Design:

Pervasive Game Design Strategies

Mobile and Ubiquitous Games
ICS 163
Donald J. Patterson

Content adapted from:
Pervasive Games: Theory and Design
Experiences on the Boundary between Life and Play

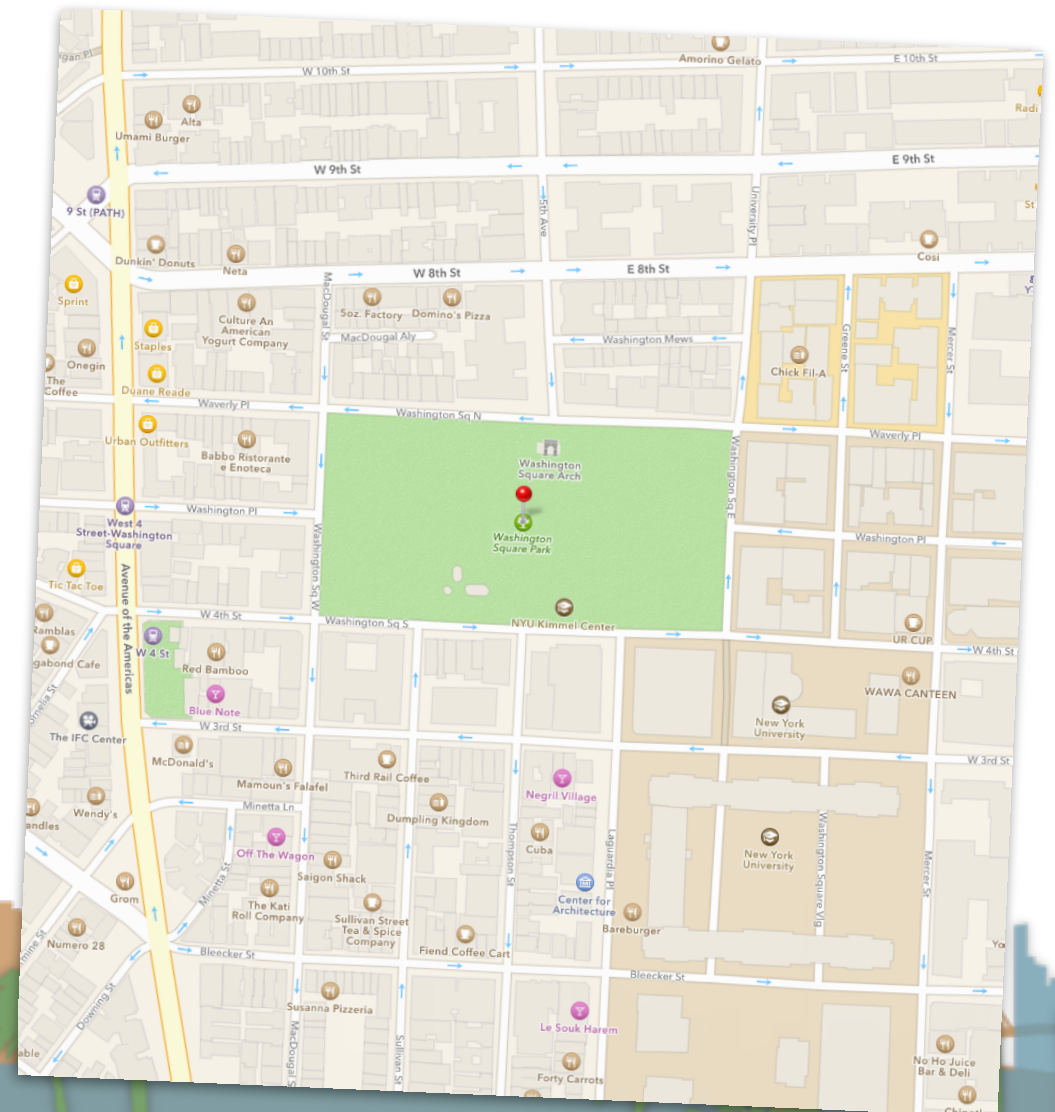# Pervasive Game Design Strategies

- PacManhattan
- Tangible Experience Design
- The Magician's Curtain
- Runtime Game Mastering
- Games Telling Stories
- General Issues of Game Design
- Disruption

