

COMP4002/G54GAM Games

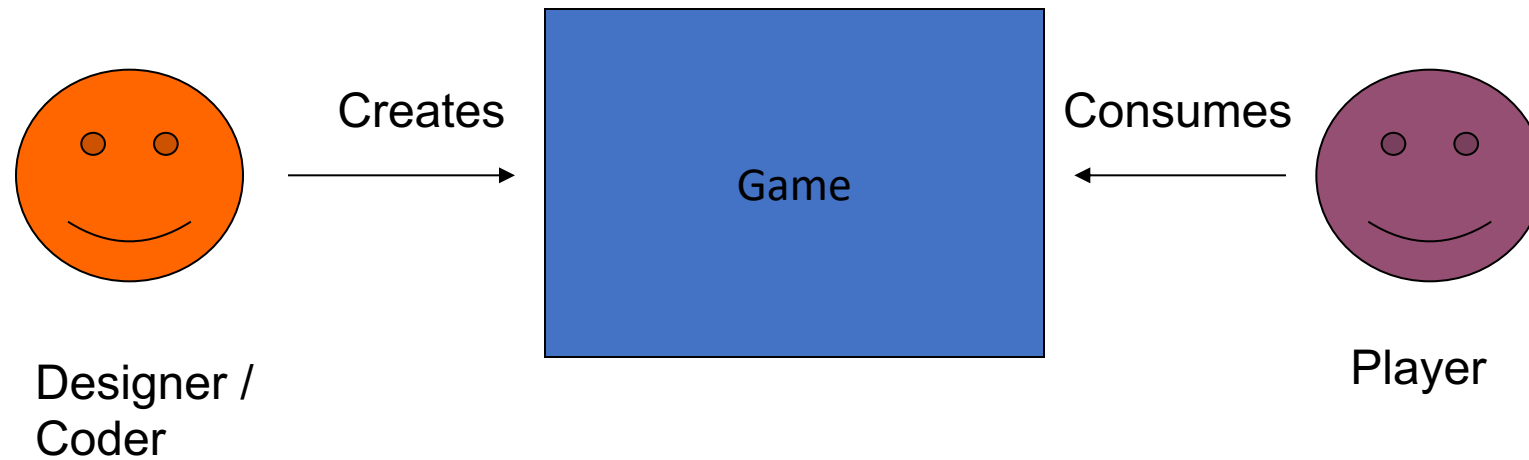
Categorising Games

Formal Elements of Game Design

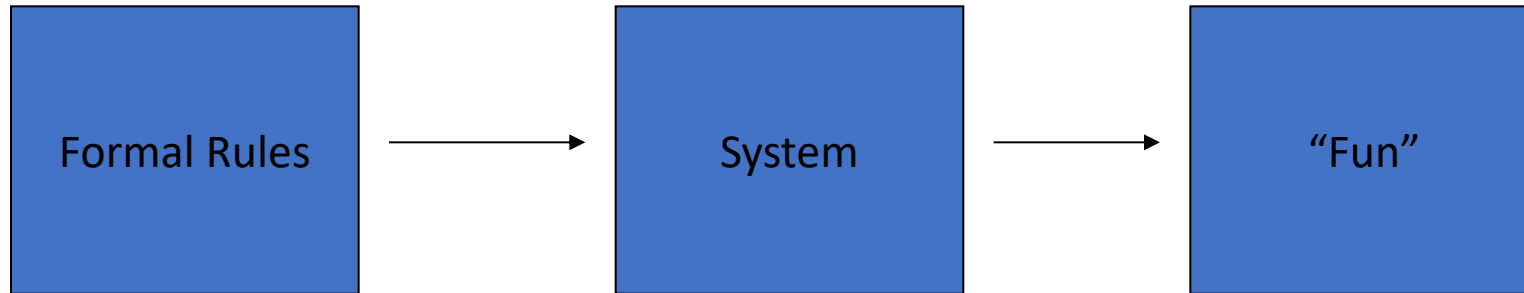
Systematic Game Design

- Game Design is a **second-order** design problem
- Designer creates...
 - The formal system
 - The rules
 - Explicit interactions with the system
- The experiential and cultural systems are emergent from the formal system created by the designer
- The designer **indirectly** designs the player's experience by **directly** designing
 - The formal system
 - The rules
 - Explicit interactions with the system

