Week 2: Expert Evaluation

Wednesday lecture

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Slides inspired by previous HCI lecturers: Nicole Meng-Schneider, Kami Vaniea, John Vines

today

- Hands-on activity
  - Heuristic evaluation example
- Heuristic evaluation vs. cognitive walkthrough
- Reflections on expert evaluation and usability

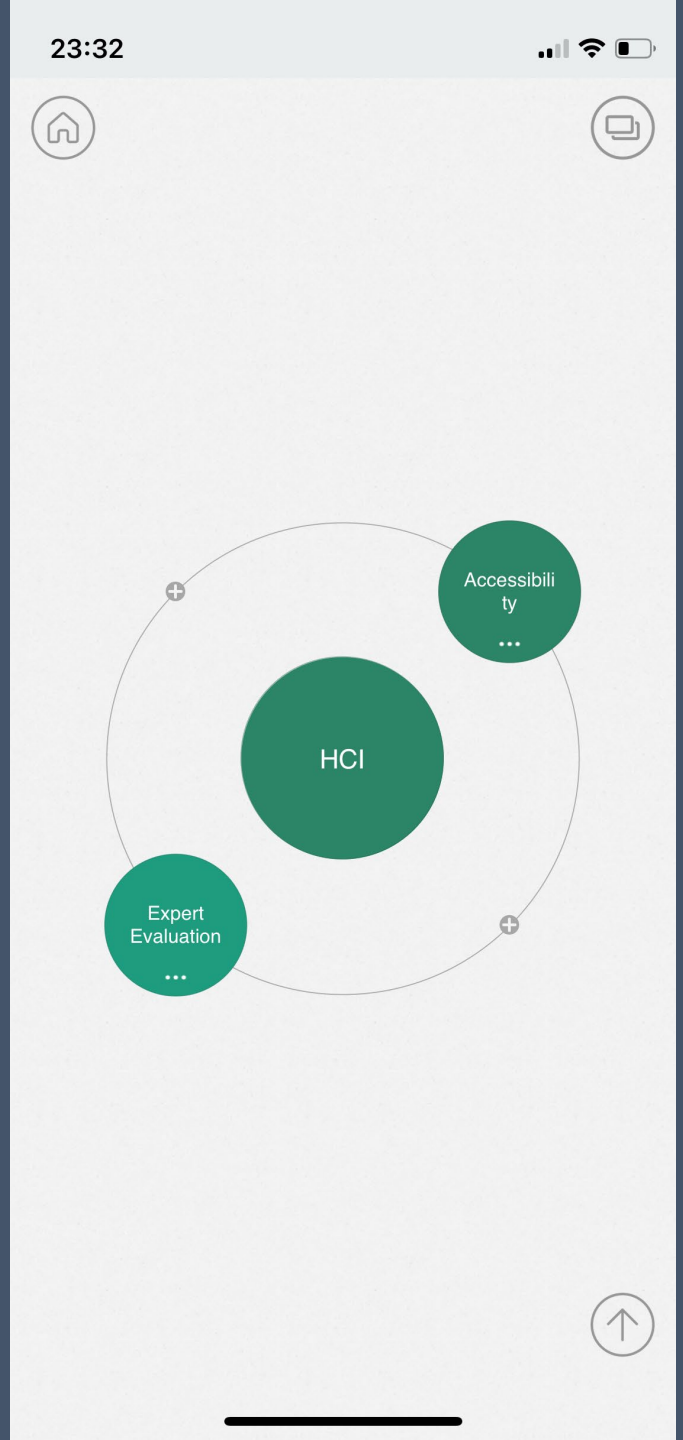
if you have a group of 2 – register it on learn, and we will find additional students

questions about assignment 1 and/or group forming?

heuristic evaluation example

homework

- Install Mindly
- Create a mindmap/network
- Example: HCI network based on course content so far
- HCI
  - Accessibility
    - Accessibility Factors
    - Inclusive Design
  - Expert Evaluation
    - Heuristic Evaluation
    - Cognitive Walkthrough
- Explore the interface
  - 2 usability issues
  - 2 things that work well



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1: Visibility of System Status

2: Match Between the System and the Real World

3: User Control and Freedom

4: Consistency and Standards

5: Error Prevention

6: Recognition Rather than Recall

7: Flexibility & Efficiency of Use

8: Aesthetic & Minimalist Design

9: Help Users Recognize, Diagnose, and Recover from Errors

10: Help and Documentation

- Hands-on activity
  - Get together in groups of 2-3
  - Share the features and issues you have found
  - Discuss the potential heuristics linked to these features and issues

[15-20min]

