CS 325
Intro to Game Design

Spring 2014

George Mason University

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Tentative Schedule

Date	Topic	Chapter	Due
Thurs Jan 23	Introduction		
Tues Jan 28	The Role of the Game Designer	Chapter 1	
Thurs Jan 30	Javascript, your game designs		Analog 1
Tues Feb 4	The Structure of Games	Chapter 2	
Thurs Feb 6	Javascript/Phaser, your game designs		Analog 2, Digital 1
Tues Feb 11	Working with Formal Elements	Chapter 3	
Thurs Feb 13	Snow		
Tues Feb 18	Phaser		
Thurs Feb 20	Working with Dramatic Elements	Chapter 4	Digital 2
Tues Feb 25	Play your games, more Phaser		
Thurs Feb 27	Working with System Dynamics	Chapter 5	
Tues March 4	Conceptualization	Chapter 6	
Thurs March 6	Prototyping	Chapter 7	Digital 3
Tues March 11	Spring Break		
Thurs March 13	Spring Break		
Tues March 18	Mid-term review		
Thurs March 20	Mid-term exam		

The story about the pottery class

- It was a parable from **Art & Fear: Observations On the Perils (and Rewards) of Artmaking** by David Bayles and Ted Orland:

  - 'The ceramics teacher announced on opening day that he was dividing the class into two groups. All those on the left side of the studio, he said, would be graded solely on the quantity of work they produced, all those on the right solely on its quality.
  His procedure was simple: on the final day of class he would bring in his bathroom scales and weigh the work of the "quantity" group: fifty pound of pots rated an "A", forty pounds a "B", and so on. Those being graded on "quality", however, needed to produce only one pot"albeit a perfect one"to get an "A".
  Well, came grading time and a curious fact emerged: the works of highest quality were all produced by the group being graded for quantity. It seems that while the "quantity" group was busily churning out piles of work"and learning from their mistakes"the "quality" group had sat theorizing about perfection, and in the end had little more to show for their efforts than grandiose theories and a pile of dead clay.'

Opportunities

- National Museum of Crime & Punishment wants an anti-piracy game!

Chapter 4:
Working with Dramatic Elements

Exercise 4.1: Making Checkers Dramatic

- Checkers is abstract; why would you want to capture your opponent's pieces?
- Devise a set of dramatic elements to make checkers emotionally engaging, such as:
  - backstory
  - give each piece a name and distinctive look
  - define special areas on the board
  - whatever you can think of

Introduction

- Formal elements work together to create a "game".
- **Dramatic elements** engage players emotionally and invest them in a game's outcome. They provide context to gameplay by overlaying and integrating the formal elements into a meaningful experience.
  - challenge
  - play
  - premise
  - character
  - story

