Game Evaluation

CIS 487/587
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The next 12 slides come from the Rabin text

Ludology?

- *Ludus* (Latin) = game
- *Logos* (Greek) = reason, science
- Ludology = Scientific analysis of games
- Ludology is a general term for studies and theories focusing on games
- Compare with 'narratology' = set of theories on narrative and narration

Ludology defined

- Ludology is an *academic attitude to games*
- it requires a generic approach to games
- Ludological efforts aim to understand better
  - What games are
  - How they work
  - Why people play them
  - How to design more diverse and better games
- Market research, technology development, background research are often too case-specific to be regarded as representatives of ludology

Design Research

- DR is interested in integrating research methods and results into design and product development processes
- See Brenda Laurel (ed.) *Design Research: Methods and Perspectives* (2003) for introduction
- 'Game design research' is a means to apply ludology to practical game development tasks
- GDR is, thus, a development-oriented means to practice ludology

Key Areas of Design Research

- ## Research *into* design
  - Traditional historical and aesthetic studies of art and design

- ## Research *through* design
  - Project-based, includes materials research and development

- ## Research *for* design
  - Creates objects and systems that display the results of the research and prove its worth

In terms of Ludology:

- Research *into* game design
  - Analyses of existing games, i.e. their designs, and how players engage with those designs, i.e. play the games
- Research *through* game design
  - Research into games that builds prototypes as its results
- Research *for* game design
  - The most fruitful area to cover in more detail

Examples of Ludological Methods & Tools

- Many researchers and practitioners have developed methods and models to design games
- The following methods and models are all recently proposed and display the ludological attitude in practice

Chris Crawford

- *The Art of Computer Game Design* (1984) may well be the first contemporary treatise with a strong ludological attitude
- Crawford identifies four common factors between all games:
  - Representation
  - Interaction
  - Conflict
  - Safety
- See also *Chris Crawford on Game Design* (2003)

Greg Costikyan

- "I Have No Words & I Must Design" (1994)
- Identifies design choices that have to be made when games are designed
- And the main features necessary for games and that should be taken into account by game designers when making games:
  - Decision making
  - Goals
  - Opposition
  - Managing resources
  - Game tokens
  - Information

MDA Framework (1/2)

- 'Mechanics, Dynamics, and Aesthetics'
- By Robin Hunicke, Marc LeBlanc and Robert Zubek
- Employed in the Game Tuning Workshops held in Game Developers' Conferences since 2001
- MDA framework consists of three main components:
  - Mechanics that describe the parts of a game at the level of data representation and algorithms
  - Dynamics that describe the run-time behavior of the game
  - Aesthetics that describe desirable emotional responses evoked in the player during gameplay

MDA Framework (2/2)

- The Aesthetics can be broken up into more distinct components; '*Eight Forms of Fun* ':
  – Sensation, game as sensory pleasure
  – Fantasy, game as make-believe
  – Narrative, game as drama
  – Challenge, game as obstacle course
  – Fellowship, game as social framework
  – Discovery, game as uncharted territory
  – Expression, game as self-discovery
  – Submission, game as pastime.

- MDA's goal is to provide a framework to span between game design, development, game criticism and research

Ernest Adams & Andrew Rollings

- *Ernest Adams and Andrew Rollings on Game Design* (2003)
- the authors divide game design into three different areas
  - Core mechanics
  - Interactivity
  - Storytelling
  - Narrative
- Adams and Rollings support design also by categorizing different types of challenges:
  - Pure challanges (logic and inference, lateral-thinking, memory, intelligence-based, knowledge-based, pattern-recognition, etc.)
  - Applied challenges (races, puzzles, exploration, conflict, economies and conceptual challenges)

Game Design Workshop

- Tracy Fullerton, Christopher Swain & Steven Hoffman: Game *Design Workshop: Designing, Prototyping, and Playtesting Games* (2004)
- They identify eight basic formal elements:
  - Players
  - Objective
  - Procedures
  - Rules
  - Resources
  - Conflicts
  - Boundaries
  - Outcomes
- Their design method is to use the formal elements to describe the current design and make sure that all aspects of a game design are taken into consideration

What is a game?

- Interactive
- Goal
- Rules
- Competition
- Story

What are you doing when you play a game?

- Killing time
- Sensing an environment
- Taking action

What makes games boring?