Pervasive Game Design Strategies

- **PacManhattan**
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- PacManhattan

  - Created by NYU students in 2004 in a Big Games class

  - Based on a visual pun of seeing similarities between the Pacman board and the streets of New York

Pervasive Game Design Strategies

- PacManhattan

  - Performative play component - spectacle

  - Design goals

    - Multiplayer

    - Fun

    - Human-Scale

    - True to original game play

Pervasive Game Design Strategies

- PacManhattan

    - Original design included custom GPS beacons

        - Abandoned due to complexity

    - Instead each runner had a game master/controller

        - Continually connected by voice phone

   - Controllers manually updated position on a game board in the operations center

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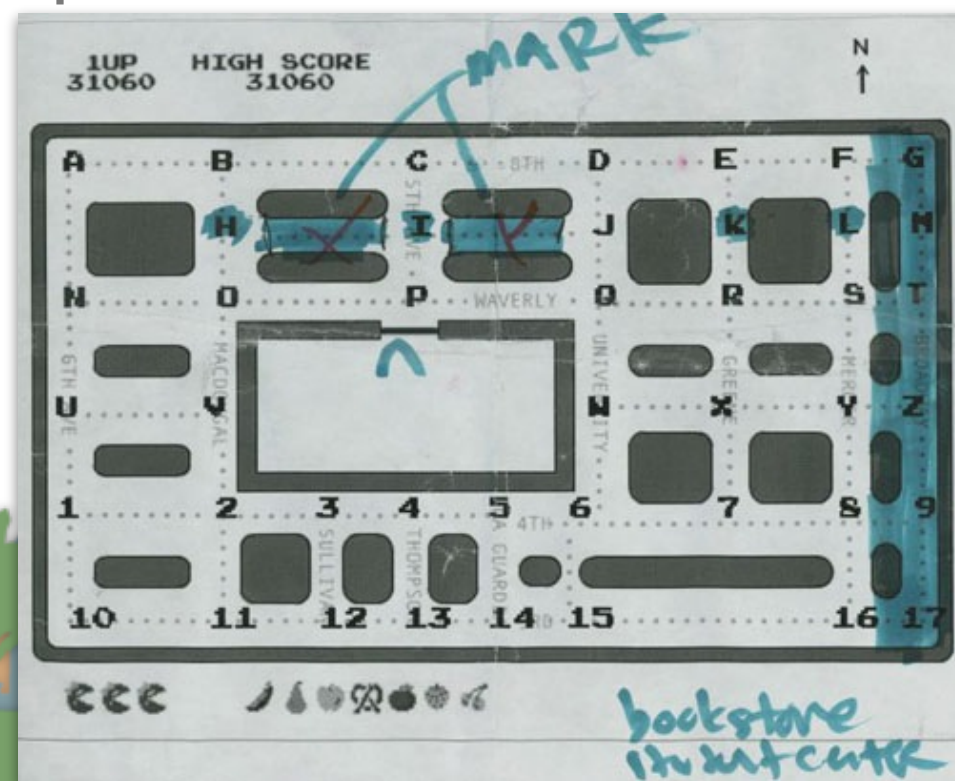
Pervasive Game Design Strategies

- PacManhattan

  - Information asymmetry leveraged in design

    - Pacman can see all data

      - locations, dots

    - Ghosts can not see Pacman data

      - Of course, real world info trumps the game board

  - PowerPills implemented with a ribbon on four lampposts

    - Untying them reverses play for 60 seconds

Pervasive Game Design Strategies

- PacManhattan

  - Result created an unexpected bond between controller and player

  - Game was fun and athletic

  - Did not devolve into just a "stunt"

  - Solitary game became social

  - Social expansion was clearly present

  - Traffic made the game somewhat dangerous

  - Recreated around the world

- PacManhattan vs Human Pac Man

- PacManhattan vs Human Pac Man

Pervasive Game Design Strategies

- Things to consider when designing a pervasive game

    - Holistic approach

    - Each decision impacts other aspects of the game

    - Some decisions may be in conflict with others

    - Normative: Things you should do

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Pervasive Game Design Strategies

