Foundations of Interactive Game Design (80K)

Final review lecture
Quiz #5

10 minutes, use both sides of paper if needed, closed book, no notes, no collaboration, etc
Take Ken’s final survey

http://people.ucsc.edu/~khullett/
Final review
Games are technology

- Physical hardware: consoles (Xbox, Wii, PS3), handhelds (DS, PSP), PCs, arcade cabinets, guitar controllers, etc
- Software engines: Unreal, Source, CryEngine, Flash’s renderer, etc
- Middleware and other components: AI, physics, world management, etc
- Authoring systems: Aurora, Flash, Excel, etc
Games are formal systems

- Game rules: just like card & board games, RPGs, war games, and playground games
- World rules: traditional hide-and-seek gets doors, lighting, gravity (etc) “for free” from the physical world — games have to (and get to) define their own world rules
- Game definitions are based on logical structure
Games are meaningful media

- Games have text, image, sound: metamedium
- Books, albums, and movies are fixed presentations — games are *media machines*
- Games can tell stories, make arguments, do other things media do — traditionally or procedurally
- Tools from other media useful, but need more
Games are social experiences

• We play with other physically present people (Wii, LAN parties, Rock Band)

• We play with other virtually present people (MMOs, Second Life, Xbox achievements)

• Our experiences of games are deeply shaped by our participation in online and offline game cultures
Meaningful play

• A key concept for Salen and Zimmerman
• Related to other concepts we’ll discuss: “agency” (Murray) and “intention” (Church)
• A central issue for game design
Meaningful play in a game emerges from the relationship between player action and system outcome; it is the process by which a player takes action within the designed system of a game and the system responds to the action. The meaning of an action in a game resides in the relationship between action and outcome. — Salen & Zimmerman
Evaluative definition

*Meaningful play* occurs when the relationships between actions and outcomes in a game are both *discernable* and *integrated* into the larger context of the game. Creating meaningful play is the goal of successful game design. — Salen & Zimmerman
Discernability

• “Discernable means that the result of the game action is communicated to the player in a perceivable way.”

• If you shoot something and it has no response, that should be a discernable way of communicating you can’t shoot it (e.g., portal-resistant surfaces in *Portal*).

• Boss battles are often about discernability. What other parts of games focus on it?
Integration

• Integration “means that an action a player takes not only has immediate significance in the game, but also affects the play experience at a later point in the game.”

• We don’t move a piece just to see it move (discernability) but to work toward winning or another future state (integration)

• Makes strategy and intentional play possible. What else does integration enable?
Combat

Playfield: low rez

Missle: high rez

Sprite: high rez

Entire game on one screen

Only other element is Pong-style ball
How is this possible?
Atari VCS

• No frame buffer
• Key component: the Television Interface Adapter ("Stella")
• Drawing line-by-line, calculating in horizontal/vertical blanks
• How to create Pitfall!?
Defining “game”

A “system in which players engage in an artificial conflict, defined by rules, that results in a quantifiable outcome”
— Katie Salen and Eric Zimmerman
What are rules?

- Limit what can be done (Salen & Zimmerman)
- Specify opportunities for doing things (Juul)
- For Juul, include both gameplay rules and gameworld rules
- In essence, the structure
Rules on three levels

- Operational: The “rules of play” of a game. Surface visible rules
- Constitutive: Underlying formal structures “below the surface” of the rules presented to players. Logical and mathematical
- Implicit Rules: Unwritten, implied, rules for a game. Etiquette, good sportsmanship, access to play space, etc.
Emergence & progression

- *Spacewar!* versus *Adventure*
- Rules of thumb versus walkthroughs
- *Grow* looks like emergence, but there’s no simulation — it’s progression
- Of course, most computer games include both — in a specific combination and balance (e.g., *Grand Theft Auto* series)
Gameplay

• A result of the rules and player effort

• Small rule changes can significantly change gameplay (emergence)

• Player competence / repertoire determines what they can do

• Juul says “game design is about designing the rules so that actual strategies used by the players are enjoyable to execute.” p. 91
Second-order design

• A game designer designs the rules of the system directly

• The player experience is then designed indirectly through this process

• Understanding systems as producers of experiences is a great challenge

• Emergence is an important example
Mihaly Csikszentmihalyi’s description of the pleasure (and problems) in challenges
Flow’s characteristics

First, the experience usually occurs when we confront tasks we have a chance of completing.

Second, we must be able to concentrate on what we are doing.

Third and fourth, the concentration is usually possible because the task undertaken has clear goals and provides immediate feedback.

Fifth, one acts with a deep but effortless involvement...

Sixth, enjoyable experiences allow people to exercise a sense of control over their actions.

Seventh, concern for the self disappears, yet... the sense of self emerges stronger...