- Repetition
- Micro management
- Technical issues
- Too easy too hard
- Copy cat stuff
- Poor endings
- Weak storyline

Interface Issues

- High cost
- Hard to learn
- Avoid making user hunt for information
- Long sequences of keyboard operations

Fun

- List 4 games you played as a child (outdoor games, table games, card games, board games, video games)
- You can not list 4 electronic games

- What was compelling about each game?

The next 10 slides come from the Rabin text

What is Fun?

- Dictionary: Enjoyment, a source of amusement – but that doesn't help
- Important to consider underlying reasons
- "Funativity" – thinking about fun in terms of measurable cause and effect

Evolutionary Roots

- We must look to our distant past
- Young mammals play to learn basic survival skills
- Games are organized play
- Human entertainment is also at its heart about learning how to survive
- Mating and social rules also critical to us

Education == Entertainment

- Life is all either work, rest, or fun
- Fun is about practicing or learning new survival skills in a relatively safe setting
- People who didn't enjoy that practice were less likely to survive to become our ancestors

Hunting and Gathering

- For most of our species' history we were tribal hunter/gatherers
- Current popular games reflect this
- Shooters, wargames = hunting
- Powerups, resources = gathering
- Sims, MMO = social, tribal interaction

Natural Funativity Theory

- Basic concept is that all fun derives from practicing survival and social skills

- Key skills relate to early human context, but often in modern guise

- Three overlapping categories
  - Physical, Social, and Mental

Physical Fun

- Sports generally enhance our strength, stamina, coordination skills
- Exploration is fun
  - Both of local area and knowledge of exotic places
- Hand/eye coordination and tool use are often parts of fun activities – crafts
- Physical aspect to gathering "stuff"

Social Fun

- Storytelling is a social activity
  - A way to learn important survival and social lessons from others
- Gossip, sharing info w/friends popular
- Flirting, showing off, finding mates is a key interest in social fun
- Language has become paramount

Mental Fun

- Our large brains make humans unique
- Pure abstract reasoning practice is fun
- Pattern matching and generation
  – Music, Art, and Puzzles all pattern based
- Gathering also has mental aspect, categorizing and identifying patterns

Multipurpose Fun

- Many fun activities have physical, social and mental aspects in combination

- Games that mix these aspects tend to be very popular

- Incorporate ways to practice these skills to increase the popularity of games

Gameplay Trumps Story

- If you have a conflict between gameplay or story, first look for a compromise that favors both
- Failing that, make sure that the gameplay is good at expense of story
- Always signal player clearly in narrative to interactive transitions with visuals, audio

Conflict

- What conflicts exist in the game of poker?

- What conflicts exist in the game of football?

- What is the player's role in each?

What do players want?

- A challenge
- To socialize
- To play on their own (sometimes)
- Bragging rights
- Emotional experience
- To fantasize

What do players expect?