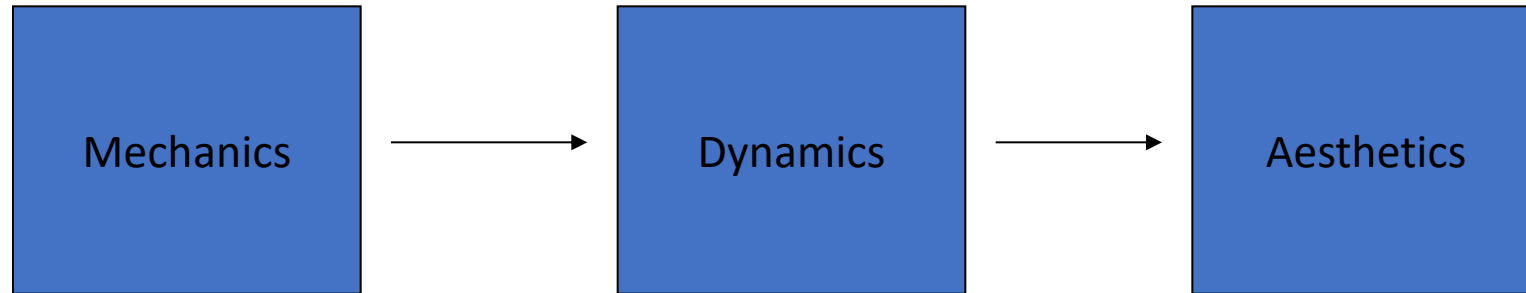
Production and Consumption



Components



Design Counterparts



Design Counterparts

- Mechanics
 - Static components of the game
 - Data representation and rules
- Dynamics
 - Run-time behaviour of mechanics and rules
 - Acting on player inputs and outputs
- Aesthetics
 - Desirable emotional responses invoked in the player
 - Cognitive interactivity etc

Aesthetic Models

- What makes a game fun or meaningful?
- Sensation
 - Fear, joy, achievement...
- Fantasy
- Narrative
- Challenge
- Fellowship
- Discovery
- Expression
- Submission

Dynamic Models

- Dynamics work to create Aesthetic (fun) experiences
- Challenge
 - Created by time pressure, adversarial play
 - Emotional investment in defeating opponent
 - Obstacles and Increasing difficulty
- Dramatic Tension
 - Encourage a rising tension followed by release
- Fellowship
 - Sharing information between players
 - Winning conditions that are difficult to achieve alone
- Expression
 - Systems for leaving a mark, purchasing, building, earning game items

Formal Elements of Game Play

- Game Design Workshop
 - Tracy Fullerton, 2008
- Players
- Goals and Objectives
- Procedures
- Rules
- Resources
- Conflict
- Boundaries
- Outcomes

Players

- Number of players
 - Single or multiple
 - Set or variable
- Roles of players
 - Uniform or different
 - Balanced
- Player interaction patterns
 - Single player versus game
 - Multiple individual players versus game
 - Player versus player
 - Unilateral competition
 - Multilateral competition
 - Cooperative play
 - Team competition



Single Player vs. Game



Multiple Individual Players vs. Game



Player vs. Player



Multilateral Competition



Unilateral Competition



Cooperative Play



Team Competition

Goals and Objectives

- What is the point of playing?
- Define what players are trying to accomplish within the rules of the game
 - *Challenging but achievable*
 - Can set tone of the game
 - Different objectives for different players
 - Players choose from several objectives
 - Partial objectives to help players achieve main objective
- What are some common objectives?