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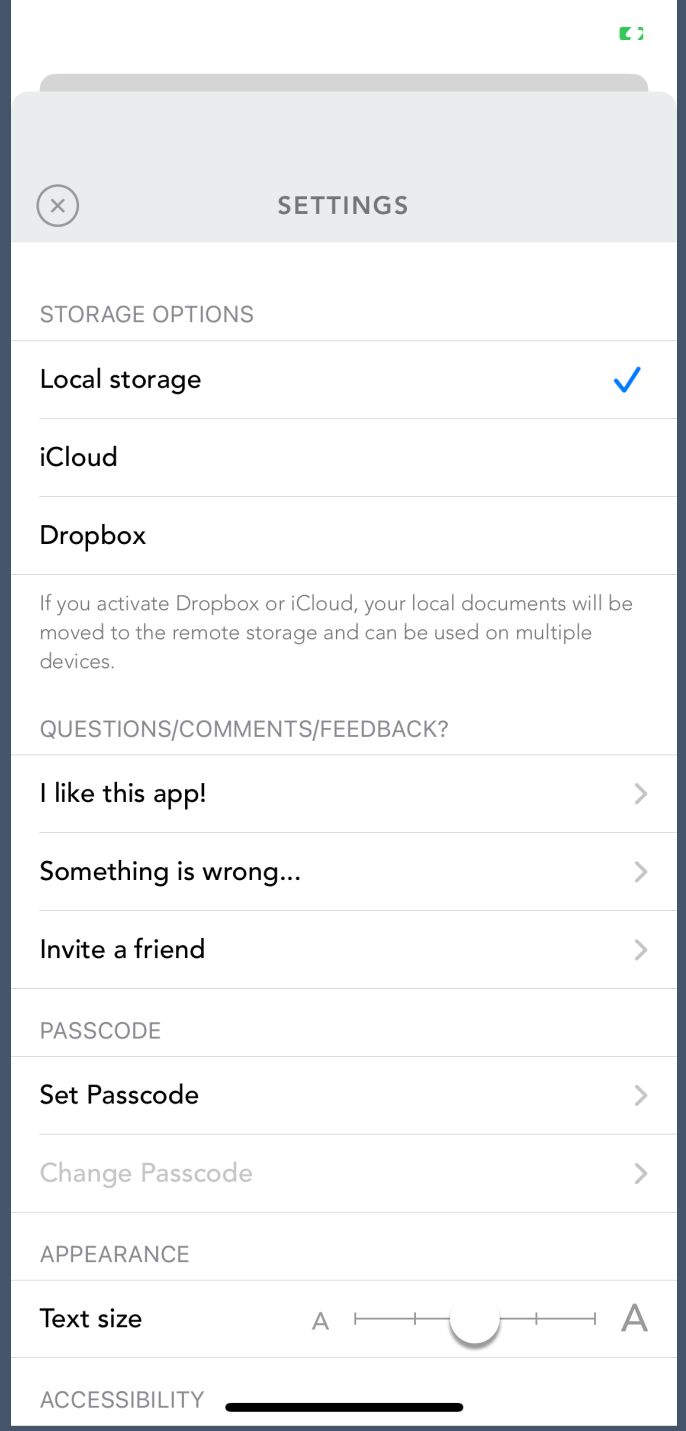
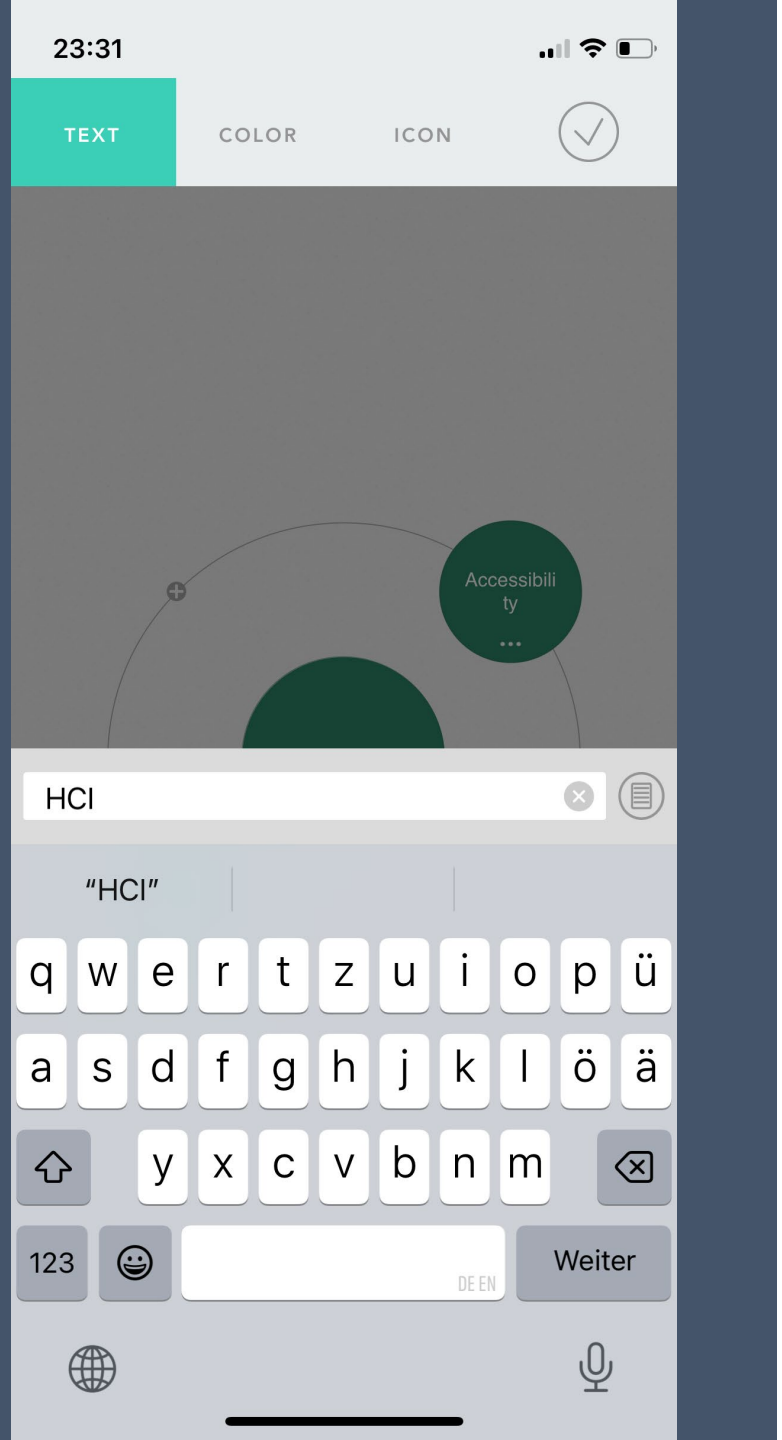
  - Get together in groups of 2-3
  - Share the features and issues you have found
  - Discuss the potential heuristics linked to these features and issues
- Sharing & discussion



+ Positive feature: Customizabilty
  - Customization settings
  - Good for accessibility, etc.
- Heuristic(s)

  3. User control and freedom
  - Adjustability of features



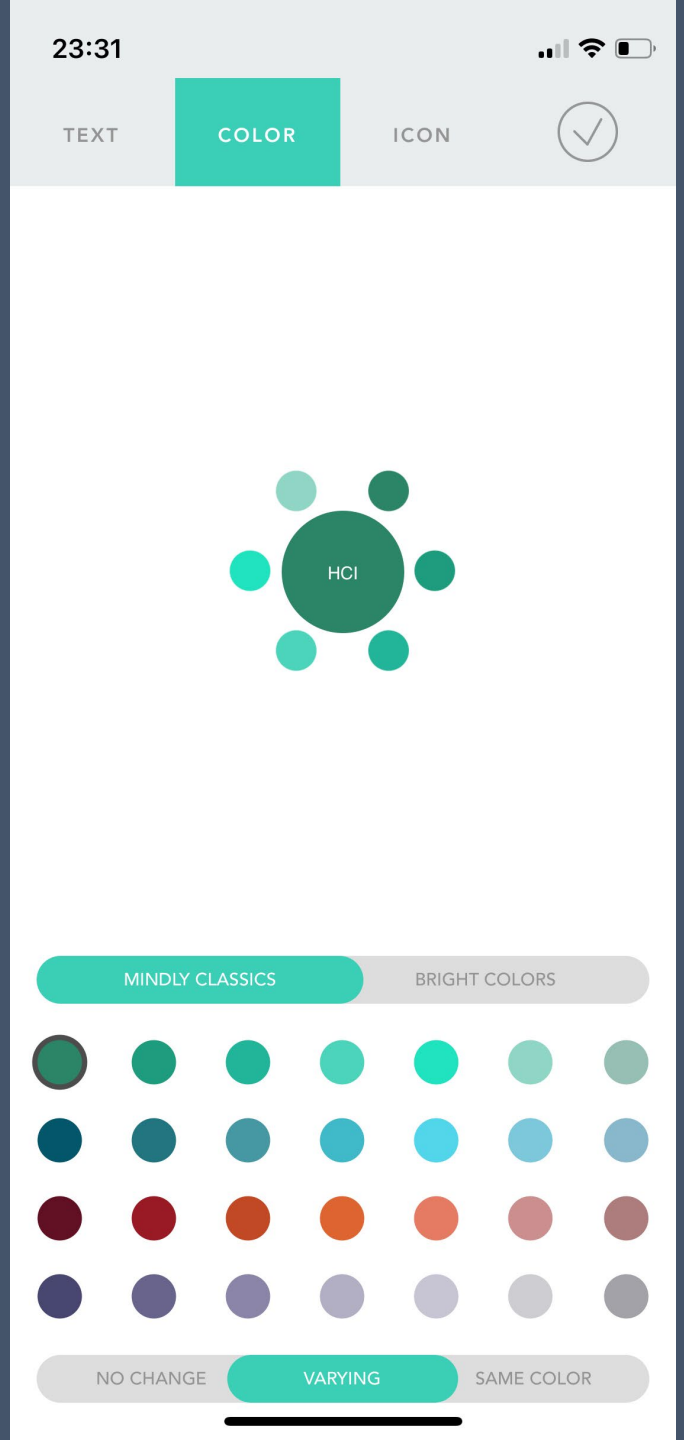
+ Positive feature: Creating the network
  - Easy adding and editing of nodes
- Heuristic(s)