- Consistent game world
- To understand game world boundaries
- Reasonable solutions to problems
- Sense of direction (goals and hints)
- Accomplish goals incrementally
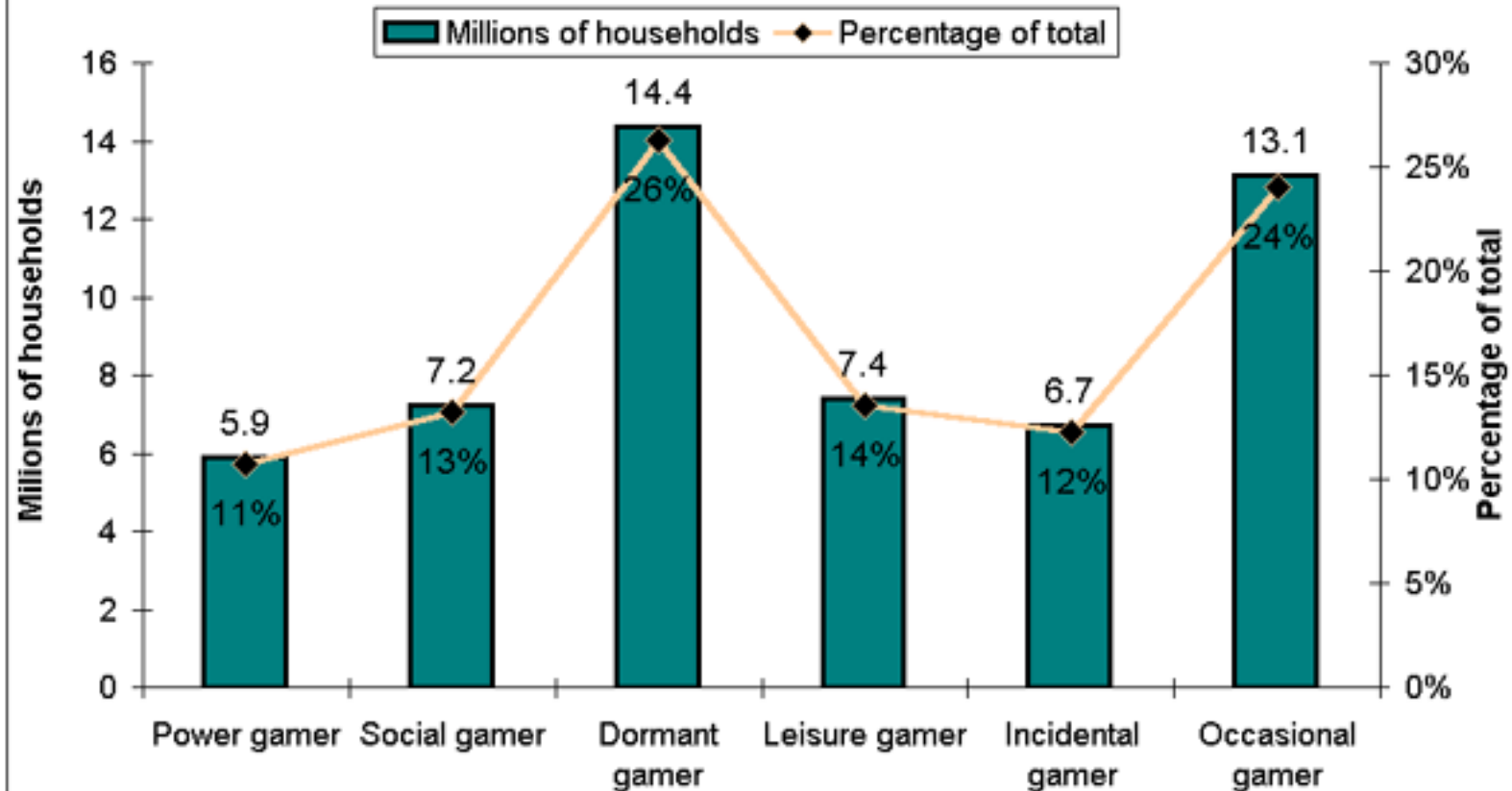- To be immersed in game world

What do players expect?

- To fail
- Fair chance to win
- Avoid unnecessary repetition
- Not to get stuck hopelessly
- Not to be passive watchers of all action sequences

What a game needs to be successful

- Playability
- Knowledge of audience

Number and Percentage of Households with Gamers from Different Segments

Legend: Millions of households — Percentage of total

Segment	Millions of households	Percentage of total
Power gamer	5.9	11%
Social gamer	7.2	13%
Dormant gamer	14.4	26%
Leisure gamer	7.4	14%
Incidental gamer	6.7	12%
Occasional gamer	13.1	24%

Source: *Electronic Gaming in the Digital Home*
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Ages 2 to 4

- Trouble controlling mice and keyboard
- No instructions
- Prompt user for input during long pauses
- Use speech for payoffs
- Speech for stories
- Talking characters
- Simple graphics and bright colors

Ages 4 to 5

- Similar to ages 2 to 4
- Kids can recognize a few words
- Mouse control is a little better
- Keyboard is a must

Early Elementary Ages 5 to 8

- Monsters and bad guys can't be too scary
- Injury, blood, and gore is a no-no

Upper Elementary Ages 7 to 11

- "age or reason"
- Quick to judge material as babyish
- Characters a little older than the players
- Watch vocabulary

Middle/High School
Ages 12 to 17

- Tough age group
- Operate computers at an adult level
- Boys love games like Quake
- Girls like social activity games

Adults Age 17+

- PG or R content
- Sophisticated story lines are fine

Gender Considerations

- Games should have both male and female protagonists
- No significant blood and gore
- Avoid significant fighting
- Avoid gender stereotypes
- Include humor

3D Point of View

- Players move in virtual world

- Design issues
  - Speed, power, and simplicity
  - Graphics power
  - Lost in a maze common scenarios
  - Multiple levels of adventure
  - Multiplayer?

