Applying Board Game Design to Tabletop Display Interfaces

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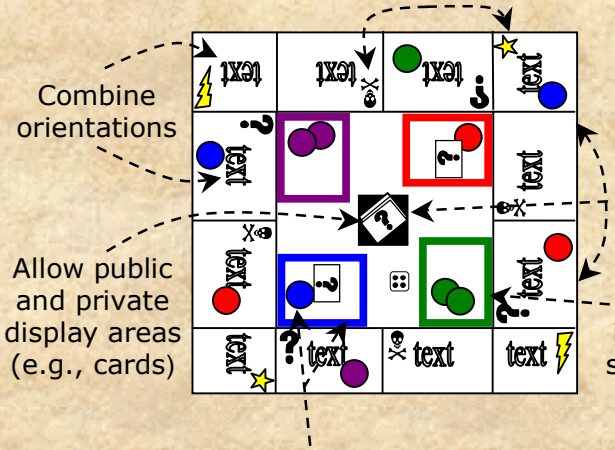
Introduction

- tabletop displays offer ease of collaboration
  - can see facial expressions of partners when face-to-face
- however, there is no preferred viewing orientation
  - some people may view display upside-down
  - shared horizontal display may be difficult to use
- borrow ideas from *board game design*
  - means of improving legibility and overall usability

Design Elements

- many approaches taken by board game designers:

Avoid strongly-oriented objects (use icons, not text)

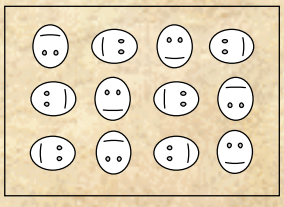


Make objects easily distinguishable
- same colour for related objects
- related objects grouped in demarked area

Preliminary Pilot Study

- began investigation with *combining orientations*
- created simple tasks with paper prototype of a rotating display
- question: how do pairs collaborate when presented with strongly oriented and less-oriented visual displays?
- two tasks: find cities on a map, match photos
  - each task has a concurrent and a serial subtask
- map is strongly oriented, photos in a combination of orientations

closeup of map task



layout of photo task

Results

- people do not like to rotate display unless absolutely necessary
  - prefer using display as presented
  - may read upside down (not easy for all users)
- rotation is more likely when task is *serial*
  - can coordinate rotation to avoid inconveniencing partner

Future Work

- further tests required:
  - select tasks more representative of real-world collaboration
  - explore additional design elements
    - e.g., distinguishability of objects, private displays
  - perform user tests to compare interface designs

Playing Well with Others
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