Exercise 4.2: Dramatic Games

- Name five games that you find dramatically interesting. What is it about those games that you find compelling?
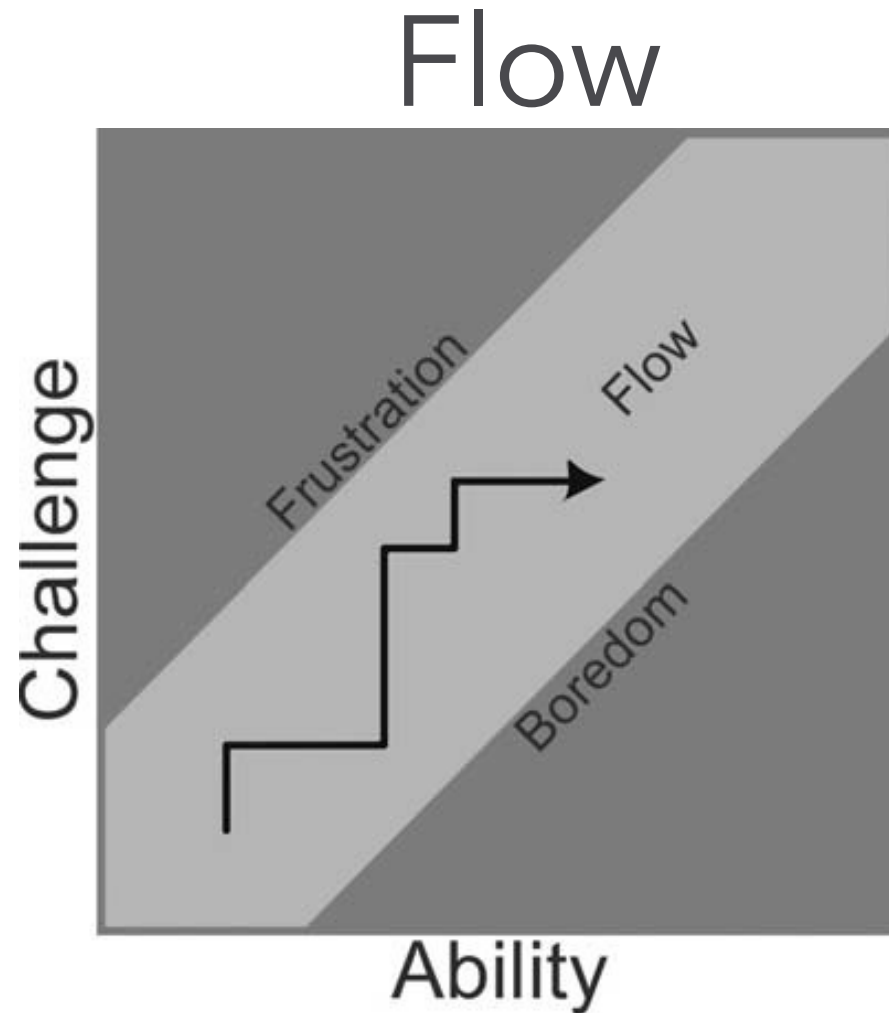
Challenge

- Challenge can be engaging.

  - Are the challenges of our everyday life engaging?

- An engaging challenge is satisfying to complete and requires just the right amount of work to create a sense of accomplishment and enjoyment.

- Challenge is very individualized.

  - Chutes and Ladders is hard if you're learning to count!

- Challenge is dynamic.

  - A task may be challenging at the beginning of a game, but then you get good at it.

Flow

- Mihaly Csikszentmihalyi
- Found universal principles for enjoyable activities.
  - Regardless of age, social class, or gender.
  - Activities spanned many different disciplines, including performing music, climbing rocks, painting, and playing games.
  - The words and concepts people used to describe their enjoyment were similar.

Flow

- Conditions:
    1. Chance of success
    2. Able to concentrate
    3. Clear goals and immediate feedback
    4. Deep but effortless involvement that removes from awareness the worries and frustrations of everyday life
    5. Sense of control over your actions
    6. Concern for the self disappears (but emerges stronger afterwards)
    7. Sense of duration of time is altered (faster or slower)
- "The combination of all these elements causes a sense of deep enjoyment that is so rewarding people feel like expending a great deal of energy is worthwhile simply to be able to feel it."

Flow

- The arrow shows a person getting better the task; the challenge should increase to match their increasing ability.

Flow

- A Challenging Activity That Requires Skill
  - Flow occurs with activities that are "goal-directed and bound by rules… that could not be done without the proper skills."
    - Exercise 4.3: List the types of skills required by the games you enjoy. What other types of skills do people enjoy that you could incorporate into the games you design?
- The Merging of Action and Awareness
  - "When all of a person's relevant skills are needed to cope with the challenges of a situation, that person's attention is completely absorbed by the activity… People become so involved in what they're doing that the activity becomes spontaneous, almost automatic; they stop being aware of themselves as separate from the actions they are performing"

Flow

- Clear Goals and Feedback

  - In life, we often have contradictory goals. In flow experiences, we know exactly what must be done. Consider music, tennis, rock climbing.

  - Exercise 4.4: Goals and Feedback. List the types of feedback generated by three different games. How does the feedback relate to the ultimate goal of each game?

- Concentration on the Task at Hand

  - "You're not aware of other problematic life situations. … Once you're in the situation, it's incredible real, and you're very much in charge of it. It becomes your total world."

Flow

- The Paradox of Control
  - "Only when a doubtful outcome is at stake, and one is able to influence that outcome, can a person really know she is in control."
  - How to offer meaningful choices to players, without offering complete control or an assured outcome?
- The Loss of Self-Consciousness
  - In everyday life, we think about how we appear to other people and we have self-esteem. In flow, we are too involved to care about protecting the ego.
  - We forget our self-consciousness; afterwards, we generally emerge with a stronger self-concept.
  - Musician at one with harmony of the cosmos, athlete at one with the team, solo gamer empower by her strategies. The self expands through acts of self-forgetfulness.

