

# **GAME ANALYSIS FRAMEWORKS**

# Topics

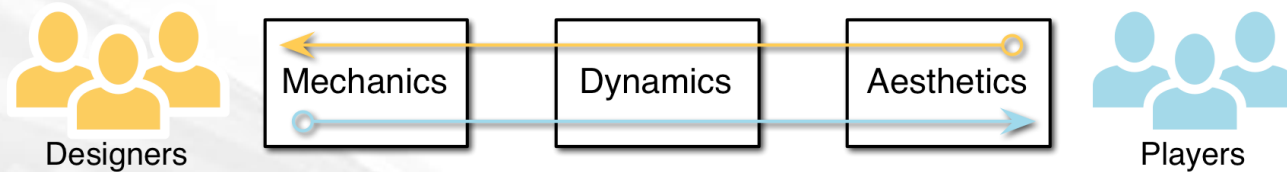
- **Common Frameworks for Ludology**
  - MDA: Mechanics, Dynamics, and Aesthetics
  - **Formal, Dramatic, and Dynamic Elements**

# MDA: Mechanics, Dynamics, & Aesthetics

- **Formalized in "MDA: A Formal Approach to Game Design and Game Research"** Robin Hunicke, Marc LeBlanc, Robert Zubek (2004)
- **Most well known framework for game analysis**
- **Three elements:**
  - **Mechanics:** The particular **components of the game at the level of *data representation and algorithms***
  - **Dynamics:** The **runtime behavior of the mechanics** acting on **player inputs and each other's outputs over time**
  - **Aesthetics:** The **desirable emotional responses evoked in the player** when he/she interacts with the game system

# MDA: Mechanics, Dynamics, & Aesthetics

- Designers and players view games from different directions



- Designers first consider the aesthetic feelings that they want players to experience
  - Then consider the dynamic play that will produce these aesthetics
  - Finally create mechanics that will lead to these dynamics
- Players first read the rules of the game (mechanics)
  - These rules lead to dynamic play
  - The dynamics produce aesthetic feelings

# Formal, Dramatic, and Dynamic Elements

- From *Game Design Workshop* by Tracy Fullerton
  - **Formal elements:** The interaction and the structure of a game. Formal elements include things like rules, resources, and boundaries.
  - **Dramatic elements:** *The story and narrative of the game.* Dramatic *elements tie the game together*, help players understand the rules, and encourage the player to become emotionally invested in the outcome of the game.
  - **Dynamic elements:** The game in motion. Once players turn the rules into actual gameplay, the game has moved into dynamic elements.

# Formal, Dramatic, and Dynamic Elements

- A game ceases to be a game if the formal elements are removed
- Formal elements of games
  - 1. Player interaction pattern: *How do the players interact?*
    - Single-player
    - One-on-one
    - Team versus team
    - Multilateral (multiple players versus each other)
    - Unilateral (one player versus all the other players)
    - Cooperative play
  - 2. Objective: *What are the players trying to achieve in the game?* When has someone won the game?

# Formal, Dramatic, and Dynamic Elements

## ■ Formal elements of games

- **3. Rules:** Limit the players' actions by telling them ***what they may and may not do in the game.***
  - Many rules are explicit, but others are implicitly understood
- **4. Resources:** Elements that have value in the game
  - Money
  - Health
  - Items
  - Property

# Formal, Dramatic, and Dynamic Elements

## ■ Formal elements of games

**5. Boundaries:** Where does the game end and reality begin?

**"A game is a temporary world where the rules of the game apply rather than the rules of the ordinary world" – Johan Huizinga, *Homo Ludens* (1955)**

- This concept is now known as the **Magic Circle**
- In a sport like **football** or ice hockey, the magic circle is defined by the **boundaries of the playing field**

**– 7. Outcome: *How did the game end?***

- Both final and incremental outcomes
- In Chess, the final outcome is that one player will win, and the other will lose.



# Formal, Dramatic, and Dynamic Elements

## ■ Dramatic elements of games

- Make the rules and resources more understandable
- Give players greater *emotional investment* in the game

## ■ Three dramatic elements of games

- 1. **Premise:** *The basic story* of the game world
- *The premise forms the basis around which the rest of the game's narrative is built*
  - **Monopoly:** The players are real-estate developers trying to get a monopoly on corporate real estate in a City.
  - **Donkey Kong:** The player is trying to save his wife from a gorilla that has kidnapped her

# Formal, Dramatic, and Dynamic Elements

- **Three dramatic elements of games (continue)**
  - **2. Character:** *The individuals around whom the story revolves*
    - In movies, the goal of the director is to encourage the audience to have empathy for the film's central character.
    - **In games, the player actually *is* the central character**
    - Normally, a role that the player must take on
  - **3. Story:** The plot of the game
    - *The narrative that takes place through the course of the game*

# Formal, Dramatic, and Dynamic Elements

- **Dynamic elements of games**
  - Occur only when the game is being played
- **Core concepts of dynamic elements**
  - **Emergent narrative**
    - Narratives can emerge from the gameplay itself

# Formal, Dramatic, and Dynamic Elements

- Core concepts of dynamic elements
  - Playtesting is the *only* way to understand dynamics
    - everyone **must** playtest to understand a game



# Questions?