Design:

Designing Pervasive Games for Mobile Phones

Mobile and Ubiquitous Games

ICS 163

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Content adapted from:

Pervasive Games: Theory and Design

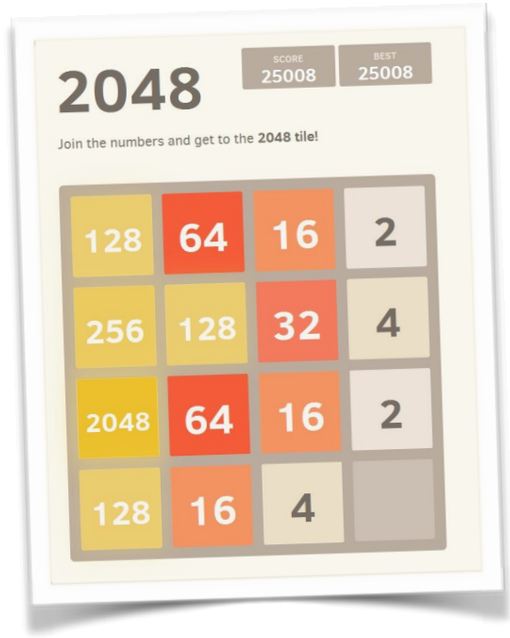
Experiences on the Boundary between Life and Play

Designing Pervasive Games for Mobile Phones

- Personal Communication and Computing
- Pervasive Presence in Mobile Phone Games
- Case Study: Insectopia
- Design Strategies

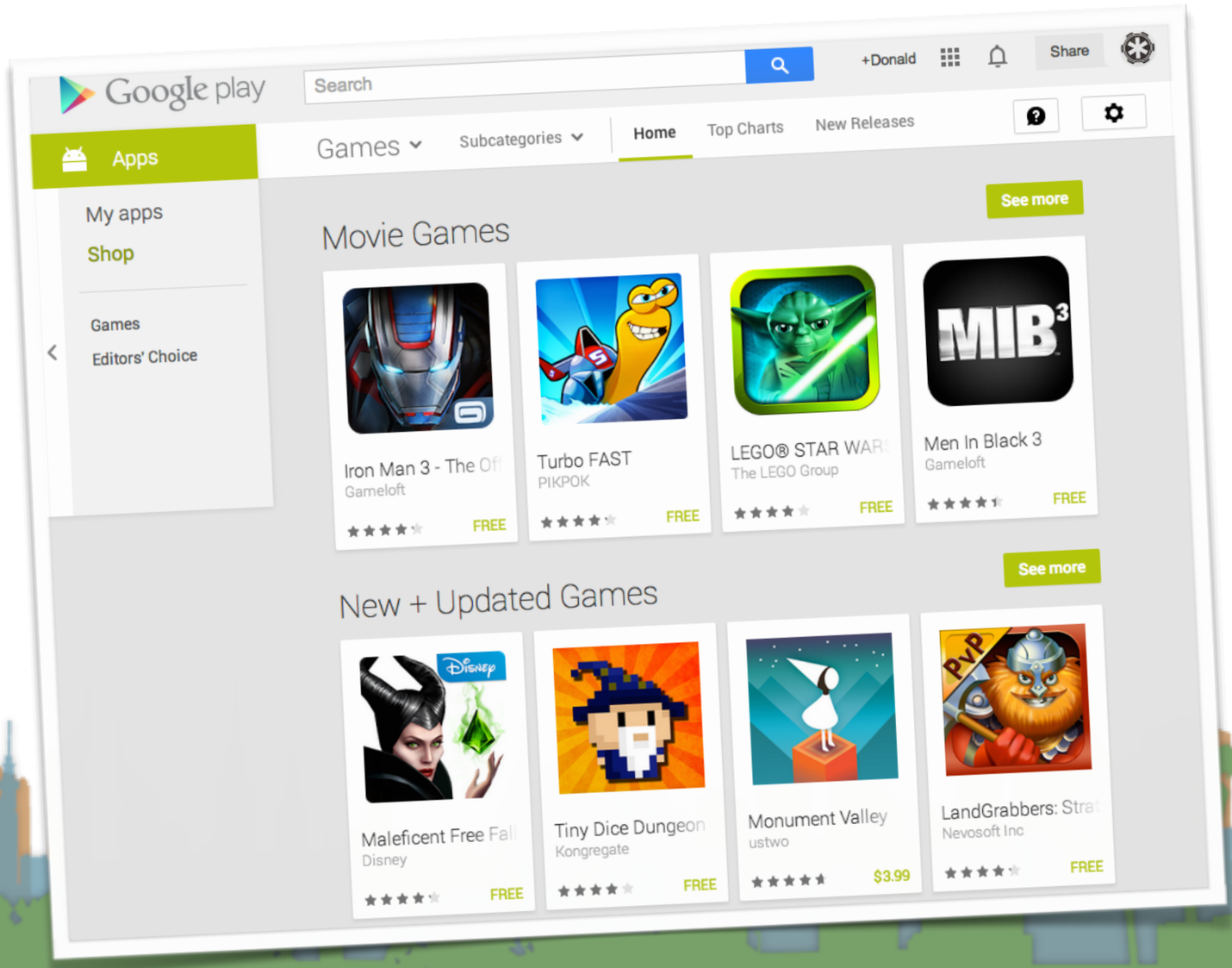
Designing: Personal Communication and Computing