Flow

- The Transformation of Time
  - Hours seem to pass by in minutes
  - Occasionally the reverse: ballet dancers describe how a difficult turn that takes less than a second stretches out for what seems like minutes.
- Experiences Becomes an End in Itself
  - When most of these conditions are present, we enjoy the activity that produces them. We seek the activity as an end in itself (**autotelic**).
  - Most thing in life we do to achieve a goal, not because we enjoy them (**exotelic**).
  - Art, music, sports, and games are usually autotelic.

Flow

- To make flow experiences, think about:
    - What skills does your target audience have?
    - How can you give your players clear, focused goals, meaningful choices, and discernible feedback?
    - How can you merge what a player is doing physically with what they need to be thinking about in the game?
    - How can you eliminate distractions and fear of failure; that is, how can you create a safe environment where players lose their sense of self-consciousness and focus only on the tasks at hand?
    - How can you make the game activity enjoyable as an end in itself?

Play: The Nature of Play

- Play can be thought of as freedom of movement within a more rigid structure.

- *The Promise of Play* (documentary)

  - "Play is boisterous." "It's non-directed." "It's spontaneous." "It's not scripted." "Play is loud." "Not work." "It's physical." "It's fun." "An emotional state when you're having a good time." "Play actually is meaningless behavior. You do it for its intrinsic value to you, but play can have utility. That is, you end up developing skills, and those skills can then be used in other arenas." "I think play is one of the ways that we get a feel for the shape of the world." "Play is the central item in children's lives. It's like work is to grown-ups. They play to learn." "Play is child's work. It's all that young children do to learn about the world that they're in."

Play: The Nature of Play

- Helps us learn skills and acquire knowledge
- Let us socialize
- Assists in problem solving
- Allows us to relax
- Makes us see things differently
- Not too serious (laughter and fun)
- Somewhat serious (pushing boundaries and trying new things)
- Children are experts
- Not any one thing, but rather an approach to an activity

Play: The Nature of Play

- *Man, Play, and Games* by Roger Callais (1958)

	Free-form play *(paida)*	Rule-based play *(ludus)*
Competitive play *(agôn)*	Unregulated athletics (foot racing, wrestling)	Boxing, billiards, fencing, checkers, football, chess
Chance-based play *(alea)*	Counting-out rhymes	Betting, roulette, lotteries
Make-believe play *(mimicry)*	Children's initiations, masks, disguises	Theater, spectacles in general
Vertigo play *(ilinx)*	Children "whirling," horseback riding, waltzing	Skiing, mountain climbing, tightrope walking

Play: Types of Players

- Competitor
- Explorer
- Collector
- Achiever
- Joker
- Artist
- Director
- Storyteller
- Performer
- Craftsman
- …

Exercise 4.5: Player Types
Name a game that appears to each type of player in the list. What type of player do you tend to be?

Play: Levels of Engagement

- Not all players need to participate at the same level.
- Some people like to be spectators.
  - How many times have you sat and watched a friend or sibling play through a level?
- Participant play is how we usually think of play.
  - Participants can experience transformational play.
  - Serious games try for this.

Premise

- **Premise** establishes the action of the game within a setting or metaphor.

- Premise is a traditional element of drama.

- Without it, many games would be too abstract for players to be emotionally invested.

    - Imagine you are a set of data, and you try to increase some values to win the analysis. Sounds boring, but this is most combat systems.

    - Connect players with dramatic premise: An elf with a bow and arrow!

    - Flappy Bird?

Premise

- In traditional drama, premise is established in the exposition.
  - Time and place, characters and relationships, status quo, objective, etc.
  - The **problem** is the event that upsets the status quo and creates the conflict.
  - The **point of attack** is the point at which the problem is introduced and the plot begins.

