusions



- pop-out effect “cues” subjects to unmasked object (from 4 to 1.5 sec)
- pop-out is binary, either on or off
- wide range of flat performance (e.g. screening: 12-62%) exists, giving flexibility to designers
- “graceful” human computer communication