- Mobile phones are the most common gaming device
  - Angry Birds
    - 2 billion installs
    - as big as twitter (monthly engagement)
  - Candy Crush
    - .5 billion installs



Designing: Personal Communication and Computing

- Games on phones
  - Preinstalled games #ftw
  - iTunes Store/ Google Play



Designing: Personal Communication and Computing

- Pervasive games that use mobile phones
  - like technology-supported

- Mobile phone games with pervasive features
  - like technology-sustained
  - this is the focus of this lecture

Designing: Personal Communication and Computing

- Phone are used differently than computers
  - communication is the bottom-line
- Phones are very intimate
  - phones are rarely shared in the U.S.
  - phones are frequently near
    - especially when away from home
- Phones enable people to be reached almost anywhere anytime

Designing: Personal Communication and Computing

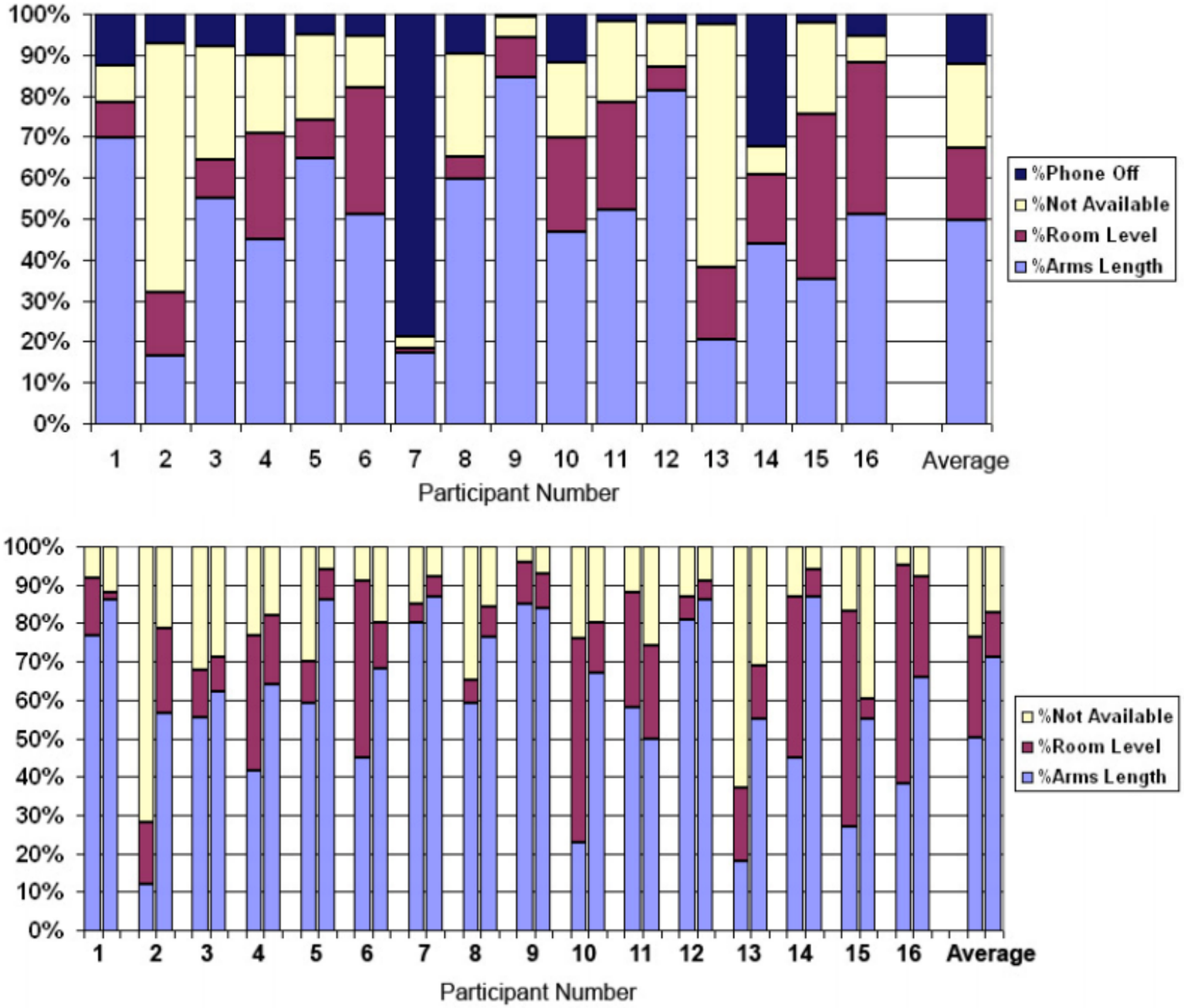
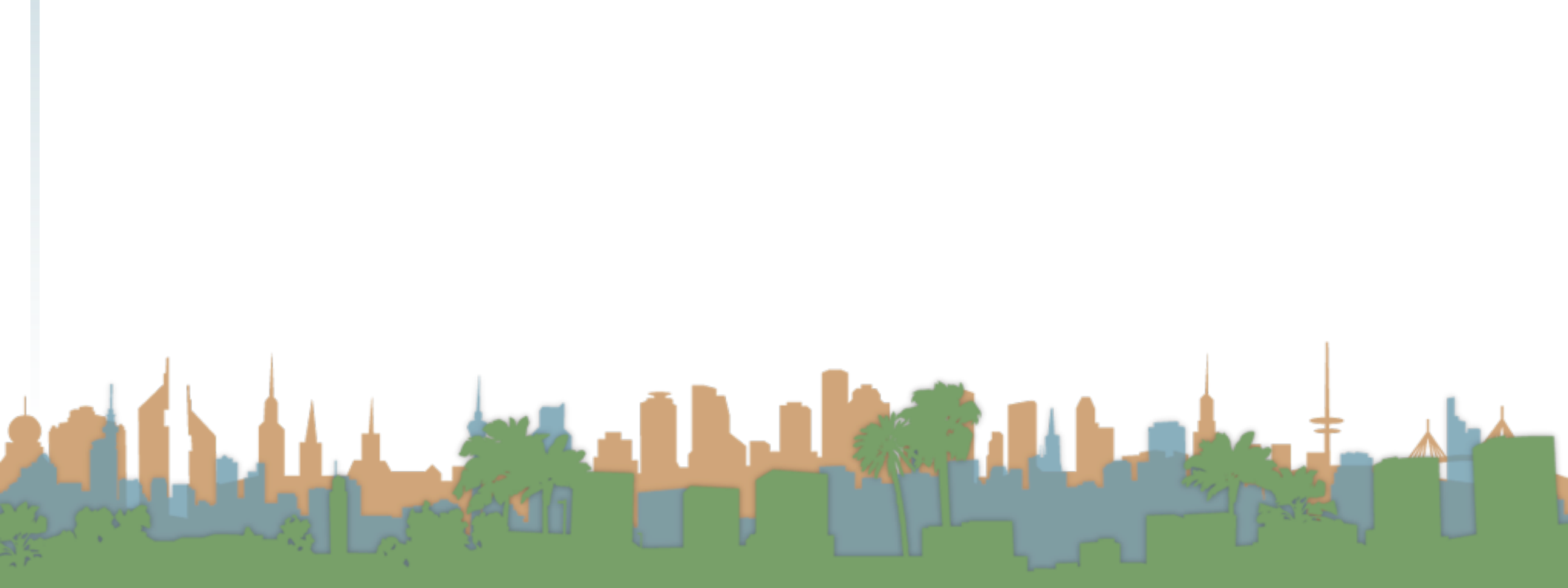