- Tangible Experience Design
    - Pervasive games should be focussed on tangible experiences
        - Exciting real-world tasks that provide feelings of achievement
        - Lend themselves to recounting after the fact

- Setting and Surpassing Expectations

  - Establish expectations in game play

    - Then exceed them

  - Escalate previous experiences

    - "Find the clue inside the rat"

  - Use unexpected twists

    - Change the game dynamic

  - Use far-out game play

  - Players may respond in kind

Pervasive Game Design Strategies

- Linked Tasks

  - You must complete Task A before beginning Task B

  - Adds meaning to tasks

    - simple tasks that are chained make more sense

    - "finding a location via a puzzle, then going there"

  - Linked tasks can form the entire game structure

    - Scavenger Hunts

  - Force collaboration through interdependence

    - "Disruption"

Pervasive Game Design Strategies

- Real Challenges
  - Breaking historically accurate codes
  - Climbing actual structures
  - Do not need to be difficult if they are meaningful
    - "fixing a printer jam"
  - Know your players well
  - Provide hints
  - Foster teamwork and networking

Pervasive Game Design Strategies

- 360 Illusion

  - "Indexical Environment": A perfect representation of the game world from real world environments.

    - This is an ideal
    - Acting in the game world and real world is the same

  - Integrate into the environment

  - Establish a clear level of indexicality

  - Choose thematics wisely

  - Encourage collective make-believe

Pervasive Game Design Strategies
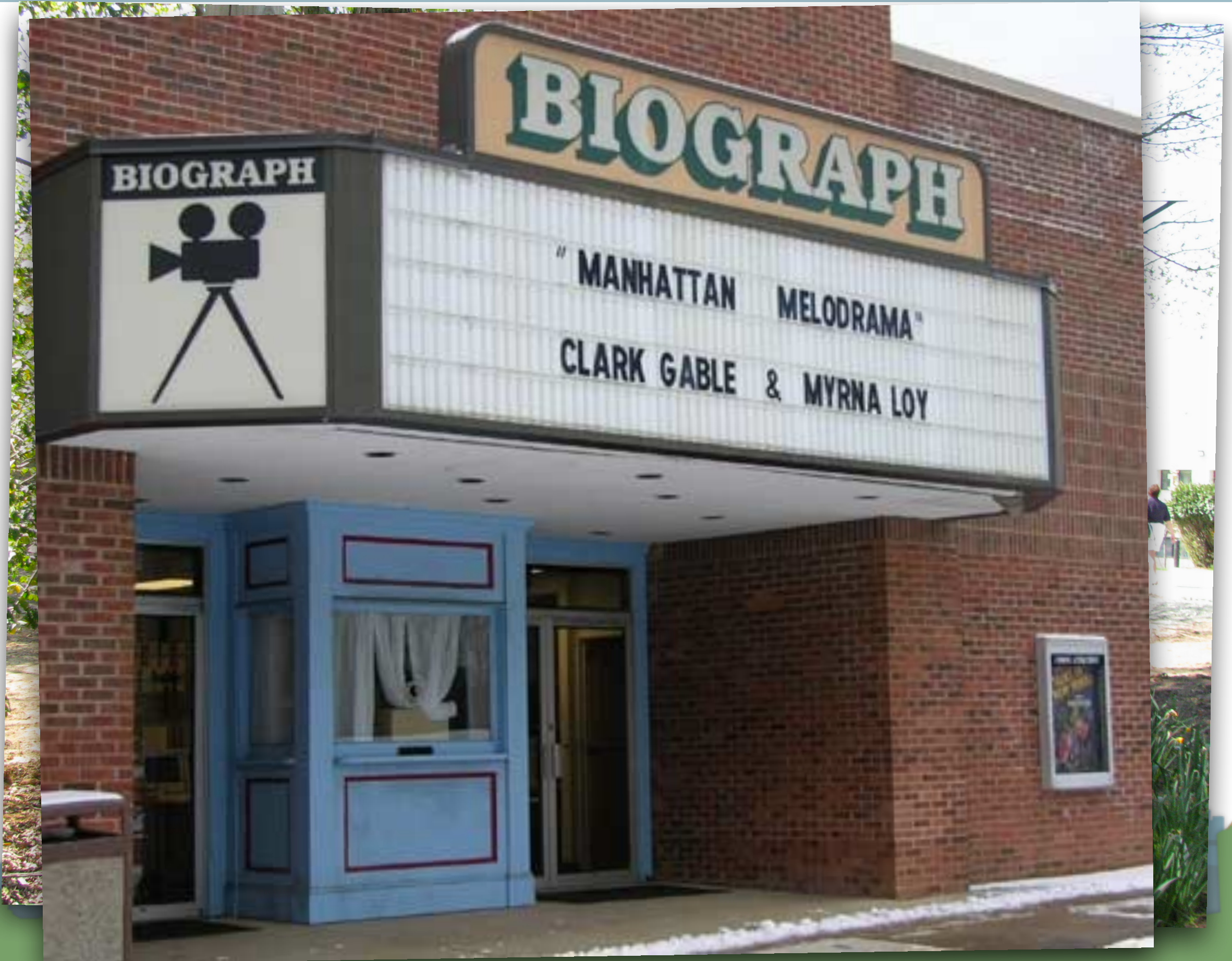
- National Training Center, Fort Irwin, CA

