

# Challenges and Rewards

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# Today

- Challenges
- Rewards

## Challenges

A game consists of a series of challenges

- Small challenges
  - Defeat a particular monster
  - Jump over a gap or reach a star
- Large challenges
  - Finish a level
  - Defeat an end boss
- The final challenge
  - Win the game

## Challenges

- Explicit challenges
  - Defined as such by the designer
- Implicit challenges
  - Related to learning how to best play the game (e.g. distributing points over characters)

# Challenges

- Must be consistent
- Must provide a fair playing experience
- Must not lead to stagnation
- Must not be trivial
  - Obvious things should be done by the machine AI
  - A chore versus a game feature
    - E.g. not supplying a map of explored dungeon such that you must draw it yourself constantly bringing food to your armies

# Challenges

Game genre determines the type of challenges

Challenges are formed by a combination of

- The game mechanics (constitutive rules)
- The operational rules
- The level design

# Pure Challenges

Pure challenges are the building blocks

Games normally use a combination of these

# Logical and inference challenges

- Deciding on the best course of action based on information
- Perfect information (using logic, e.g. chess)
- Imperfect information (requiring inference, e.g. closed bridge)
- RTS games
  - Whether or not to have *Fog of War*

# Memory challenges

- Based on remembering recent events inside the game
- Especially in children games
- E.g. Replaying a melody you hear (Zelda)

# Knowledge challenges

Based on knowledge

- Inside the game world (intrinsic)
- Outside the game world (extrinsic)
  - Trivial Pursuit

# Lateral thinking challenges

Combining the knowledge-based challenges

- Draw on previous experience
- Examples:
  - Figuring out how to beat an end boss
  - Using the different resources you have in the best way
  - Determine how to tune your F1 car

# Pattern recognition challenges

- Quickly see certain patterns
  - Can be geometric or otherwise
- For example:
  - Tetris
  - Recognizing the moves of opponents
  - Finding secret doorways
  - Platform games (timing jumps, etc.)
- People are good at pattern recognition
  - Other challenges can become pattern recognition challenges

# Spatial awareness challenges

Understand spatial structure of the game worlds

- Explicit: Tron, Snake, ...
- Implicit: Many other games
  - You need to understand the geometry of the world
  - Combat games (Quake, Doom, etc.)
  - Flight simulators
  - RTS with large maps

# Other Challenges

# Other Challenges

- Coordination challenges
  - Coordinate many tasks
  - With or without time constraints
  - Coordinate different moves
  - Fighting games with combos
- Reflex/reaction time challenges
  - Being able to react very quickly
  - In particular in arcade games
- Physical challenges
  - Growing field
  - Dance dance revolution
  - Wii, Eye Toy, ...

# Moral Challenges

- Making moral choices
- Different levels:
  - Universal
  - Cultural
  - Tribal
  - Personal
- Not enough used in games

# Applied Challenges

# Applied Challenges

- Race
  - The goal is to accomplish something before somebody else
  - An actual race
  - Building something
  - Collecting things, ...
  - Not much lateral thinking (no time)
  - Pattern recognition, spatial awareness, coordination, reflex/reaction time

# Applied Challenges

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- Puzzles
  - Requires to understand the relationship between objects
  - Primarily uses lateral thinking

- Exploration
  - Find out what a world looks like or how certain things work
  - For example adventure games
  - To turn it into a game, *obstacles* are created
  - Lateral thinking, pattern recognition, spatial awareness

# Applied Challenges

- Conflict
  - To win you must beat somebody else directly
    - Differences with a race
  - Many possibilities
    - Scale of the action (individual → whole armies)
    - Speed of the conflict (e.g. turn-based or real-time)
    - Complexity of victory (e.g. simple survival or complex missions)
  - Contains different pure challenges depending on the type
    - Lateral thinking
    - Coordination
    - Reflex/reaction time

# Applied Challenges

- Economics
  - Build up a well functioning economy
  - Resources move around
    - Created, moved, stored, earned, exchanged, destroyed, ...
    - Money, building material, ground, people, ammunition
  - Examples:
    - Theme park
    - Caesar, etc.
    - Creatures, The Sims
    - Part of many RTS games
  - Lateral thinking, coordination, pattern recognition

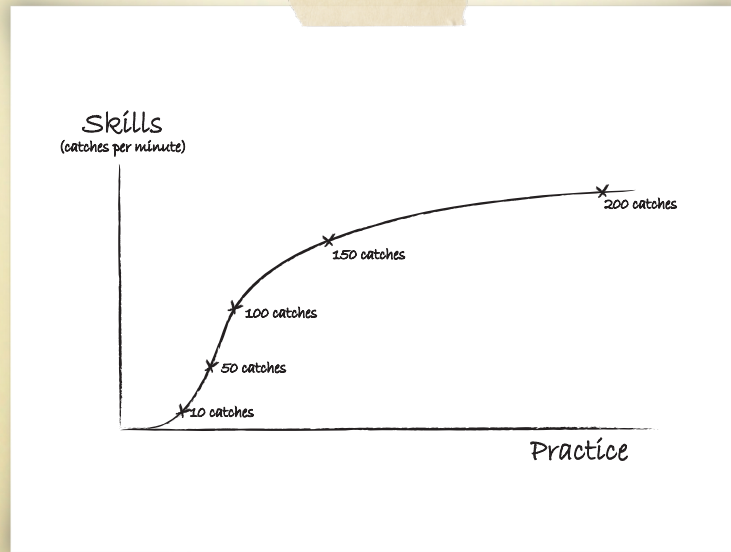
# Applied Challenges

- Conceptual challenges
  - Understanding something new
  - E.g. how a plane works
  - Lateral thinking