Fig. 2. Individuals varied in proximity levels, but on average people kept their phone within arm's reach half the time (Top). Most users carried the phone close to them at all times when away from home if the phones were turned on (Bottom: Left bar is at home, Right is away).

http://dx.doi.org/10.1007/11853565_8

Designing: Personal Communication and Computing

- Consider the difference between
  - A game that has a chat function
  - A game that sends you text messages



Designing: Personal Communication and Computing

- Phones are computers
  - "tiny" computers
  - form factor matters

Designing: Personal Communication and Computing

- Phone use is different
  - Used in bursts
  - Used while waiting
  - Used in between activities
  - Used in real-life
    - Phones can’t control attention
      - Driving
- Sensors are central
  - Location, cameras, orientation

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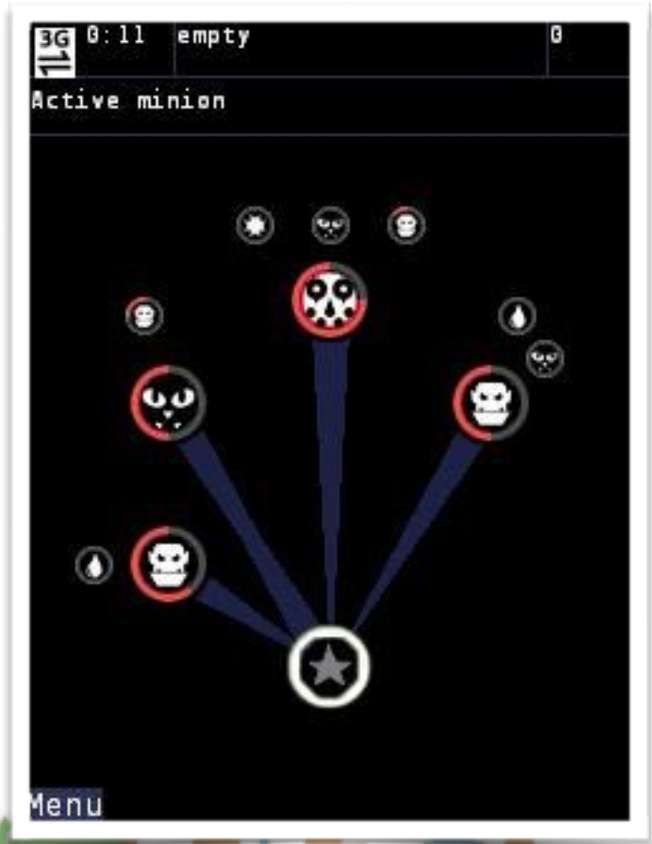
Designing: Pervasive Presence in Mobile Phone Games

- It is more difficult to make a game feel pervasive on a phone
  - It is hard to expand presence in the game outside of the device
  - Integrating the game-world and the ordinary world is hard
- Strategies to do that…..