Finally, the sense of the duration of time is altered...
Designing for pleasure

- The progression of skill and challenge that is a prerequisite for flow
- The “same but different” variations on a core mechanic that draw people in
- The preconscious entrained rhythms we learn for platform jumping, combat combos, vehicle cornering, etc
Taylor

- “My hope is to show that the very notion of being able to bound off what is game and not game is not a particularly fruitful way of understanding these spaces — either as games or via their status as a cultural space”

- “[T]his book tries to understand the ways not only the artifact of the game, but the production of play within it, are multiply constituted by a variety of actors located in particular social contexts”
Taylor’s intervention

• Online life is not a bounded-off zone of experimentation,
• nor simply a place to work out offline issues.
• The game “itself” is as social as it is a technological artifact or set of rules
EverQuest as social space

- Some things built in: “/y” and the necessity of grouping
- Some emerging social norms: shouting “train” and not griefing
- Some things change: introducing the raid tool and changing how porting works
Bartle’s player typology

• Achievers, explorers, socialisers and killers

• Memory device: “achievers are Diamonds (they're always seeking treasure); explorers are Spades (they dig around for information); socialisers are Hearts (they empathise with other players); killers are Clubs (they hit people with them).”
ACTING

Killers

Achievers

PLAYERS

Socialisers

WORLD

Explorers

INTERACTING
Of course, players aren’t just one thing.

Nick Yee’s model of player motivations

<table>
<thead>
<tr>
<th>Achievement</th>
<th>Social</th>
<th>Immersion</th>
</tr>
</thead>
<tbody>
<tr>
<td>Advancement</td>
<td>Socializing</td>
<td>Discovery</td>
</tr>
<tr>
<td>Progress, Power,</td>
<td>Casual Chat, Helping</td>
<td>Exploration, Lore,</td>
</tr>
<tr>
<td>Accumulation, Status</td>
<td>Others, Making Friends</td>
<td>Finding Hidden Things</td>
</tr>
<tr>
<td>Mechanics</td>
<td>Relationship</td>
<td>Role-Playing</td>
</tr>
<tr>
<td>Numbers, Optimization</td>
<td>Personal, Self-Disclosure,</td>
<td>Story Line, Character</td>
</tr>
<tr>
<td>Tempting, Analysis</td>
<td>Find and Give Support</td>
<td>History, Roles, Fantasy</td>
</tr>
<tr>
<td>Competition</td>
<td>Teamwork</td>
<td>Customization</td>
</tr>
<tr>
<td>Challenging Others,</td>
<td>Collaboration, Groups,</td>
<td>Appearances, Accessories,</td>
</tr>
<tr>
<td>Provocation, Domination</td>
<td>Group Achievements</td>
<td>Style, Color Schemes</td>
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<tr>
<td></td>
<td></td>
<td>Escapism</td>
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<tr>
<td></td>
<td></td>
<td>Relax, Escape from RL,</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Avoid RL Problems</td>
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</tbody>
</table>
Taylor on women

- Women underrepresented in game development, play, and consumption
- “Pink games” — playing stereotypes of female activities — only answer the last
- Women’s attention to social process in MMOs may code as “feminine” — but it’s also a way to be powerful active agents
Making gender-inclusive games

Perform studies of your target audience
   Do not assume you already know this audience
   Correct skill set for this work is a sociology or anthropology background

Test final game with target audience
   Must build time into your schedule for this
Gender-Inclusive Game Design

- Do not alienate your audience
  - “Hyper-sexualization” of women

- Design with the expanded audience in mind
  - Multiple ways of solving a problem
  - Engaging story to make play worthwhile
  - Options for both direct and indirect conflict
Transformative play

• While S&Z see play as free movement within a more rigid system, play is also more — which they call “transformative”

• Play can change the structure — slang becomes part of the language, new strategies motivate new game rules, etc

• Play can use the structure to other ends: machinima, game art, etc

• And play changes players...
## Caillois’s play matrix

<table>
<thead>
<tr>
<th></th>
<th>Paida</th>
<th>Ludus</th>
</tr>
</thead>
<tbody>
<tr>
<td>Agôn (competition)</td>
<td>Unregulated athletics</td>
<td>Boxing, Chess, <em>Starcraft</em></td>
</tr>
<tr>
<td>Alea (chance)</td>
<td>Counting-out rhymes</td>
<td>Betting, lotteries</td>
</tr>
<tr>
<td>Mimicry (simulation)</td>
<td>Masks, disguises</td>
<td>Theatre, ritual</td>
</tr>
<tr>
<td>Ilinx (vertigo)</td>
<td>Horseback, waltzing</td>
<td>Skiing, tightrope walking</td>
</tr>
</tbody>
</table>
Pilgrim in the Microworld

• A detailed account of learning to play, and learning about, a particular game.

