

# focus+context 2

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## Review

- Recall Chia-Ning Chiang's March 22<sup>nd</sup> presentation
- Spatial methods
  - Fisheye views, hyperbolic trees, the document lens, stretchable rubber sheets, and other distortion-oriented methods.
- Dimensional methods
  - Magic lenses, tool glasses
- Cue methods
  - Color saturation, brightness

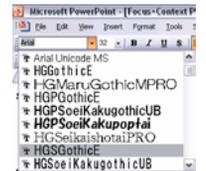
## 1. fisheye menus

2. distortion-oriented displays
3. zoomscapes

## Fisheye menus

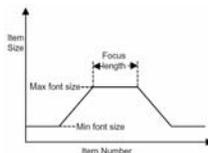
[Fisheye Menus](#) Benjamin B. Bederson (UIST 2000)

- Motivation: big menus are hard to navigate
- Current solutions
  - Arrow bar
  - Scroll bar
  - Hierarchy
- Idea: use fisheye distortion instead
- [Online demo...](#)



## Implementation

- Very simple DOI function
  - Considers only distance from focus point
  - Rest of items are reduced in size until min reached
- If not enough room
  - Focus length reduced
  - Then max font size reduced
- Lazy rendering of focus area

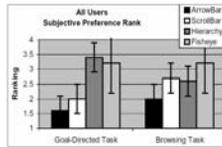


## Interesting problems

- Even this simple an innovation raises interesting problems
- Shifting a problem at extremes
  - Increase focus area at ends for visual stability
- Difficulty in selecting items
  - Considered special button, mouse speed
  - Created affordance instead
- Lock mode
  - Addresses the problem, but evaluation indicated that it wasn't a success

## Evaluation

- Goal of study
  - Get rough idea of user's preferences
  - Inform future evaluations
- Setup
  - 5 student programmers
  - 5 admin staff
  - Similar system to demo
  - Data was menu 100 web sites
- Results
  - Programmers liked fisheye more than non-programmers
  - Only one figured out "focus lock"



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## Critique

- Paper
  - Clear discussion of design issues
  - Reproducible results, tricky problems raised
  - Satisfactory evaluation
- Idea
  - Small scope
  - In all of MS Office, how many menus lend themselves well to this?
  - No discussion of how this might scale to data with no obvious sorting

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### 1. fisheye menus

### 2. distortion-oriented displays

### 3. zoomscapes

## WYSIWIS groupware

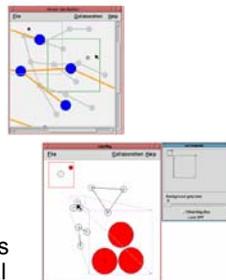
- [Using Distortion-Oriented Displays to Support Workspace Awareness](#) Saul Greenberg, Carl Gutwin, Andy Cockburn (HCI 1996)
- Need support for workspace awareness
  - See the big picture of the work
  - What parts of the whole others are working on
- Use distortion-oriented displays
  - Magnification views
  - Distortion views

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## Groupware tools

- Head-up lens
  - Multiple points of focus
  - [video 3:50]
- Offset lens
  - Others' focus visible with less clutter
  - [video 5:30]
- Fisheye text view
  - Supports coupling of views
  - But unlike others no global context (scrolls out of view, scroll context could help)
  - [video 7:40]



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## critiques

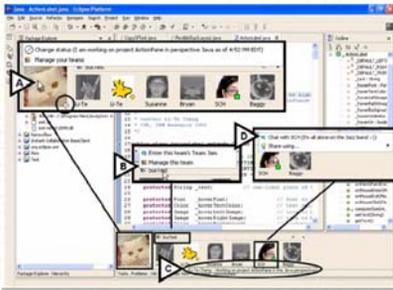
- Paper
  - Clear report of implementation and tradeoffs
  - Discussion of should inform future work
  - Lacks evaluation
- Ideas
  - Multi-user applications need UIs that support awareness and give global context
  - Compelling prototype implementations
  - But magnification views were not grounded in compelling use cases
  - Fisheye text view seemed to be relevant to real-world word processing applications

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## Related work

- Development environments are collaborative tools
- Jazz for Eclipse



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1. *fish-eye menus*
2. *distortion-oriented displays*
3. **zoomscapes**

## ZoomScapes

- Guimbretière, F., Stone, M., and Winograd, T. [Fluid Interaction with High-resolution Wall-Size Displays](#) (UIST 2001)
- Different approach to focus+context
  - Fisheye menus and DateLens seem great, but..
  - We don't always work with contiguous 2D spaces, but rather with multiple windows/files

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## Big displays

- Motivation: large displays
  - Gesture-based interaction
  - Working with multiple “sheets” can cause clutter
  - Use ZoomScapes to maintain workspace context

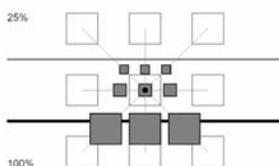


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## Implementation

- Gradually transform geometry of sheet group
- Considerations
  - When to scale members of a group
  - Abruptness of scaling (make continuous)
- Cursor determines scaling when on boundary
  - Emergent feature
- [video 4:00]



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## Critique

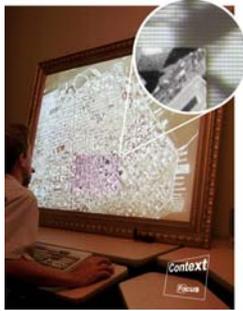
- Paper
  - Well-grounded in brainstorming use case
  - Excellent design discussion
  - Lacks formal evaluation, but the practical approach is convincing
- Ideas
  - Innovative technology & medium
  - Simple, predictable, user-driven distortion
  - Preserves physical metaphor
  - Lacks discussion of scaling alternatives

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## Related work

- 9 Megapixels are expensive
  - Patrick Baudisch's focus+context screens
- Halo



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1. *fisheye menus*
  2. *distortion-oriented displays*
  3. *zoomscapes*
- wrap-up**

## Challenges

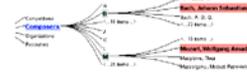
- Physical zooming
  - Is it the right metaphor for all applications?
  - Leverage semantic information
    - Greenberg et al. hinted at resolving call links
- Groupware
  - Offline collaboration?
- Active selection vs. passive browsing
  - Fisheyes worked well for browsing task
  - [Visual Thesaurus demo...](#)

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## Other ideas

- Better DOI functions (Card et al.)



- Fluid Documents (Zellweger et al.)

When in the Course of human Events, it becomes necessary for one People to dissolve the Political Bands which have connected them with another, and to assume among the Powers of the Earth, the separate and equal Station to which the Laws of Nature and of Nature's God entitle them, a decent Respect to the Opinions of Mankind requires that they should declare the causes which impel them to the Separation.

We hold these Truths to be self-evident, that all Men are created equal, that they are endowed by their Creator with certain unalienable Rights, that among these are Life, Liberty and the Pursuit of Happiness. That to secure these Rights, Governments are instituted among Men, deriving their just Powers from the Consent of the Governed, that whenever any Form of Government becomes destructive of these Ends, it is the Right of the People to alter or to abolish it, and to institute new Government, laying its

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