    - 15 towns

    - 350 Non-Player characters

    - Combat training before going to Afghanistan

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EdibileGeographies

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Pervasive Game Design Strategies

- The Magician's Curtain

  - Goal: The illusion of a coherent game world

  - Player's must play along and not

    - "look behind the curtain"

    - hacking the game is always possible

  - "This is not a game" (TINAG) aesthetic

    - Used in Alternate reality games

    - A design approach that denies "gameness"

    - A player's stance that helps to reinforce the curtain

Pervasive Game Design Strategies

- The Magician's Curtain
  - Seamless Life/Game Merger
    - Extreme form of magician's curtain
    - The boundaries of the game world are unclear
    - Real world is used as part of the game
      - "The Game"
      - Placing game ads in real places
    - Interaction with outsiders is required
    - Player's can't leave the game
    - Careful use of ludic markers

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Pervasive Game Design Strategies

- Runtime Game Mastering

  - Being in charge of a game while it's running

  - Most games are not automatic

    - Too difficult to predict all player actions

    - Responding to player actions requires finesse

  - Jobs:

    - monitor game progress

    - influence the state of the game

    - decide how to respond

Pervasive Game Design Strategies

- A Game Master in a pervasive game:

  - might have to be multiple people (temporal expansion)

    - requires communication

    - shifts

    - information pass-down strategy

Pervasive Game Design Strategies

- Gods and Power Users

  - God Mode

    - Game Master has no role in the game

    - Access to all information

    - Invisible to players

  - Power User Mode

    - Game Master has a character in the game

      - with special abilities, diegetic roles

  - Hybrid

    - Switching between the two modes

Vourteque   LadyRyu

- Active Game Management

  - New content created on the fly

  - Sustains a responsive game world

  - Dynamic difficulty levels

  - Steer the game

  - Human backup in the case of technology failure

Pervasive Game Design Strategies

- Keeping track of the game
  - Technology is tempting and helpful
    - Surveillance
      - Cameras, sensors, microphones
    - Log files
  - Humans can interpret
    - Controllers/ Moles
  - Self-reporting
  - Monitoring online forums

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Pervasive Game Design Strategies

- Games Telling Stories
  - Games of Progression vs Games of Emergence
    - Games of Progression have a strong narrative
      - This motives the players
      - It is the reward
      - Not as interesting the second time
    - Games of Emergence have a rich rule base
      - That cause multiple plays to be fun
  - Which kind of game is PacManhattan?