Premise: Movies

- Star Wars: Episode IV

  - Galaxy far, far away

  - Luke Skywalker wants to get away and join the rebellion, but is held back by responsibility and loyalty

  - Story begins when his uncle buys two droids carrying critical, secret information

- Fellowship of the Ring

- Die Hard

Premise: Games

- Space Invaders
  - Set on a planet (earth?) under attack by aliens
  - You are an anonymous protagonist defending the planet from the invaders
  - Story begins when the first shot is fired
  - Don't need the backstory to feel the tension of the steadily advancing aliens
- Pitfall
- Diablo
- Myst

Premise

- Premise makes a game's formal system playable.
- Good premise unifies the formal and dramatic elements. This heightens the experience of players.

Character

- **Characters** are the agents through whose actions a drama is told.

- **Protagonist** is the main character.

- The **antagonist** opposes the main character's attempts to solve the problem.

- Characters can be:

  - major (significant impact) or minor

  - round (complex with well-defined traits and personality, or who undergoes a significant change) or flat (few traits and shallow personality)
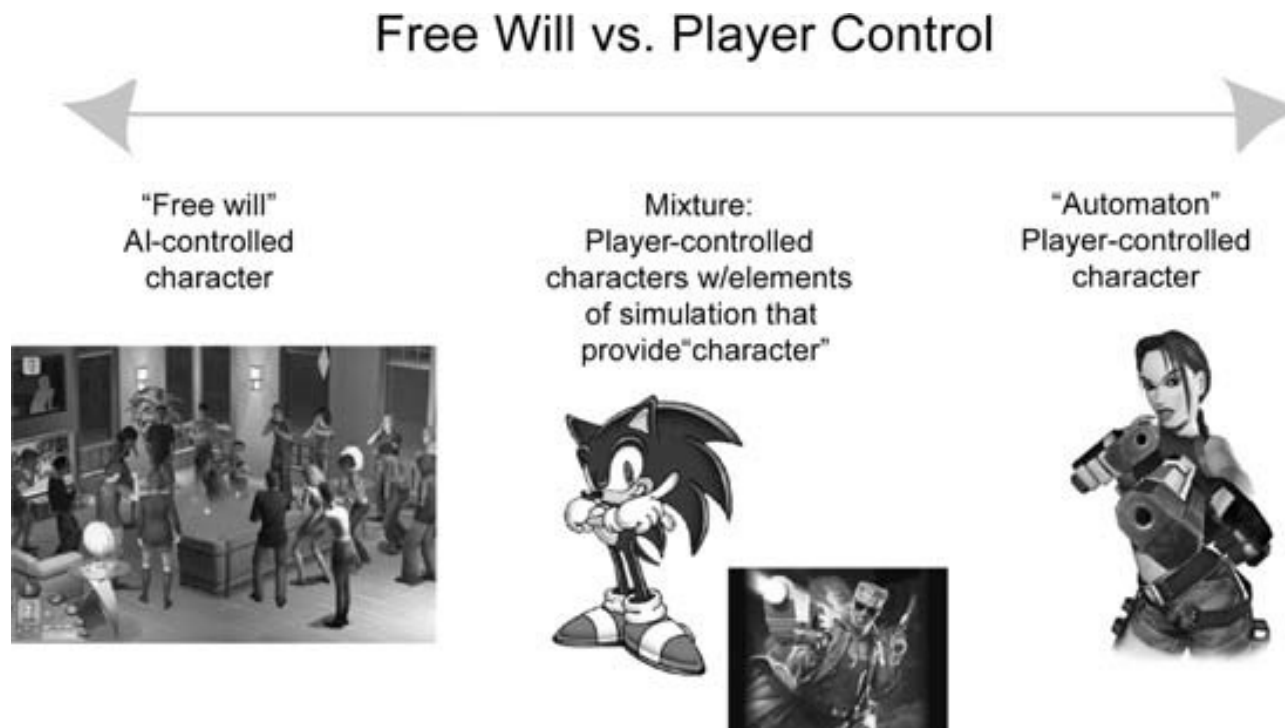
Character

- Ask yourself when writing:
  - What does the character want?
  - What does the character need?
  - What does the audience/player hope?
  - What does the audience/player fear?