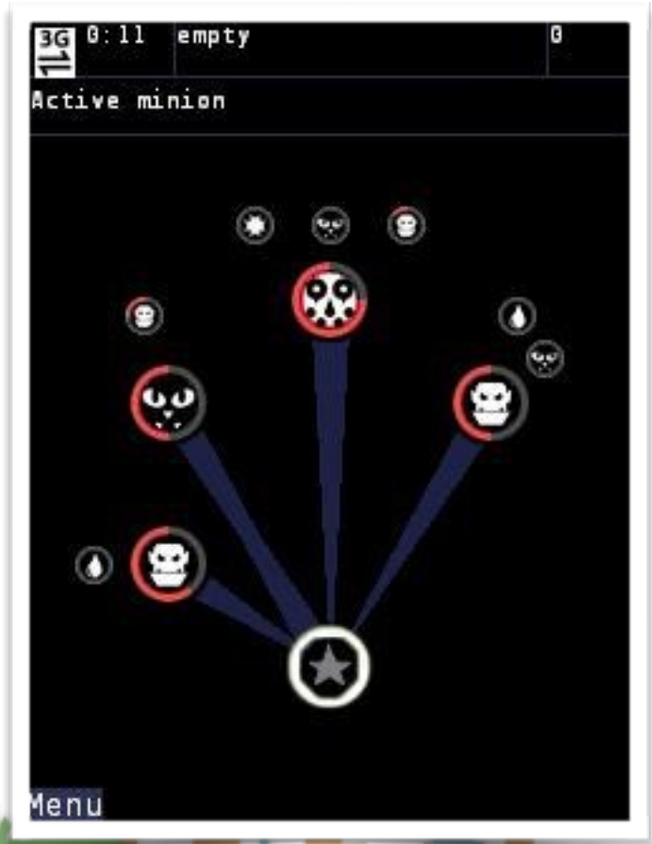
Designing: Pervasive Presence in Mobile Phone Games

- Player identification
  - How do you figure out who is playing a game?
  - How do you understand your role in the game?
  - How do you understand the role of the device?



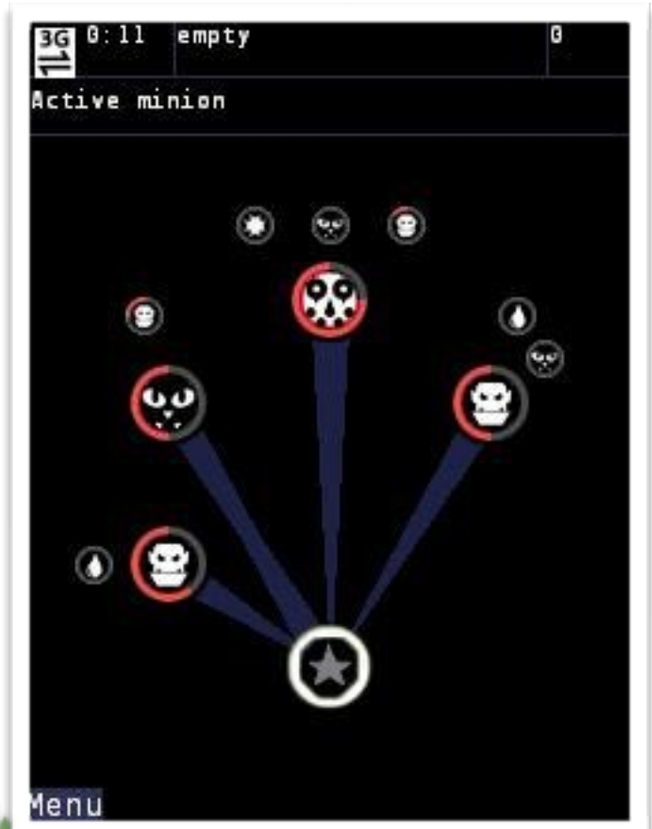
Designing: Pervasive Presence in Mobile Phone Games

- Mythical: The Mobile Awakening
  - You have a magic role-playing character
  - The device makes your character visible
  - Other people have similar characters



Designing: Pervasive Presence in Mobile Phone Games

- Mythical: The Mobile Awakening
  - The phone is a probe into an existing world



Designing: Pervasive Presence in Mobile Phone Games

- Game World Identification
  - How does the game world function?
  - What events matter? What actions matter?
  - What is the narrative? How does that impact you player?