Goals and Objectives

- Capture
 - Take or destroy something of opponent's without being captured or killed
- Chase
 - Catch or elude opponent
- Race
 - Reach a goal before other players
- Alignment
 - Arrange game pieces
- Rescue or escape
 - Get defined units to safety
- Construction
 - Build, maintain and manage objects
- Exploration
 - Explore game areas
- Solution
 - Solve a puzzle before the competition
- Outwit
 - Gain and use knowledge to defeat players

Procedures

- Methods of play and actions players are allowed to take to achieve the game objectives
- Formalise interaction
 - Guide player behaviour
 - Limited by the *rules*, put into action by the players
- System procedures (behind the scenes)
 - The game makes enemies attack in waves
- Left arrow
 - Walk to the left
 - Push button B at the same time to run.
- Down
 - Crouch

Rules

- Define game objects and allowable actions by the player
 - Restrict and limit the scope of **procedures**
 - Determine the effect of **procedures**
 - Keep the game balanced*
- Rules defining objects and concepts
 - “bullets can be fired at a rate of twice per second”
 - Translated into an **intuitive** knowledge of cost, strength, power, range of the “gun”
- Rules restricting actions
 - “in order to create knight units, a player must have upgraded to a keep and built a stable” - *Warcraft II*
- Rules determining effects
 - Create variation in gameplay
 - Not necessarily triggered based on the current context

Rules

- Too many rules
 - Make the game unplayable
 - Difficult to manage understanding of the game
- Too few rules
 - Make the game so simple as to be unchallenging
 - Too little variety
 - Procedures become *efficient*
- Poorly communicated rules
 - Confuse or alienate players
 - Players feel cheated by the consequences
 - Meaningful play failure states



Resources

- Artificial game “currency” creates dynamic play
 - Lives
 - Only have 3 lives
 - Health, currency, weapons and power-ups, armour, potions
 - Terrain
 - Must capture and hold terrain in strategy game
 - Time
 - Must complete the level within a certain time
 - Actions
 - Only have a certain number of moves
 - Candy Crush Saga?
- Should make conceptual sense
 - Why is there a health pack inside the oil barrel? Why would the player *look* there?
 - Meaningful play – relevant to the context
- Must have utility and balanced scarcity, otherwise they are worthless
 - Need to determine how and when to control player access to resources

Conflict

- Conflict emerges from players trying to accomplish the goals of the game within the scope of its rules
 - Rules and procedures do not allow players to accomplish goals directly
 - Offer inefficient means to accomplish objectives
 - Force players to employ a range of skills
- Obstacles
 - Physical and mental challenges
- Opponents
 - Primary feature in multiplayer games
- Dilemmas
 - Choices player has to make

Counter Strike – Global Offensive (2012)



Armed Police Batrider (1998)



Life Is Strange (2015)



Boundaries

- Boundaries separate game from non-game
- The barrier between the real world and the game
 - “gg”
 - Gives context to the game
 - Sport, gambling, spectators
- Physical or conceptual
 - The edge of the arena, football pitch
 - Social agreement to play or not play
 - Players and spectators
- Huizinga’s magic circle
 - To play a game means entering into a magic circle, or create one as a game begins
- Pervasive games
 - Push the boundaries of the magic circle

Outcomes

- Zero sum games
 - If one player wins, another loses
 - $(+1) + (-1) = 0$
- Non-zero sum games
 - Everybody wins together, especially if we cooperate
 - No explicit winning condition
 - Minecraft
 - Still have quantifiable outcome
- Completing the game
- Completing the game in the shortest time
 - Speed-running
- Scoring the highest number of points before eventually losing
 - Rankings, score-boards
- Less tangible rewards
 - Respect of peers?

Reading

- Mechanics, Dynamics, Aesthetics
- <https://www.cs.northwestern.edu/~hunicke/MDA.pdf>
- Game Design Workshop chapters 3, 4

Question

- What was a game you played recently that was *challenging*?
- What were the *challenges*?