Pervasive Game Design Strategies

- Replayable Games of Progression

  - Create different points of view

    - Play the game as one team then a different team

  - Foster social play

    - The story is important but the interaction between people is what is fun

  - Include way too much content

    - So multiple replays still offer new discoveries

Pervasive Game Design Strategies

- Games Telling Stories

  - Distributed Narrative

    - Small story fragments

    - Different teams have to piece them together

  - Make the story matter

  - Connect with traditional media

  - Clues are not necessary

    - Collective action thwarts story design sometimes

  - Think outside the box

Pervasive Game Design Strategies

- Games Telling Stories
  - Collective Story
    - There are two stories
      - The designed narrative
      - The story of how the game unfolded
        - The collective story
        - Design for this as well
          - debrief sessions
          - photo albums
          - post-game websites

- Games Telling Stories

  - First Person Story

    - A game that focusses on one person

  - To make it work

    - Appeal to the narcissism of the player

    - minimize role-playing

    - Personalize the story

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Pervasive Game Design Strategies

- General Issues

  - Sustaining Critical Mass

    - Limit the time and space of play

    - Reward extensive play (e.g., staying online)

    - Provide single-player content

      - (e.g., maintenance work, resource allocation)

    - Provide two-player content

    - Conceal the lack of critical mass

      - If players don't know the mass isn't there yet, they won't abandon the game as fast

- General Issues

  - Pacing the Game

    - Test and iterate

    - Allow for variable pacing

    - Make it foolproof

      - Don't let one player's delay ruin the game

    - Prepare for dedicated players

Alarzy

- General Issues
  - Business Model
    - How this thing is funded has a big impact on the design
  - Dragonbane
    - 1 million euro

Dragonbane

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Pervasive Game Design Strategies

- Disruption

  - Goal

    - to physically demonstrate the threat of decentralized action, inspired by Maneki-Neko, Distraction

  - Players: Brea-Olinda High School students

    - Split into four teams

  - Time frame

    - 2 hours

  - Technology

    - text messages, GPS, paper

Take an envelope from Prof. Patterson's mail box and write a large "A" on it . Put a copy of "Software Engineering Notes" in it. (1:2)

Go

Go to the 5th floor mailroom (1:1)

DZ

Find the words "Drop Zone" on the ground. (2:2)

Go to Location (33.643324 -117.842282) (2:1)

Wait there and listen for someone singing "You are my sunshine" (2:3)

Start

Go to Donald Bren Hall Room 5084 (3:1)

Catch the envelope labeled "A" when the singers throw it to you (2:4)

Go to Location Donald Bren Hall Room 4084 (4:1)

Obtain an envelope marked "C" (3:2)

Find and take an envelope marked "D" (4:2)

Proceed to (33.644271 -117.841201) (2:5)

TP2

Travel to (33.644633 -117.840651) Find the "Go Study Abroad" Bulletin Board (3:3)

Form a single file line and march in a large circle around
that GPS point (2:6)

Travel to (33.642531 -117.839763) (4:3)

BBUH

Pervasive Game Design Strategies

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Go to the sixth floor outdoor patio.(1:5)

Find the words "Launch Pad" on the ground. Stand on them. Do not climb on the ledge. Do not try and look over the ledge. (1:6)

Go to the 5th floor mailroom (1:1)

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Find the words "Drop Zone" on the ground. (2:2)

As loud as you can, sing "You are my Sunshine" (1:7)

Go to Location (33.643324 -117.842282) (2:1)

Wait there and listen for someone singing "You are my sunshine" (2:3)

Start

Go to Donald Bren Hall Room 5084 (3:1)

Drop the Envelope over the edge of the building closest to you. Do NOT try and look over the edge (too dangerous) (1:8)

Go to the fifth floor mailroom (1:9)

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Travel to (33.642531 -117.839763) (4:3)

BBUH

Post Envelope "C" on the bulletin board

Wait there and listen for someone singing "You are my sunshine" (2:3)

Drop the Envelope over the edge of the building closest to you. Do NOT try and look over the edge (too dangerous) (1:8)

Go to the fifth floor mailroom (1:9)

Catch the envelope labeled "A" when the singers throw it to you (2:4)