- The design constraints of mobile games make this hard
  - you have 30 seconds to sell it
  - the world has to unfold in short interruptible chunks
  - with partial attention

Designing: Pervasive Presence in Mobile Phone Games

- Game World Identification
  - Making the real-world the game world makes this much easier

QR Anywhere

Designing: Pervasive Presence in Mobile Phone Games

- Player-to-Player Interaction
  - High-scores
  - Leaderboards
  - Casual Communication
  - Tactical Communication
- Highly synchronized multi-player play

Designing: Pervasive Presence in Mobile Phone Games

- Player-to-Player Interaction fostered through
  - Game mechanics
    - Trading resources
    - Joint combat
  - Built-in communication systems
- Joint tasks with no built-in coordination
  - push coordination outside of game
    - SMS
    - email
    - Skype

Designing: Pervasive Presence in Mobile Phone Games

- Communities
  - Doing something together with a shared purpose
  - Critical mass is tough
  - What makes something go viral?
  - Guilds encourage a sense of belonging
    - encourage group play
- Provide indicators of active play
- Show traces of other plays
  - e.g., geocaching

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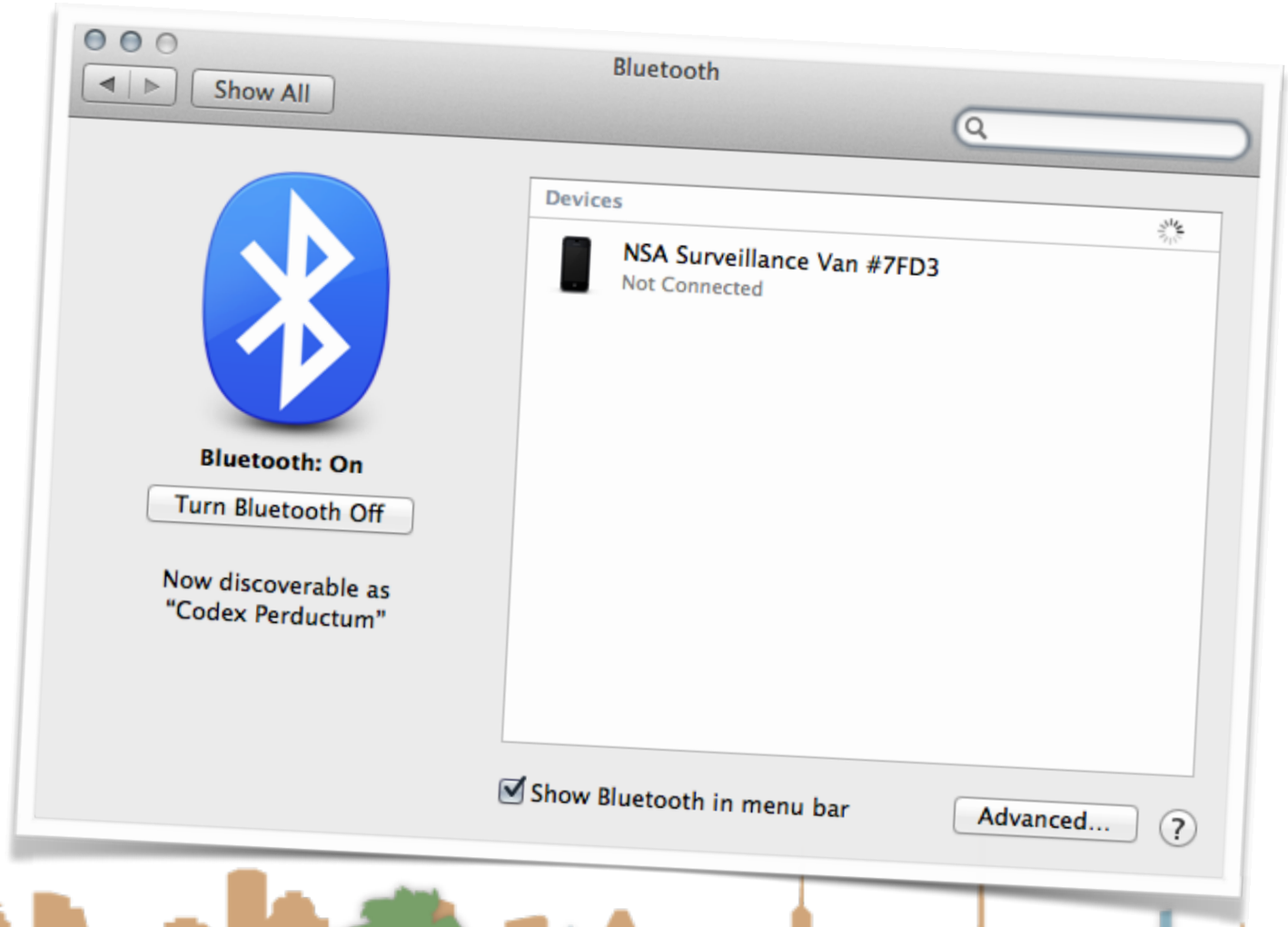
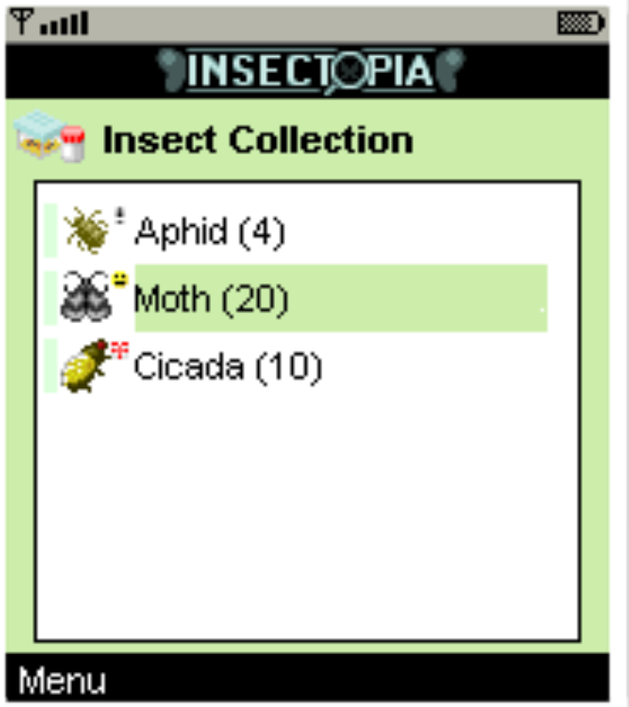
Designing: Insectopia

