# Week 4&5
GAME ANALYSIS FRAMEWORKS

Topics

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

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 playe**r when he/she interacts with the game system

MDA: Mechanics, Dynamics, & Aesthetics

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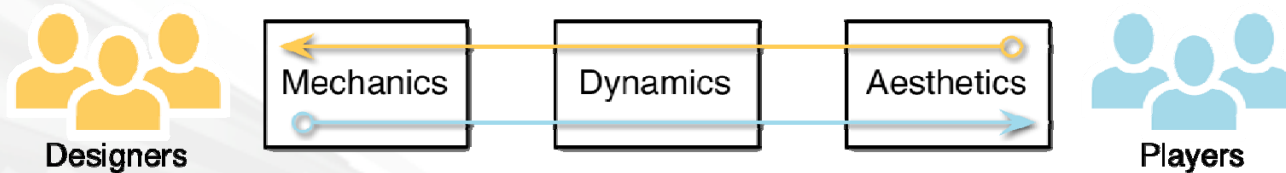
- – **Designers first consider** the **aesthetic feelings** that they want players to experience
  - **Then consider the dynamic play** that will produce these aesthetics
  - **Finally create mechanics that will lead to these dynamics**
- – **Players** first read the **rules** of the game (**mechanics**)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

Formal, Dramatic, and Dynamic Elements

- **From *Game Design Workshop* by Tracy Fullerton**

  - **Formal elements**: The **elements that make games different from other forms of media** or interaction and **provide the structure of a game**. Formal elements include things **like rules, resources, and boundaries.**

  - **Dramatic elements***: The story and narrative of the game*, including the idea**. 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**. Dynamic elements include things like strategy, behavior, and relationships between game entities**.

Formal, Dramatic, and Dynamic Elements

- **A game ceases to be a game if the formal elements are removed**

- **Seven 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

- **Seven 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. Procedures:** Actions taken by the players in the game
    - A rule tells the player what to do
    - The *procedure dictated by that rule is the actual action of the player*
    - Procedures are *often defined by the interaction of a number of rules*
  - **5. Resources:** Elements that have value in the game
    - Money
    - Health
    - Items
    - Property

Formal, Dramatic, and Dynamic Elements

- **Seven formal elements of games**

  - **6. 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. idea:** *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**
  - - 3. **Story:**
    - *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**
  - Emergence
  - One of a game designer's most important jobs is to attempt to understand the evolving implications of the rules in a game.
  - Emergent narrative
  - Narrative can also be dynamic
  - Unique to interactive experiences.

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

The Elemental Tetrad

- **A tetrad of elements**
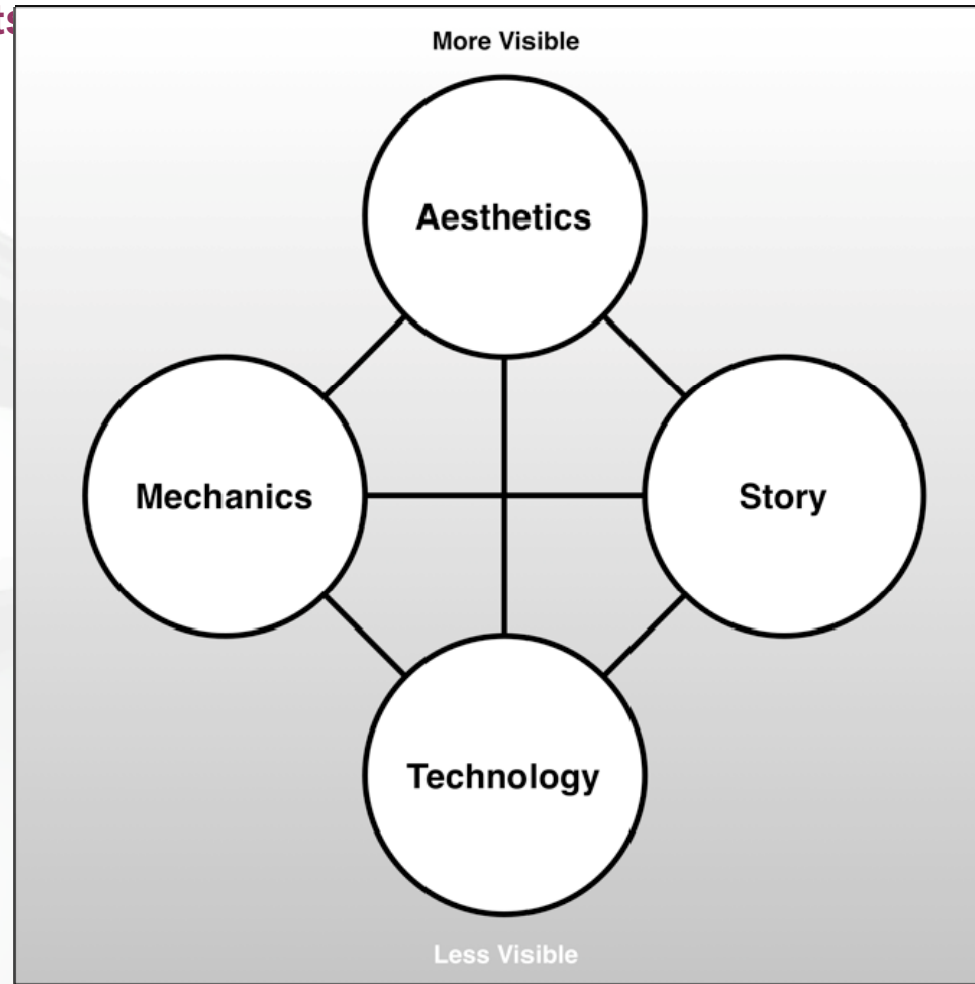
From *The Art of Game Design: A Book of Lenses* by Jesse Schell