  3. User control and freedom
  - Adjustability of features

  4. Consistency of standards

  maybe even

  2. Match between the system and the real world
  - *Systems should speak the users' language with familiar words, phrases, and concepts rather than system-oriented terms.*



+ Positive feature: Colour schemes
  - Customizable colour schemes for network nodes
  - But could be expanded further!!
- Heuristic(s)

  3. User control and freedom
  - *Adjustability of features*

  4. Consistency of standards

  maybe even

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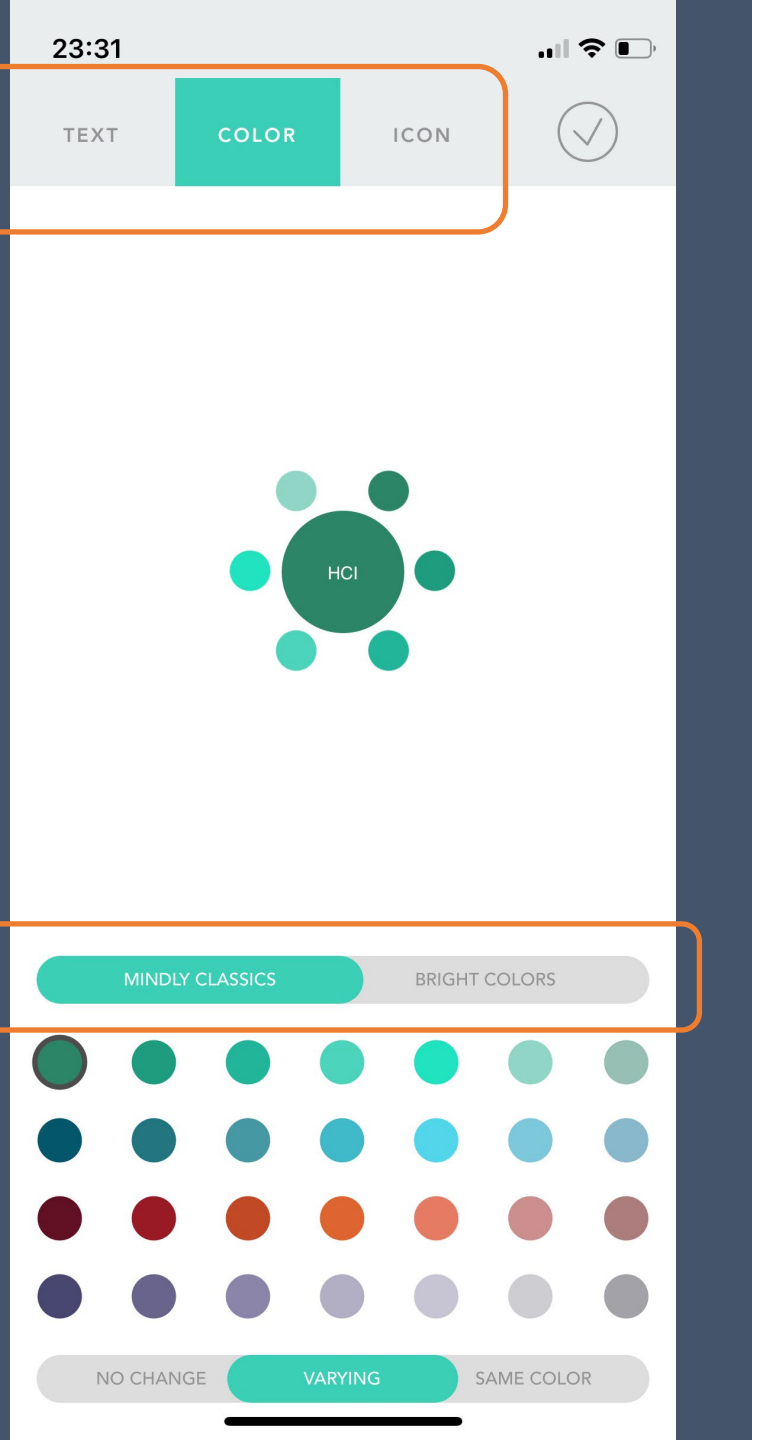
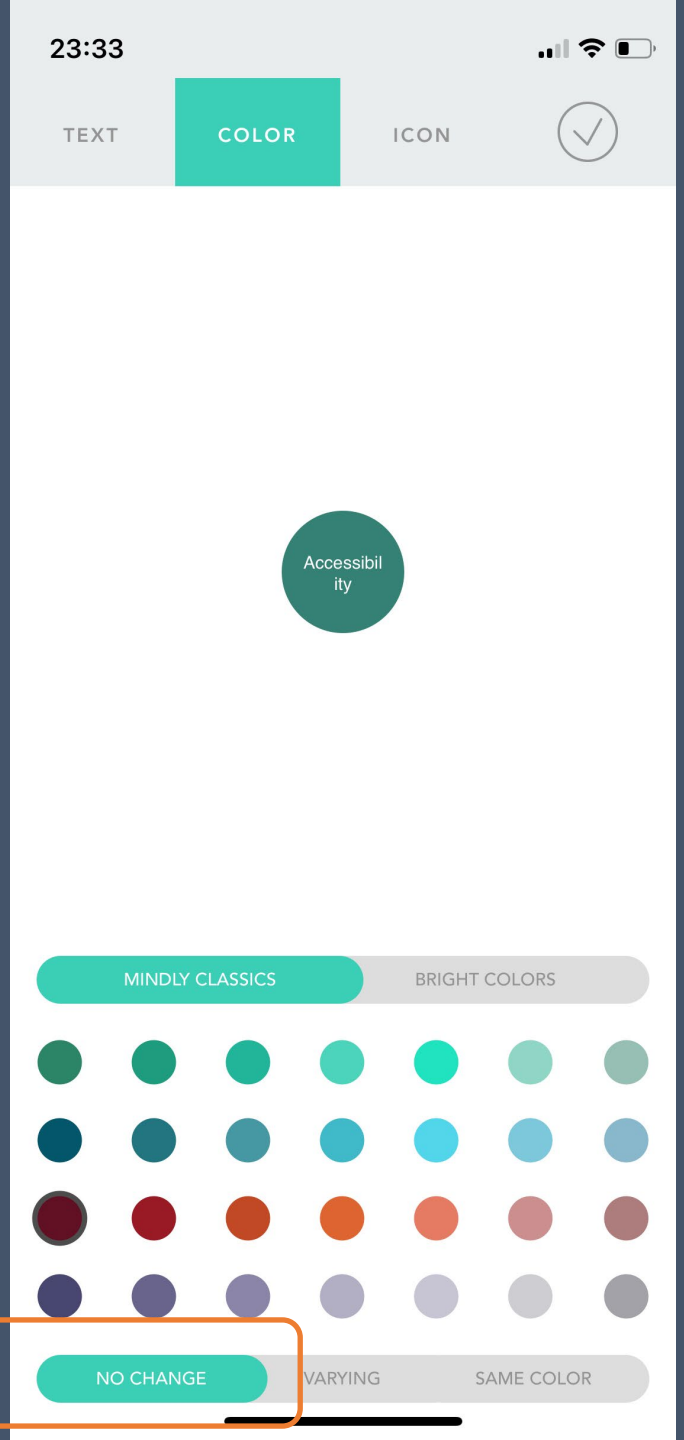
  - *Systems should speak the users' language with familiar words, phrases, and concepts rather than system-oriented terms.*