- Technological Underpinnings
  - The unique MAC Address
    - demo bluetooth
    - demo wifi



Designing: Insectopia

- Game Play
  - Collect insects
  - Recharge insects
  - Leaderboard
  - Team Play
- Pervasive Gaming Elements



Designing Pervasive Games for Mobile Phones

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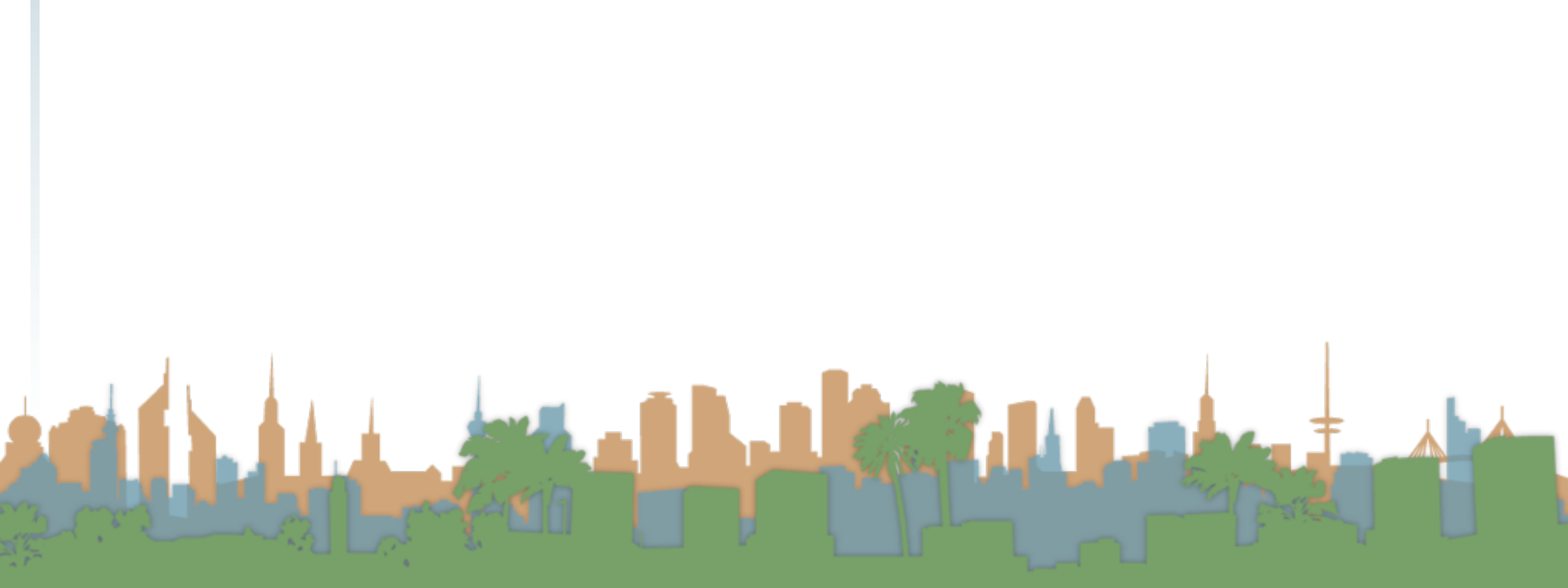
Designing: Design Strategies

- Using the mobile phone as a context sensor
  - The phone can provide
    - Location
    - Orientation
    - Proximity to some things
  - The phone can support players providing their own
    - Pictures
    - Interpretation of location