# Learning Curve

- Players will go through a learning curve when playing a game
- Carefully choose the difficulty of the challenges in relation to the level of the players
  - Make adaptive if possible
  - Avoid boring initial phase for experienced players
- Gender difference
  - Women like to learn the skills in a safe environment
  - Men like to learn them within the game

# Learning Curve



# Learning Curve

- Balance challenges against the players improvement
  - The player should improve, not the character he plays!
  - Just making the weapon stronger and (slightly faster) the opponent stronger is not much fun (it is more like chrome)
  - Better:
    - Increase the number of choices
    - Make the choice matter

# Flow

Flow is a well-known concept in psychology defined by *Mihaly Csikszentmihalyi* in the mid 1970s

*"The feeling of complete and energized focus in an activity, with a high level of enjoyment and fulfillment."*

# Flow

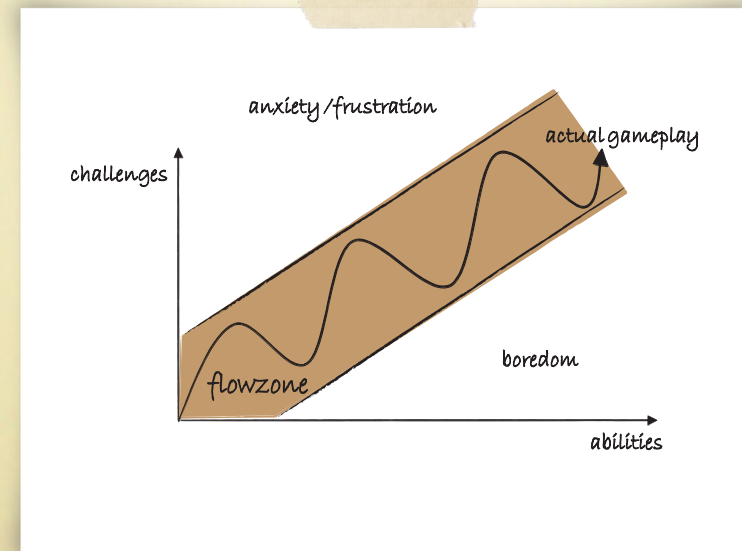
- Eight major components (not all needed):
  - A challenging activity requiring skill
  - A merging of action and awareness
  - Clear goals
  - Direct, immediate feedback
  - Concentration on the task at hand
  - A sense of control
  - A loss of self-consciousness
  - An altered sense of time

# Flow

During flow we loose track of time and worries

Also called “Being in the Zone”

# Flow



# Flow

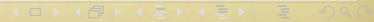
- You should create flow in your games
  - Include (most of) the eight components
  - Adapt your game to the players abilities to keep them in the zone
  - Or offer adaptive choices, allowing different users to enjoy the flow in their own way
  - Embed choices inside the core activities such that the flow is never interrupted

# Rewards

- When players succeed the challenges they must be rewarded
- Carefully designing your reward structure is crucial for the game
- Different levels of rewards, relating to different levels of challenges
  - Global rewards when winning the game or a level
    - A beautiful end sequence
    - A new game mode to continue playing
  - Medium rewards when you succeed in a medium size task
    - E.g. unlocking some new features or objects
  - Small rewards
    - E.g. some points or health

# Types of Rewards

- Only cosmetic
  - Nice movie
  - Paint job for the car
- Scores
  - Should reflect the achievements of the player
    - Avoid luck or huge bonuses
  - Can be used to track the progress in the game
    - It is in that case good to also show the maximal score possible
  - High-score lists give players social status
    - Best on the Internet
    - Make sure everybody can still be good in some list
    - For example introduce leagues



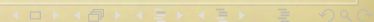
# Types of Rewards

- Bonus levels and challenges
  - Learning should widen the gaming experience
  - Avoid that people that are not so good at the game get stuck in the easy levels
  - Do not use it to mask that the game has little content
- Game features
  - For example extra weapons, shields, spells, health
  - Make sure the game remains playable if you fail to get the rewards
  - You should make life harder for good players, not easier



# Rewards

- Players are picky about their rewards
  - Do not reduce the bonus you get during the game for a particular action
  - Rewards should increase during the game
- Different reward structures lead to different game playing
  - A reward after each 50 stars collected leads to peaks in trying to achieve this
  - A rewards with a 1/50 chance with each start gives no peak but a higher average achievement
- Do not take rewards away without a logical reason
  - Losing your weapons at the next level
  - Losing a power-up when dying



# Next time

## Balance

## Chapter 8 of the book