+ Positive feature: Labelling of buttons
  - (mostly) Clear labelling of buttons in the top and bottom menu
- Heuristic(s)
  6. Recognition rather than recall
    - *Minimize the user's memory load by making elements, actions, and options visible*
  8. Aesthetic and Minimalist Design
    - *Interfaces should only include necessary elements, with high informational value*



- Problem: obscure buttons
  - Effect of some buttons unclear
- Heuristic(s) violated

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  6. Recognition rather than recall
  - *Minimize the user's memory load by making elements, actions, and options visible*
- ✓ Potential solution
  - Use more conventional symbols
  - Provide explanation upon touch

- Problem: some features require both hands for interaction
  - For example, deleting a node cannot be done via thumb
  - Instead, one hand has to hold the mobile, while the other hand moves the node to the black symbol
- Heuristic(s) violated

  6. Recognition rather than recall
  - *Minimize the user's memory load by making elements, actions, and options visible*
- ✓ Possible solution
  - Bring up a menu upon long-hold of node

- Problem: zooming in and out
  - Common pinch gesture does not work for getting back to mindmap overview
  - One has to touch the higher level node in the top left corner to travel up the network hierarchy
- Heuristic(s) violated

  4. Consistency and standards
  - *When things look and behave the same, we know what to expect*

  3. User Control and Freedom
  - Allow users to exit a flow or undo their last action and go back to the system's previous state.

  7. Flexibility and Efficiency of Use
  - *Make it work for different abilities and needs*

- Problem: tedious colour editing
  - Editing colours of nodes can feel tedious, especially if one has a colour scheme that is not automatically supported by the system
  - Each node has to be edited manually
- Heuristic(s) violated