Designing: Design Strategies

- Using the mobile phone as a context sensor
  - Hybrid
    - QR Codes
    - RFID scanners



Designing: Design Strategies

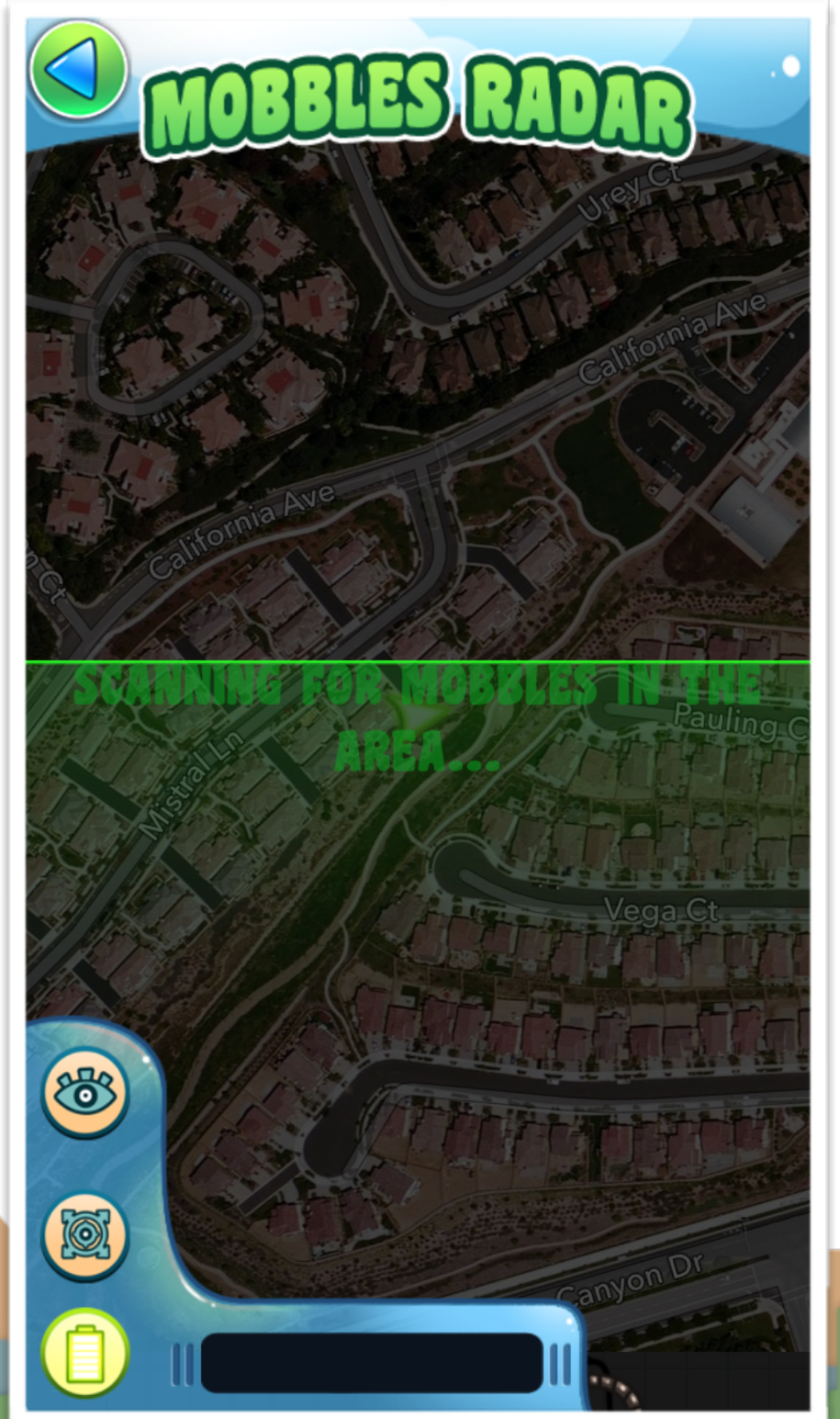
- Context can be used to:
  - Unlock game content
  - Cause a game world to change
  - form the infrastructure of the game
    - Treasure
    - Insectopia