• Learning in the mind, learning in the body, learning as an embodied thinker and player.

• Planning is a reality, but certainly not the only thing happening.

• It tells a story...
Key ideas for us

• Pleasures (and learning) of play
• Hand — gaze — anticipation: elements of play and experiences to design
• Core mechanics and variation
• Improvisation, rather than just planning
• Another way to think about “flow”
Procedural Rhetoric

- “Procedurality refers to a way of creating, explaining, or understanding processes.”

- “Rhetoric refers to effective and persuasive expression.”

- “Procedural rhetoric, then, is a practice of using processes persuasively.... persuading through processes in general and computational processes in particular.”
Monopoly’s rhetoric

• Fictional world: Real-estate speculation and development, plus random events
• Rules: Land monopolies required for development, allows bankrupting rivals
• Gameplay: Buy land as fast as you can, trade aggressively, develop first, broken endgame
• Rhetoric: Strategies for capitalism? Parody?
The Sims

• Fictional world: Stylized suburban life, work elided, home decoration, moody “sims”

• Rules: No set goal, must manage moods, basic needs and relationships require work

• Gameplay: Queuing up tasks, compromise, fighting time constraints, paths to goals

• Rhetoric: Suburban life as constant struggle for the basics, w/ unclear goals, but...
Game fictions

• A great variety of fictions.
• But only two major approaches to how the fictional elements are implemented.
• Two examples: *Prince of Persia: The Sands of Time* and *Fable.*
Prince of Persia
The Sands of Time

Linear story, with side trips
(playing a cinematic story)
Fable

Putting it together

Linear story, good and evil choices
NPC logics same for animation and language
Façade
an interactive drama

• Michael Mateas and Andrew Stern — writers, designers, and implementers

• Interactive characters, drama manager, and “bag of beats/mix-ins”

• A neo-Aristotelian one-act play, different every time

• Released summer 2005. NY Times says: “This is the future of video games.”
Multiplayer fictions

- MMO quests, world stories, unpredictable behavior (real people), event teams, etc
- Alternate reality games (blurring bounds with real world, difficulty selling “TING” games)
- Pervasive games, LARPs, other forms
RPG story logics

- Quest flags (milestones) and dialogue trees (directed graphs).
- Easy to implement and cheap at runtime.
- Conceptually simple and accessible to non-programmer designers.
- Vast number of possible positions in simulated graphical world, small number in story world.
In short

- Today’s RPGs use brittle logics that tend toward breakdown when played.
- Other games use stories “on rails” and brute force character methods (e.g., FSMs).
- Game companies are loathe to explore flexible, authorable models while making $$$ projects.
- Who will do the research?
The Eliza breakdown

• In *play* the experience falls apart:
  You are going to repeat what I say in the form of a question
  WHAT MAKES YOU THINK I AM GOING TO REPEAT WHAT YOU SAY IN THE FORM OF A QUESTION

• The power of initial expectation is great, but *Eliza*-style illusions break down (in a manner that reflects the underlying system shape) unless interaction is severely restricted.

• Games avoid illusion, but still break down...
The Tale-Spin effect

• If Eliza is boom/bust, Tale-Spin has no boom. And play will not reveal its complexity.

• The main lesson of Tale-Spin: if we are creating media (e.g., games) fascinating, successful, hidden processes accomplish nothing.

• This is why “mis-spun” stories are popular:
  Henry Ant was thirsty. He walked over to the river bank where his good friend Bill Bird was sitting. Henry slipped and fell in the river. Gravity drowned.
The SimCity Effect

• Like *Eliza*, *SimCity* works on expectation, at first. But play causes them to diverge.

• *SimCity* is designed to transition players, via experimentation & feedback, from assumption to understanding of its procedural city — enabling agency.

• *SimCity* successfully exposes an interesting model to players and makes this the center of innovative gameplay.
Intention

- Doug Church, “Formal Abstract Design Tools” in *Game Developer* (1999)
- Intention as a game design goal: “allowing and encouraging players to do things intentionally”
- Understanding the game world well enough to make and execute a plan of action, then seeing a clear reaction from the game world
Intention

This process of accumulating goals, understanding the world, making a plan and then acting on it, is a powerful means to get the player invested and involved. We'll call this “intention,” as it is, in essence, allowing and encouraging players to do things intentionally. Intention can operate at each level, from a quick plan to cross a river to a multi-step plan to solve a huge mystery.

— Church in “FADT”
Janet Murray

• “Agency is the satisfying power to take meaningful action and see the results of our decisions and choices”
  — *Hamlet on the Holodeck*, 1997

• “When the world responds expressively and coherently to our engagement with it, then we experience agency”
  — *First Person*, 2004
Thanks everyone!