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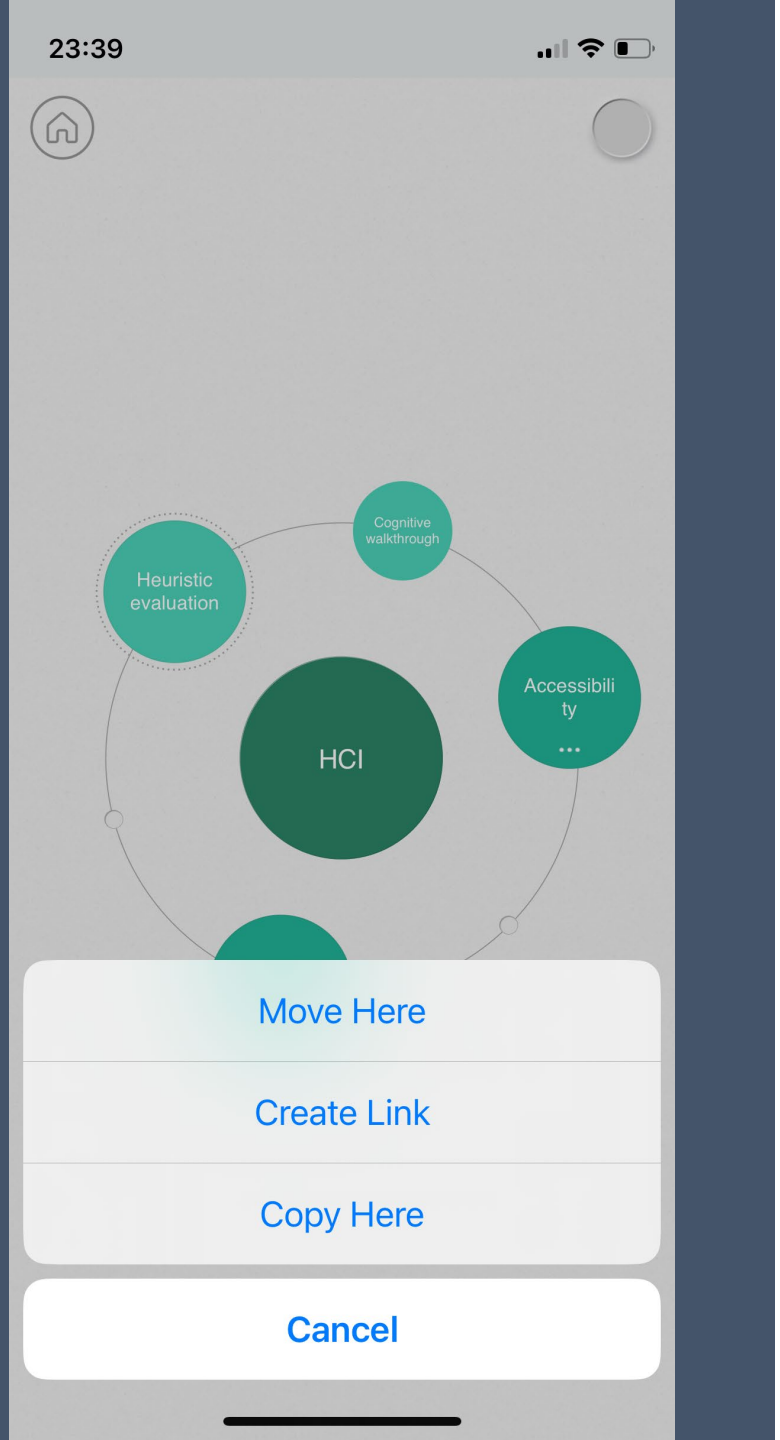
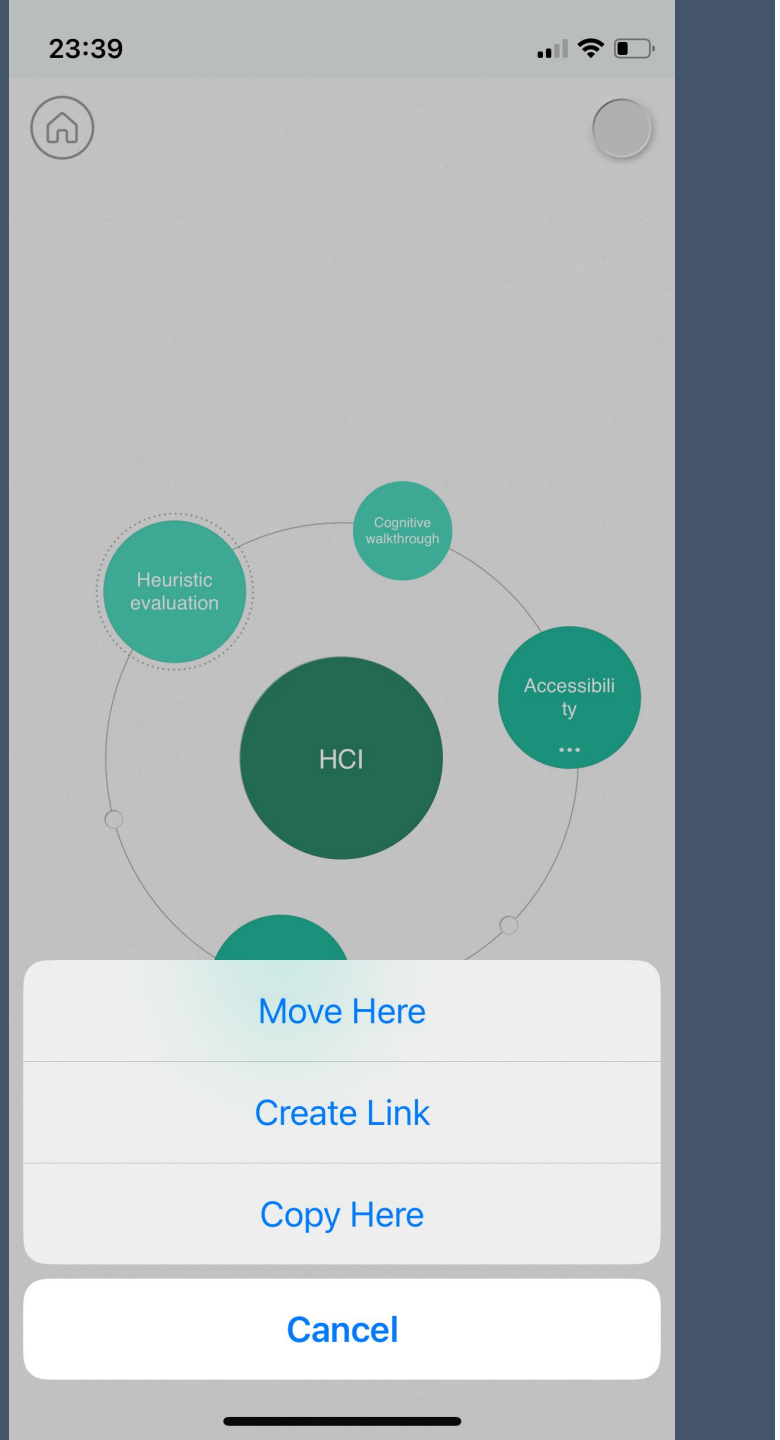


- Problem: unclear feature; lack of discoverability
  - Moving a node into the copy area and then to another area of the graph, brings up the option to "create" link, but this link is then not really visible

- Heuristic(s) violated

1. Visibility of system status
   - *Communicating the current state allows users to feel in control of the system, take appropriate actions to reach their goal, and ultimately trust the system*

7. Recognition rather than recall
   - *Minimize the user's memory load by making elements, actions, and options visible*



- Problem: no documentation
  - There does not seem to be a documentation (at least I could not find it)
- Heuristic(s) violated

  10. Help and Documentation
  - *No proactive help (tooltips can be difficult on direct-touch screens*
  - *No reactive help (documentation)*

heuristic evaluation vs. cognitive walkthrough

heuristic evaluation vs. cognitive walkthrough

commonalities

- Both evaluate a system by looking at it's design and how it may break or implement heuristics
  - Could be Nielsen's heuristics or others
- Both are evaluation strategies that do not rely on actual users but on experts

differences

Heuristic Evaluation

- Based on heuristics (e.g., Nielsen's Heuristics)
  1. Visibility of System Status
  2. Match Between the System and the Real World
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  10. Help and Documentation

Cognitive Walkthrough

- Based on 4 questions
  1. Will users want to produce whatever effect an action has?
  2. Will users see the control (button, menu, label) for the action?
  3. Once users find the control, will they recognize that it will produce the effect they want?
  4. After users have completed the action, will they understand the feedback provided, so they can confidently continue on to the next action

differences

Heuristic Evaluation

- Focuses on the system's design in general
- Design is reviewed against a set of principles (the heuristics)