Character

- Unique to games: agency versus empathy.
- **Agency** is the practical function of a character to serve as a representation of the player in the game.
- **Empathy** is the potential for players to develop an emotional attachment to the character, to identify with their goals and, consequentially, the game objectives.
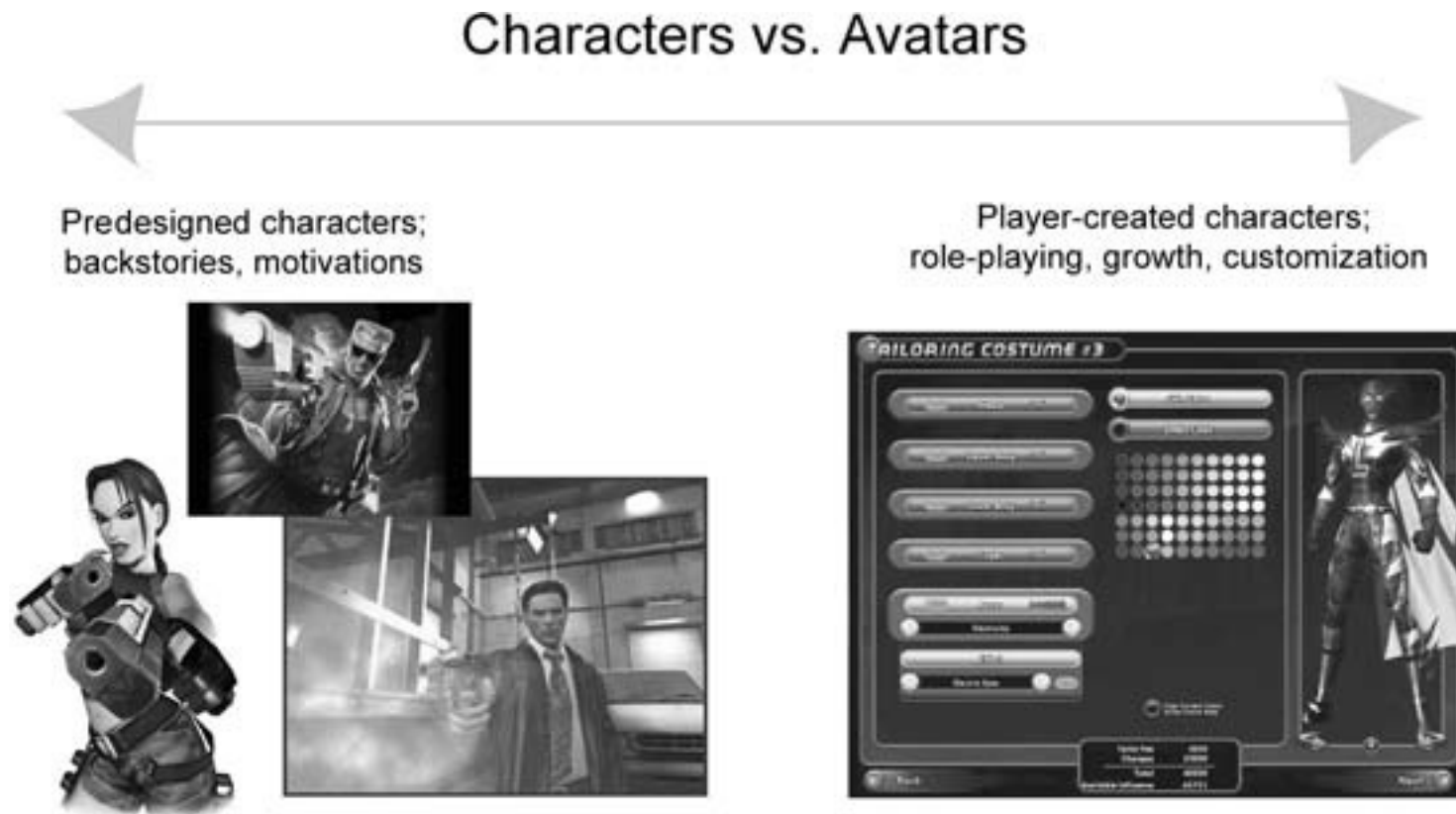
Character

- Free will versus player control
  - Mario is a pure agent: he does nothing without the player. Sonic tapped his foot!
  - The Sims!

Free Will vs. Player Control

"Free will" AI-controlled character

Mixture: Player-controlled characters w/elements of simulation that provide "character"

"Automaton" Player-controlled character

Character

- **Avatars** are player-created characters.