Take an envelope from Prof. Patterson's mail box and write a large "B" on it. Put a copy of "Software Engineering Notes" in it.(1:10)

Find and take an envelope marked "D" (4:2)

Proceed to (33.644271 -117.841201) (2:5)

TP2

Wait for the printer to print a piece of paper with four pictures on one side and "B" on the other. (1:11)

Form a single file line and march in a large circle around that GPS point (2:6)

Travel to (33.642531 -117.839763) (4:3)

BBUH

organizer: Print "B"

ntil someone Immediately and run to the 3.642531 (2:7)

BBUH

Post envelope "D" on wood post next to the bulletin board located next to that GPS point. (4:4)

Cut the four pictures apart and place in the envelope. Seal the envelope. (1:12)

Go to (33.643492 -117.84050) (1:13)

TP1

ake an marked :8)

Travel to (33.643492 -117.84050) (4:5)

TP1

Lie on the ground in a star shape. (1:14)

envelope marked "D" (4:2)

Proceed to (33.644271 -117.841201) (2:5)

TP2

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Travel to (33.642531 -117.839763) (4:3)

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Travel to (33.643492 -117.84050) (4:5)

TP1

Lie on the ground in a star shape. (1:14)

Continue lying on the ground until your hear someone sing "Twinkle Twinkle Little Star" (1:15)

ring envelope "D" back to home base and tape the ntents to the white board in he indicated manner (2:9)

Look for a human star and sing "Twinkle Twinkle Little Star" to them. (4:6)

End

Bring envelope "C" back to home base and tape the contents to the white board in the indicated manner (1:18)

Find and take an envelope marked "C" (1:17)

When you hear that song, scream, leave envelope "B" behind on the ground and run to the "Go Study Abroad" Bulletin Board at (33.644633 -117.840651) (1:16)

n to Home se (3:11)

Pervasive Game Design Strategies

Start

Wait there and listen for someone singing "You are my sunshine" (2:3)

Go to Donald Bren Hall Room 5084 (3:1)

Go to Location Donald Bren Hall Room 4084 (4:1)

Catch the envelope labeled "A" when the singers throw it to you (2:4)

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BBUH

Form a single file line and march in a large circle around that GPS point (2:6)

Post Envelope "C" on the bulletin board located there (3:4)

Continue marching until someone pretends to shoot you. Immediately drop your envelope "A" and run to the bulletin board at (33.642531 -117.839763) (2:7)

BBUH

Post envelope wood post ne bulletin board next to that GF (4:4)

Travel to (33.644271 -117.841201), Look for a line of soldiers and attack them with finger guns loudly shouting "bang" (3:5)

TP2

Find and take an envelope marked "D" (2:8)

Trave -117

Take envelope "A" (3:6)

Pervasive Game Design Strategies

Take envelope "A" (3:6)

Bring envelope "D" back to home base and tape the contents to the white board in the indicated manner (2:9)

Look for a human star and sing "Twinkle Twinkle Little Star" to them. (4:6)

Go to the Bren Hall sixth floor outdoor patio. (3:7)

Bring envelope "C" back to home base and tape the contents to the white board in the indicated manner (1:18)

Fin
env

End

Find the words "Launch Pad" on the ground. Stand on them. Do not climb on the ledge. Do not try and look over the ledge(3:8)

Return to Home Base (3:11)

Pick up envelope "B" (4

Drop the Envelope over the edge of the building closest to you. Do NOT try and look over the edge (too dangerous) (3:10)

Bring envelopes "A" and "B" back to home base and tape the contents to the white board in the indicated manner. (4:12)

Proceed to (33.643324 -117.842282) (4:8)   **DZ**

As loud as you can, sing "You are my sunshine" (3:9)

Catch an envelope labeled "A" from the singers (4:11)

Find the words "Drop Zone" on the ground. (4:9)

Wait and listen for someone to sing "You are my sunshine" (4:10)

Start

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Go to Donald Bren Hall Room 5084 (3:1)

Wait there and listen for someone singing "You are my sunshine" (2:3)

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Travel to (33.643492 -117.84050) (4:5)

TP1

Take envelope "A" (3:6)

BBUH ☐

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...be... ...th...