Interactive Fiction

- Story based games, often text-based
- Design issues
  - Engine to manage details
  - Designer concentrates on story
  - Mature content
  - Interactive story telling

Edutainment

- Merging education and entertainment
- Design issues
   - Style (drill and practice, half and half, content games, discovery games)
   - Age considerations
   - Use of licensed properties
   - Who will buy the game (parent/kid)?

Fighting Games

- Hand to hand combat with or without weapons

- Design issues
  – Character creation issues
  – Special or secret moves
  – Violence
  – Continued inventiveness (future growth)

God Games

- Put player in driver's seat for simulation
- Design issues
  - Systems modeling
  - Simulation has to be believable

Multiplayer Games

- Usually involve networks or Internet

- Design issues
  - Economic model
  - Player interaction
  - Artificial players

Platform Games

- Consoles dependent
- Design issues
  - Level editing
  - Character creation

Puzzle and Card Games

- Diversion or break games

- Design issues
  - Take an old idea and give it a twist
  - Often no one owns the rights to the "paper" version of the game

Retro Games

- Classic games (e.g. Atari, Activision, etc.)

- Design issues
  - Write a emulator for the old code
  - Implement a new clone in environment
  - Update a classic game
  - Build a "new wave" version

Role Playing Games

- Originally played with pen, paper, dice, as board game

- Design issues
  - Sequels make money
  - Create a world like no other – fictitious and realistic
  - Network PC's and real time conversation
  - Battles and conflicts

Shooters

- Player as hunter and hunted

- Design issues
  - 3D graphics
  - Complex interaction devices

Simulation Games

- Military and space simulations are common

- Design issues
  - Verisimilitude (how close to reality is it?)
  - Mission impossible
  - 3D engine use
  - Re-invent the wheel

Sports Games

- Games with people
- Design issues
  - Realistic action and statistics
  - Packaging the game
  - Licensing
  - Celebrity endorsement
  - User control
  - Role

Virtual Reality Games

- Suspension of disbelief is key
- Most focus so far has been on 3D view
- Design issue
  - Tough to do on a single flat screen
  - Need a helmet
  - Need complex interaction devices

War and Real-Time Strategy Games

- Significant non-computer roots
- Design Issues
  - Historical or fictitious
  - Allow history to change?

What makes a good game great?

- Unique solutions
- Better to anticipate user actions than to restrict them to a single course of action
- Providing a rich environment that allows player unique solutions to emerge

What makes a good game great?

- Non-linearity
  - Story telling (user determines plot direction)
  - Allow multiple puzzle solutions
  - Order (let user decide when to tackle each piece of the solution)
  - Selection (allow user to decide which challenges to include in game and which to leave out)

What makes a good game great?

- Modeling reality
  - It is possible to have so much realism in a game that it interferes with player's fun
  - Players love fantasized reality

- Teaching the player
  - Provide tutorial or practice games

- Reward players
  - Especially for training effort

What makes a good game great?

- Input/output
  - Use reasonable input devices and key sequences
  - Let player configure controls to his or her preferences

- Output and game world feedback
  - Need reasonable response time for displaying response to user actions
  - Nice to allow multiple views
  - Provide feedback on user progress

10 Basic Rules for Game Design

1. Start with a good story and a good idea
2. Write down your design on paper or equivalent
3. Don't bite off more than you can chew
4. Know your target audience
5. Come up with a new idea

10 Basic Rules for Game Design

6. Be flexible follow a rapid prototyping mindset
7. Design for the future
8. Think series or sequels
9. Content is everything
   a. Use of graphics and technology
   b. Game is fun to play
10. Give the players goals

Ten Biggest Mistakes
Game Programmers Make

1. Make a bad publishing deal
2. Forget to back up work
3. Missing Christmas
4. Fail to test properly
5. Using old technology

Ten Biggest Mistakes
Game Programmers Make

6. Writing for DOS
7. Lying to the public
8. Neglect to advertise
9. To many cooks not enough helpers
10. Omitting comments from source code

Most Common Failings

- Developers overestimating their own abilities
- Lack of market testing
- Nothing distinguishes the product from others in the market place