Characters vs. Avatars

Predesigned characters; backstories, motivations

Player-created characters; role-playing, growth, customization

Character

- Believable AI is the holy grail.
  - The Sims
  - Halo enemy and ally AI
  - Façade by Michael Mateas and Andrew Stern

- Exercise 4.7: Name three game characters that you find to be compelling. How are they brought to life? What allows you to identify with them? Are they rounded or flat, dynamic or static?
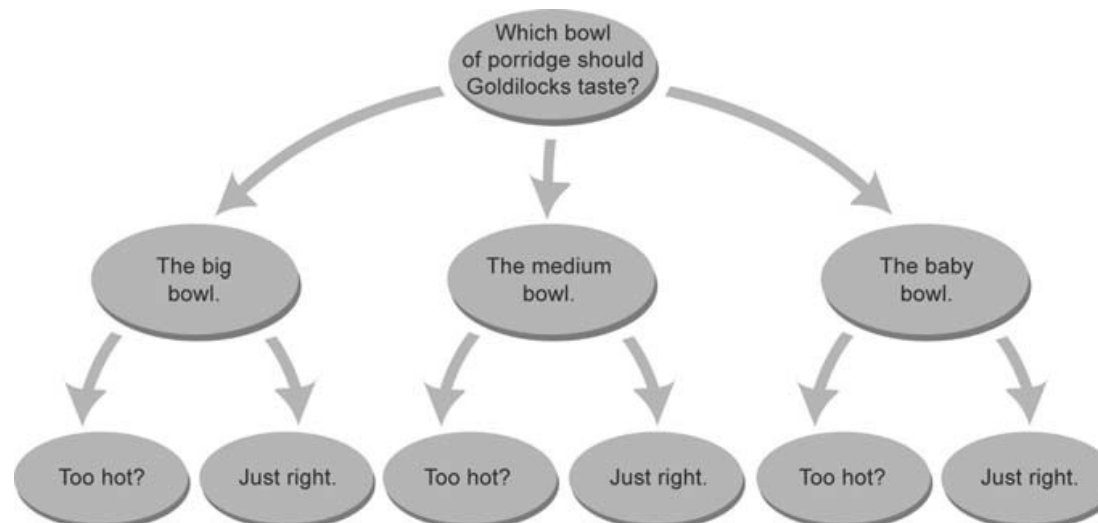
Story

- Just like the outcome of a game must be uncertain, so must the outcome of a story (at least the first time we experience it).

- However, the uncertainty in a film or a play is resolved by the author, while the uncertainty of a game is resolved by the players. Because of this, it is very difficult to integrate traditional storytelling methods into games.

Story in Games

- Backstory only (premise)
  - cutscenes between levels
  - like *Groundhog Day*
- Branching story lines
  - Too hard to author, so player choices end up being restricted or simplistic. (Foldback story)

Story in Games

- Emergent Story

  - Black and White

  - Half-Life

  - Halo 2

- Exercise 4.8: Pick a game that you feel successfully melds its story line with the gameplay. Why does this game succeed? How does the plot unfold as the game progresses?

World Building

- The deep and intricate design of a fictional world

  - maps

  - histories

  - cultural studies (language, government, politics, economies)

- J.R.R. Tolkien's Middle Earth

- The Star Wars universe

- World of Warcraft

Two Great Myths of Interactive Storytelling by Jesse Schell

- Myth #1: Interactive Storytelling Has Little to Do with Traditional Storytelling
  - When one is engaged in any kind of story line, interactive or not, one is continually making decisions: "What will happen next?" "What should the hero do?" "Where did that rabbit go?" "Don't open that door!" The difference only comes in the participant's ability to take action. The desire to act, and all the thought and emotion that go with that, are present in both. A masterful storyteller knows how to create this desire within a listener's mind, and then knows exactly how and when (and when not) to fulfill it. This skill translates well into interactive media, although it is made more difficult because the storyteller must predict, account for, respond to, and smoothly integrate the actions of the participant into the experience.

Two Great Myths of Interactive Storytelling by Jesse Schell

- Myth #1: Interactive Storytelling Has Little to Do with Traditional Storytelling

  - The way that skilled interactive storytellers manage this complexity, while still using traditional techniques, is through the means of *indirect control*, using subtle means to covertly limit the choices that a participant is likely to make. This way, masterful storytelling can be upheld while the participant still retains a feeling of freedom. For it is this feeling of freedom, not freedom itself, which must be preserved to tell a compelling interactive story.