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Go to the fifth floor mailroom (1:9)

Obtain an envelope marked "C" (3:2)

Catch the envelope labeled "A" when the singers throw it to you (2:4)

Take an envelope from Prof. Patterson's mail box and write a large "B" on it. Put a copy of "Software Engineering Notes" in it.(1:10)

Find and take an envelope marked "D" (4:2)

Proceed to (33.644271 -117.841201) (2:5)

TP2

Wait for the printer to print a piece of paper with four pictures on one side and "B" on the other. (1:11)

Travel to (33.644633 -117.840651) Find the "Go Study Abroad" Bulletin Board (3:3)

organizer: Print "B"

Form a single file line and march in a large circle around that GPS point (2:6)

Travel to (33.642531 -117.839763) (4:3)

BBUH

Cut the four pictures apart and place in the envelope. Seal the envelope. (1:12)

Post Envelope "C" on the bulletin board located there (3:4)

Continue marching until someone pretends to shoot you. Immediately drop your envelope "A" and run to the bulletin board at (33.642531 -117.839763) (2:7)

BBUH

Post envelope "D" on wood post next to the bulletin board located next to that GPS point. (4:4)

Go to (33.643492 -117.84050) (1:13)

TP1

Travel to (33.644271 -117.841201), Look for a line of soldiers and attack them with finger guns loudly shouting "bang" (3:5)

TP2

Find and take an envelope marked "D" (2:8)

Travel to (33.643492 -117.84050) (4:5)

TP1

Lie on the ground in a star shape. (1:14)

Take envelope "A" (3:6)

Bring envelope "D" back to home base and tape the contents to the white board in the indicated manner (2:9)

Look for a human star and sing "Twinkle Twinkle Little Star" to them. (4:6)

Continue lying on the ground until your hear someone sing "Twinkle Twinkle Little Star" (1:15)

Go to the Bren Hall sixth floor outdoor patio. (3:7)

When you hear that song, scream, leave envelope "B" behind on the ground and run to the "Go Study Abroad" Bulletin Board at (33.644633 -117.840651) (1:16)

Bring envelope "C" back to home base and tape the contents to the white board in the indicated manner (1:18)

Find and take an envelope marked "C" (1:17)

Find the words "Launch Pad" on the ground. Stand on them. Do not climb on the ledge. Do not try and look over the ledge(3:8)

End

Return to Home Base (3:11)

Pick up envelope "B" (4:7)

Drop the Envelope over the edge of the building closest to you. Do NOT try and look over the edge (too dangerous) (3:10)

Bring envelopes "A" and "B" back to home base and tape the contents to the white board in the indicated manner. (4:12)

As loud as you can, sing "You are my sunshine" (3:9)

Catch an envelope labeled "A" from the singers (4:11)

Proceed to (33.643324 -117.842282) (4:8)

DZ

Find the words "Drop Zone" on the ground. (4:9)

Wait and listen for someone to sing "You are my sunshine" (4:10)
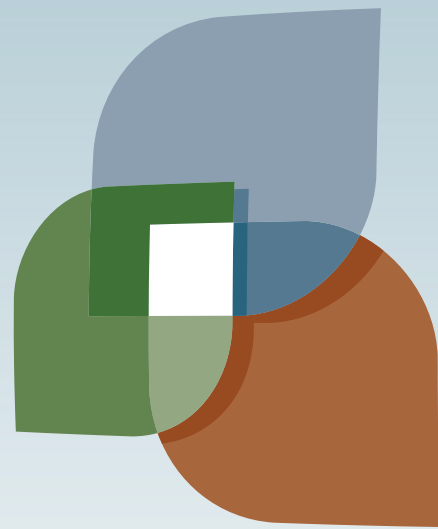
Pervasive Game Design Strategies

- Disruption

  - Game Design

    - Training in GPS the day before

    - Hint sheets for locations pre-made

    - Control room watching movements

    - Team play

  - A little social expansion

  - Not much temporal expansion

  - Heavy focus on linked mysterious tasks