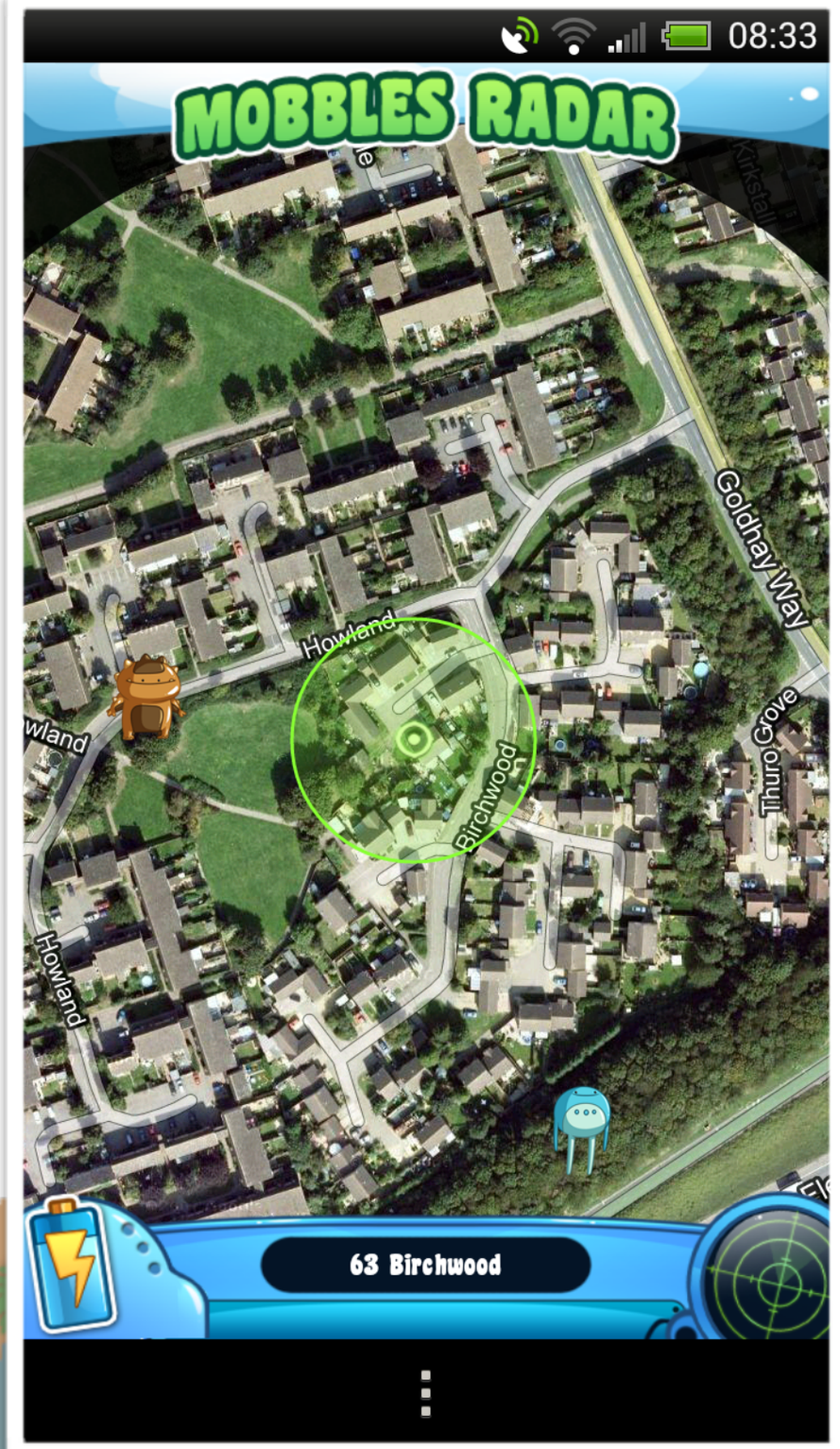
Designing: Design Strategies

- Games of casual exploration
  - Virtual content overlaid on real-world
    - random
      - hard to get right
      - dangerous
    - location-specific
  - Challenge:
    - How do you make the virtual and ordinary world connection meaningful and interesting?

Designing: Design Strategies

- Games of casual exploration





Designing: Design Strategies

- Mirror world games
  - Don’t tend to leave the device
  - e.g., based on Google Earth (demo)

Designing: Design Strategies

- Communication from the game world
  - pushed messages from game to ordinary world
    - email
    - text messages
  - can quickly become spammy
    - What should you communicate?
      - Events that require action
    - Game mechanics might require regular check-ins
      - Tamagotchi

Designing: Design Strategies

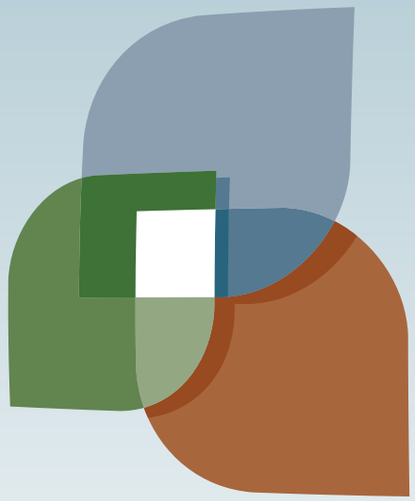
- Viral Invitations
  - Can be built into game structure
  - Rewards for recruiting new players
  - Often seen as getting bonuses for connecting to social

Designing: Design Strategies

- Activity Blending
  - Given the nature of mobile phone usage
  - Design for interspersed activities
    - Turn taking
    - Slow updates
    - Asynchronous Events
  - Automatic responses if player doesn't check in

Summary

- Pervasive mobile phone games are a different genre than games that you simply play on a mobile phone
- Pervasive games integrate into the ordinary world
- Smart phones are pervasive
- Smart phone use is
  - intermittent
  - has social implications
  - interleaved with other activities
- Design strategies must carefully blend game and phone



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