Two Great Myths of Interactive Storytelling by Jesse Schell

- Myth #2: Interactive Storytelling Has Little to Do with Traditional Game Design

  - Making and analyzing traditional games can often be far more instructive than trying to develop a fully functioning video game. You can learn much more about game design in a much shorter time, and you won't have to concern yourself with the technical headaches and limitations involved with interactive digital media. If you really want to understand how to create good interactive entertainment, first study the classics, and then try to improve on them. Riddles, crossword puzzles, chess, poker, tag, soccer, and thousands of other beautifully designed interactive entertainment experiences existed long before the world even knew what a computer was.

Two Great Myths of Interactive Storytelling by Jesse Schell

- Myth #2: Interactive Storytelling Has Little to Do with Traditional Game Design

  - To sum up: New technologies allow us to mix together stories and games in interesting ways, but there are very few elements that are fundamentally new—most designs are simply new mixtures of well-known elements. If you want to master the new world of interactive storytelling, you would be wise to first understand the games and stories of old.
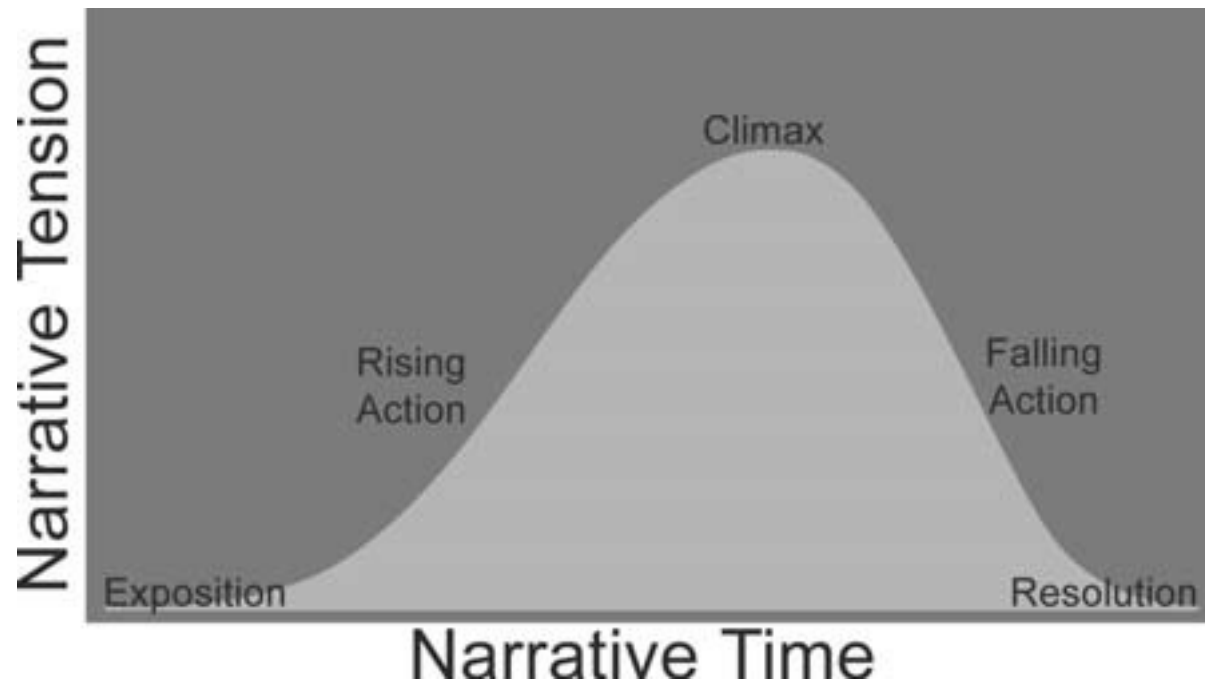
The Dramatic Arc

- Conflict is at the heart of drama and game systems.

- Meaningful conflict both keeps players from accomplishing their goals too easily AND draws players in emotionally by creating a sense of tension as to the outcome.

- In traditional drama, **conflict** occurs when the protagonist faces a problem or obstacle that keeps her from accomplishing her goal.