Cognitive Walkthrough

- Focuses on tasks
- What are the goals?
- Can they be completed (easily)?
- What problems might occur?
- Applies heuristics to understand why a problem might occur

pros & cons of expert evaluation

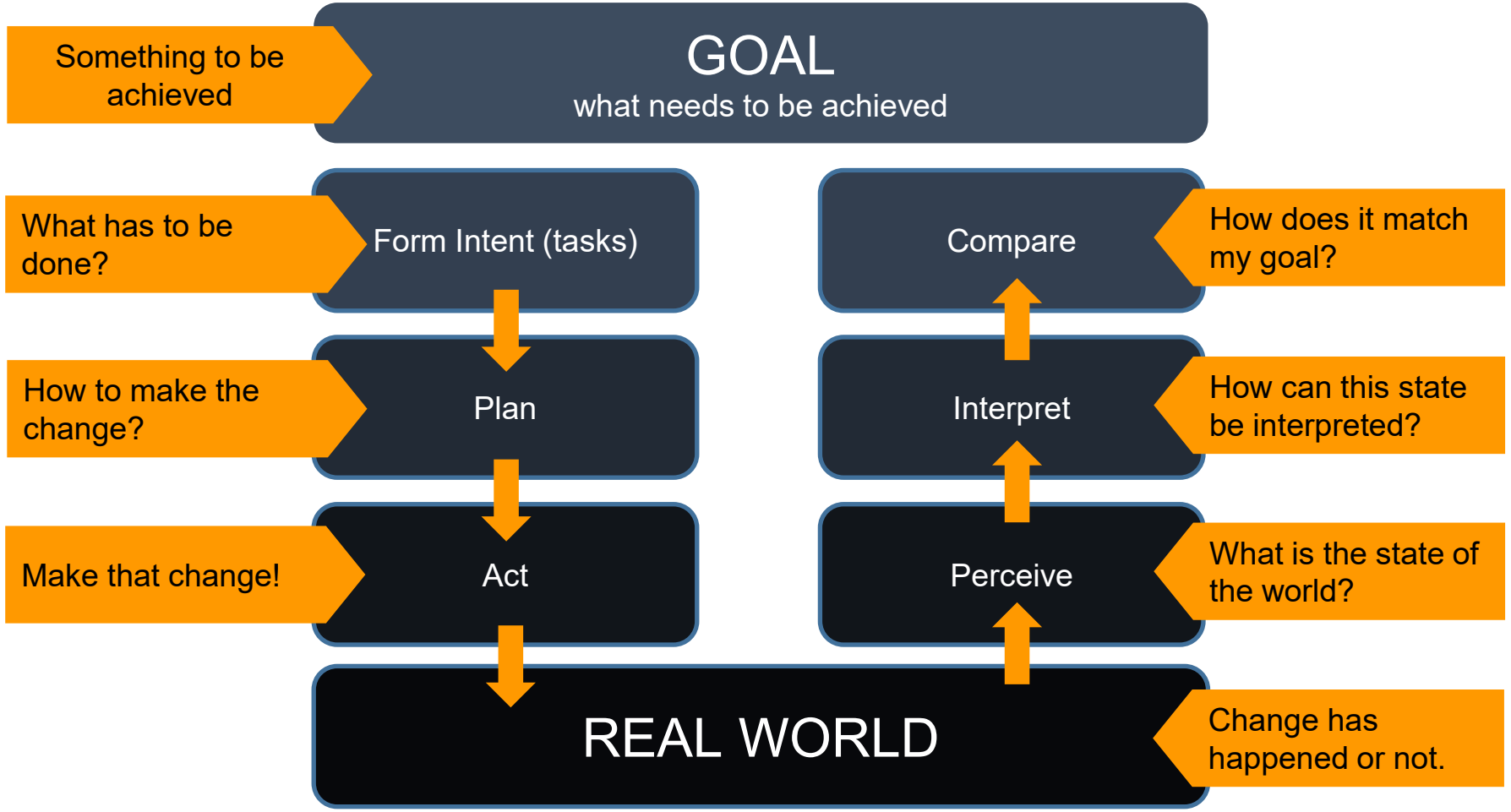
- Pros
  - No need to apply for ethics, recruit study participants
  - Finding potentially expensive problems at minimal expense
- Cons
  - Experts are not the same as real-world users; some issues may be missed
  - Heuristics, in particular, represent “rules of thumb”, but they may not apply to all systems and contexts and all problems that may occur

some additional heuristics

- Mobile devices
- Data visualization

reflections on expert evaluation & usability

interaction cycle



Don Norman. The Seven Stages of Action
https://foundationsofhci.wordpress.com/module-2/

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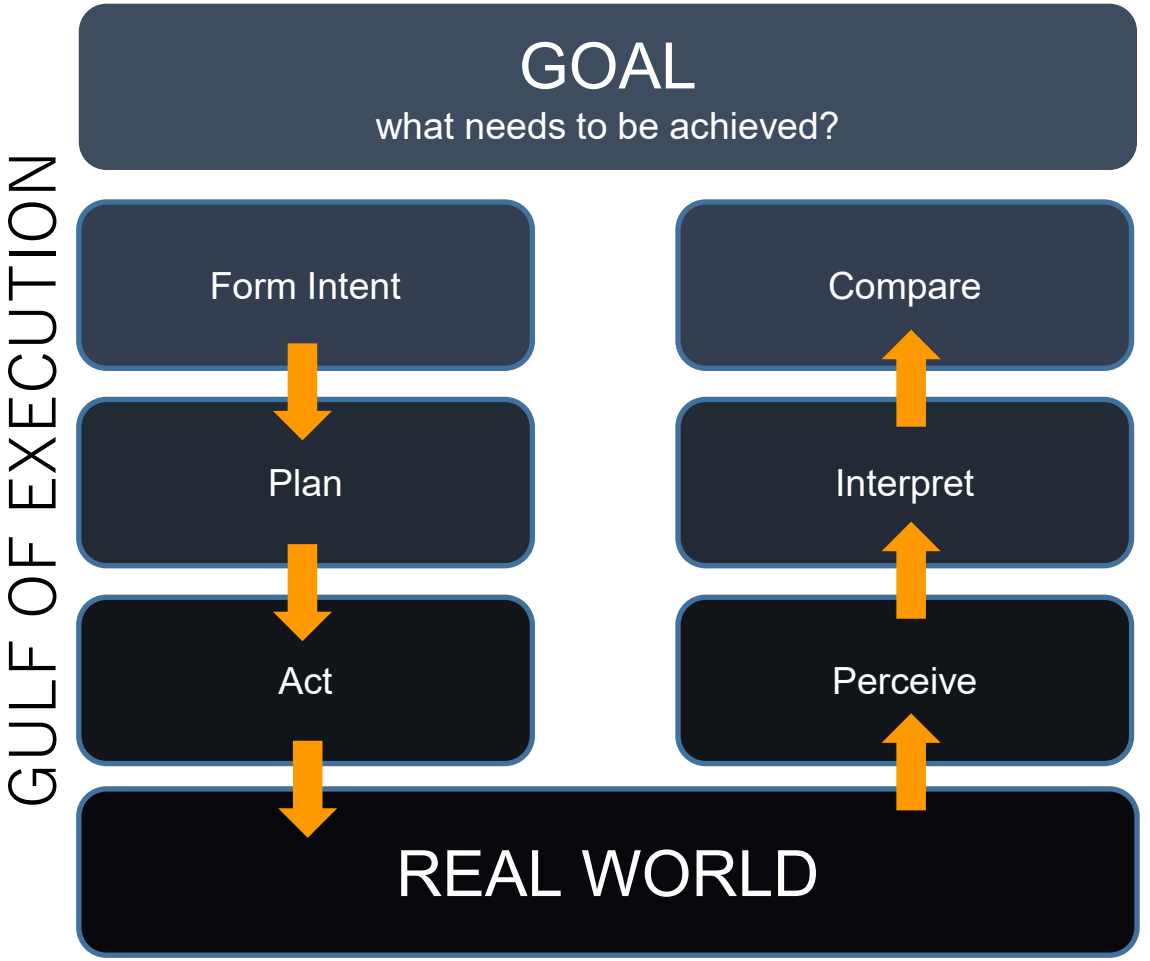
gulf of execution

What can I do?
How can I do it?

→ Visible cues
→ Constraints
→ Mappings



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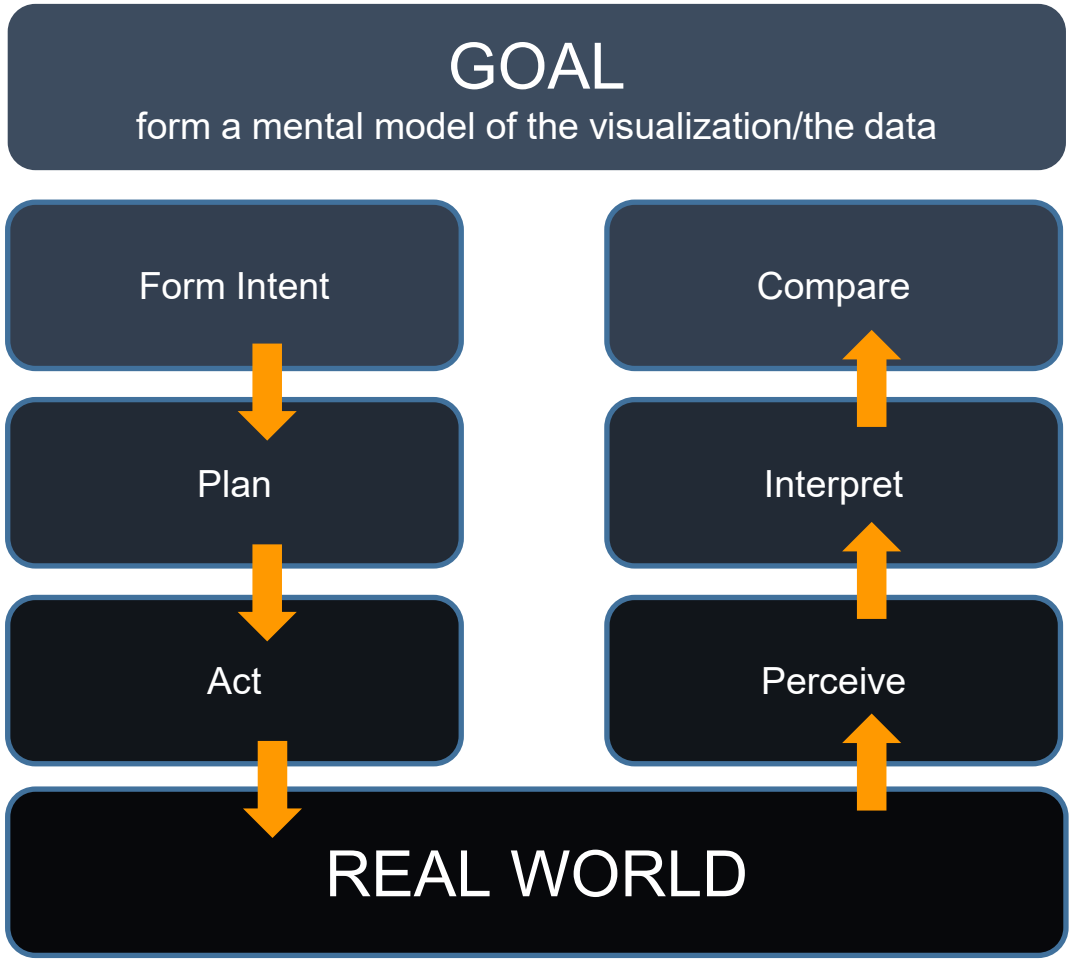
gulf of evaluation



GULF OF EVALUATION

What change happened?

Is this what I wanted?

→ Good feedback
→ Good conceptual model

Don Norman. The Seven Stages of Action
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potential pitfalls

- Focus on tasks rather than goals
  - Goal: something to be achieved
  - Task: specific action taken to get to the goal

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- Considering usability in itself as a design requirement
  - It is too vague to be testable
  - It depends on
    - the features of the interactive system
    - the indented audience and their background
    - their goals and tasks
    - the environment

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  - It depends on
    - the features of the interactive system
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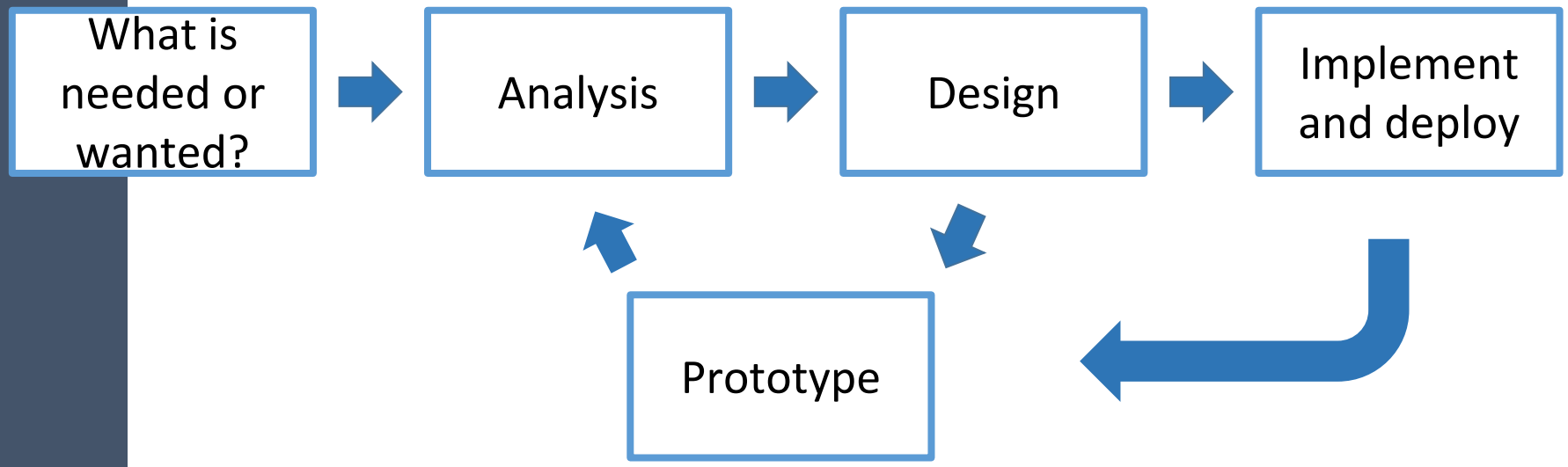
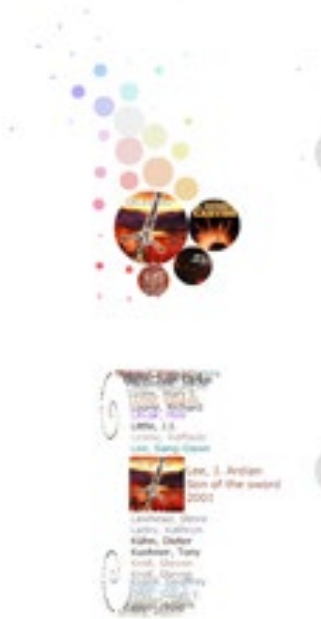
- Considering heuristics as rules
  - Heuristics are rules of thumbs
  - In some design/evaluation stages, they should not be the centre of attention