The Dramatic Arc

- Categories of traditional dramatic conflict:
  - character versus character
  - character versus nature
  - character versus machine
  - character versus self
  - character versus society
  - character versus fate
- As game designers, we also have:
  - player versus player
  - player versus game system
  - player versus multiple players
  - team versus team
  - etc.
- Thinking about game conflict in this way helps you to integrate the dramatic premise with the formal gameplay system.

The Dramatic Arc

- A conflict set in motion must escalate.

- Escalating conflict creates tension.

- Tension gets worse before it gets better.

- A classic dramatic arc:

The Dramatic Arc

- A classic dramatic arc:
  - Stories begin with exposition, which introduces the setting, characters, and important concepts
  - Conflict is introduced when the protagonist has a goal that is opposed by their environment, antagonist, or both.
  - The conflict and protagonist's attempt to resolve it cause a series of events that lead to rising action.
  - Rising action leads to a climax, in which some sort of deciding factor or event is introduced; what happens determines the outcome of the drama.
  - The climax is followed by a period of falling action in which the conflict begins to resolve.
  - The conflict is finally resolved during the resolution or dénouement.

The Dramatic Arc

- Jaws:
  - Protagonist: Sheriff Brody
  - Goal: Keep people of Amity safe
  - Antagonist: Shark
  - Conflict: Brody vs. Shark, Brody vs. self (fear of water)
  - Rising action: Brody keeps people out of the water. Shark attacks more people. Shark threatens Brody's children. Brody must face his fear and hunt the shark on the water.
  - Climax: Shark attacks brody.
  - Resolution: Brody kills the shark and returns the story to the status quo.

The Dramatic Arc

- In a game, the rising action is linked to both the formal and dramatic systems, because games get more difficult as they progress.

- Donkey Kong:

  - Protagonist: Mario (Jump Man)

  - Goal: Rescue Pauline before time runs out

  - Antagonist: Donkey Kong

  - Conflict: Climb building while avoiding barrels, etc.

  - Rising action: Each time Mario reaches Pauline, Donkey Kong grabs her and takes her to a higher, more difficult level.

  - Climax: Mario fights Donkey Kong directly by removing rivets.

  - Resolution: Donkey Kong falls and is knocked out; Mario rescues Pauline.

The Dramatic Arc

- Jaws has more developed characters and story than Donkey Kong.
    - Brody must overcome his fear.
    - Brody's motivation changes (save Amity, save his children, save himself).
    - Mario has no internal conflict. Mario's motivation never changes. Pauline's danger doesn't increase.

The Dramatic Arc

- Mario has something Brody doesn't: his success or failure rests in the hands of the player.
  - We the players figure out how to resolve the tension.
  - We the players feel personal accomplishment on top of sympathy for reunion of Mario and Pauline.

Exercise 4.9: Plotting a Story, Part 1

- Choose a game with a story that you've played all the way through. Plot the story against the dramatic arc.
  - How is the exposition handled? Who is the protagonist? What is the main conflict, and when is it introduced?
  - What does the protagonist do to resolve the conflict?
  - What causes the tension in the story to rise? What deciding factor brings the story to a climax?
  - What happens in the resolution?

Exercise 4.10: Plotting a Story, Part 2

- Take the same game and plot the gameplay against the dramatic arc.
  - What elements of gameplay, if any, support each of these points?
  - How is the exposition of gameplay handled? Are controls and mechanics clearly explained? Are they integrated with the dramatic premise? Is the goal clearly stated and integrated with the main conflict of the story?
  - How does the gameplay cause the dramatic tension to rise?
  - What deciding factor in the gameplay brings the game to a climax?
  - What happens in the resolution? Do the dramatic elements and gameplay elements help or hinder each other?
  - How might they be better integrated to make the game work from an emotional standpoint?

Exercise 4.11: Plotting a Story, Part 3

- Take the same game and come up with three changes to the story or gameplay that you believe would make the two better integrated.

Conclusion

- The elements of drama we looked at form the basis of a tool set for game designers to elicit powerful emotional reactions from players.

    - challenge

    - play

    - integration of premise, characters, and story

- The emotional impact of games still has not achieved the depths it is capable of!

Next Time

- **Tuesday**: Playing your games. Phaser state, tile maps, sprite sheets, DIY physics?

- **Thursday**: Read Chapter 5.

- **Due Wednesday (~2 weeks)**: Digital Assignment 3