potential pitfalls



COVER COLOUR
Browse Books by Colour

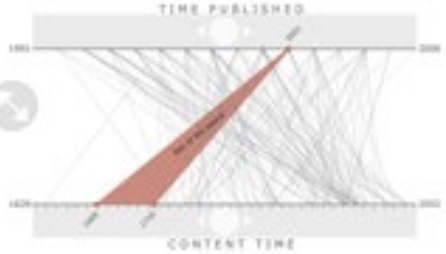


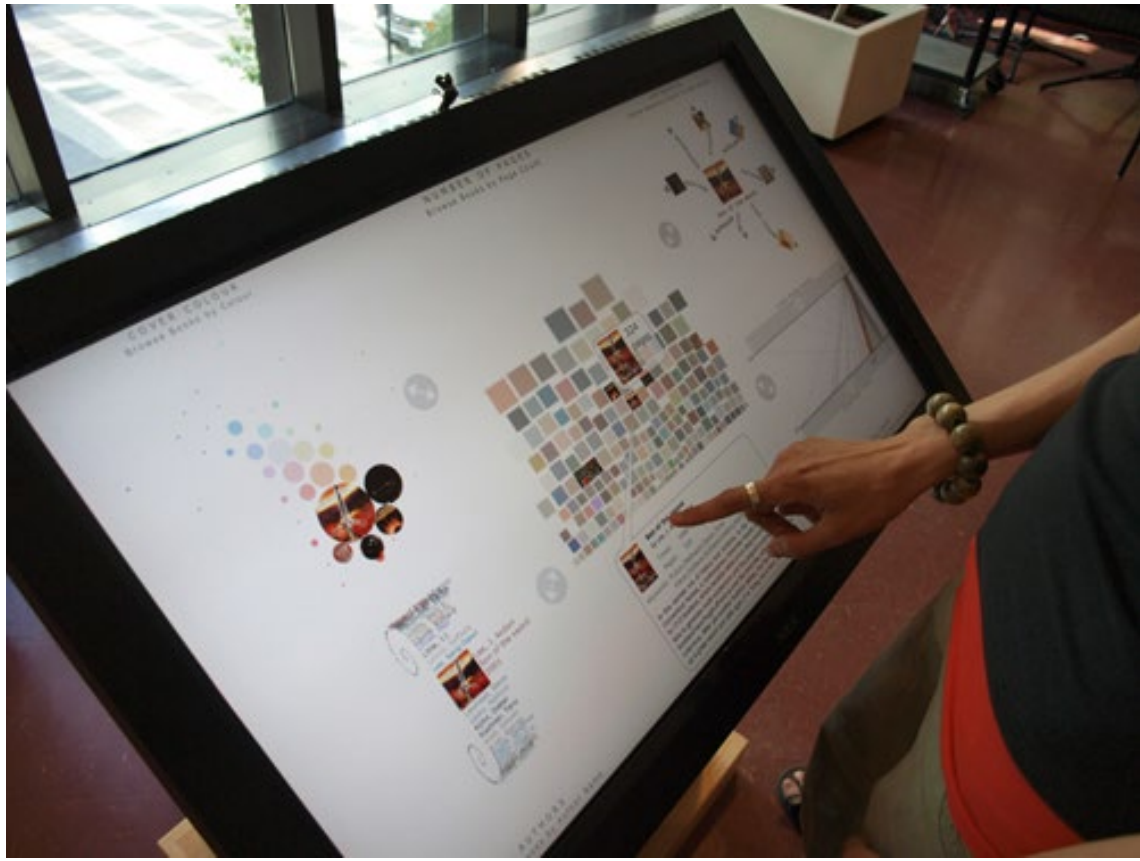
AUTHORS
Browse Books by Author Name

NUMBER OF PAGES
Browse Books by Page Count

KEYWORDS
Follow Keyword Chains to New Books

TIMELINES
Compare Publication Year and Content Time





potential pitfalls

RESEARCH-ARTICLE

Usability evaluation considered harmful (some of the time)

Authors: Saul Greenberg, Bill Buxton | Authors Info & Claims

CHI '08: Proceedings of the SIGCHI Conference on Human Factors in Computing Systems • Pages 111 - 120
https://doi.org/10.1145/1357054.1357074

Published: 06 April 2008 Publication History | Check for updates

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CHI '08: Proceedings of the SIGCHI Conference...
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Pages 111 – 120

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Abstract
Supplementary Material
References
Cited By
Index Terms

dl.acm.org/doi/proceedings/10.1145/1357054

Abstract

Current practice in Human Computer Interaction as encouraged by educational institutes, academic review processes, and institutions with usability groups advocate usability evaluation as a critical part of every design process. This is for good reason: usability evaluation has a significant role to play when conditions warrant it. Yet evaluation can be ineffective and even harmful if naively done 'by rule' rather than 'by thought'. If done during early stage design, it can mute creative ideas that do not conform to current interface norms. If done to test radical innovations, the many interface issues that would likely arise from an immature technology can quash what could have been an inspired vision. If done to validate an academic prototype, it may incorrectly suggest a design's scientific worthiness

Saul Greenberg and Bill Buxton. 2008. **Usability evaluation considered harmful (some of the time)**. In Proceedings of the SIGCHI Conference on Human Factors in Computing Systems (CHI '08). Association for Computing Machinery, New York, NY, USA, 111–120. https://doi.org/10.1145/1357054.1357074

next steps

- Week 3: Design requirements gathering
- Videos on OpenCourse:

https://opencourse.inf.ed.ac.uk/hci/week3

- Group sign-up ends today!
  - Form a group and self-enroll on Learn OR
  - Fill out this form to be assigned a group