

Game Mechanics: the Experience



Game Mechanics

Gameplay (the experience)

- Choices, challenges or consequences that players face while playing a game.

Game Mechanics (rules of play)

- **Victory Conditions**
 - How does a player wins the game?
 - Some games don't finish...
 - Victory stems from comparing the scores with other players.
- **Loss Conditions**
 - How does a player loses a game?

The experience is in the player's mind

Modelling

- Our minds deal with a representation of the reality.
- A game is a simplified model of reality.

Focus

- Games are created to capture the player's focus.

"What we focus on at any given moment is determined through a blend of our unconscious desires and our conscientious will."



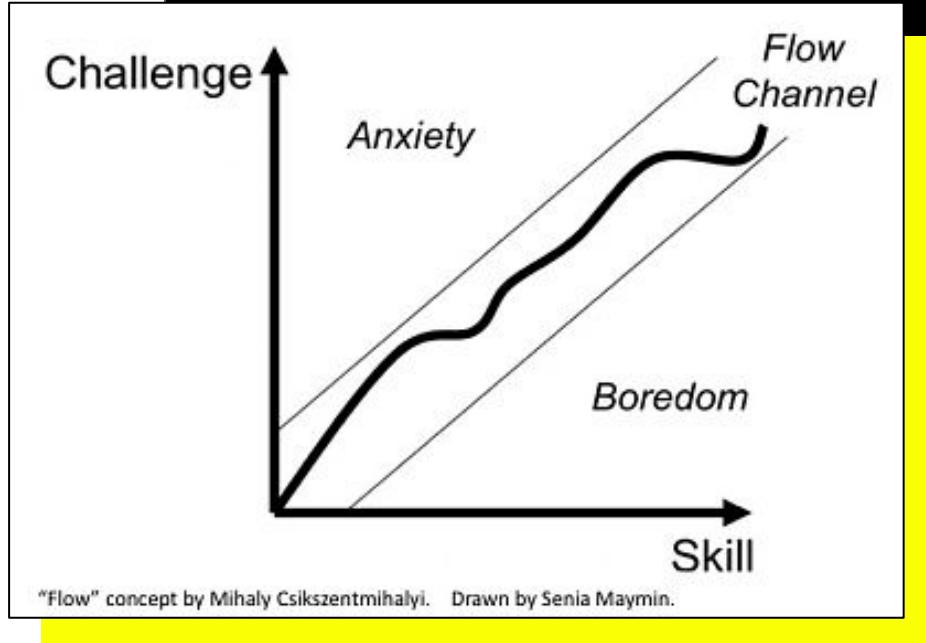
The State of Flow

The State of Flow (Mihaly Csikszentmihalyi):

"A feeling of complete and energised focus in an activity, with a high level of enjoyment and fulfilment"

Key components to put a player into a flow state:

- clear goals
- no distractions
- direct feedback
- continuously challenging



The Lens of Flow

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The Lens of Flow

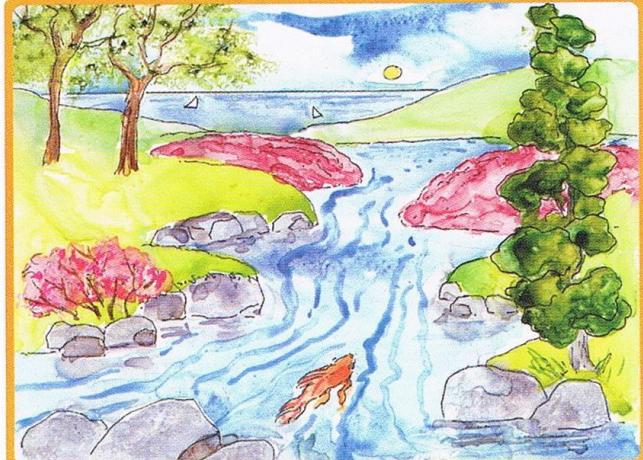


Illustration by Diana Patton

To use this lens, consider what is holding your player's focus.

Ask yourself these questions:



Lens #18

Does my game have clear goals, How can I fix that?

Are goals of the player the same as I intended?

Are there parts of the game that are distractions and not central to the actions?

Does my game supply a steady stream of easy/hard challenges?

Are the player's skills improving with game play? Does this matter?

The experience is in the player's mind

Empathy

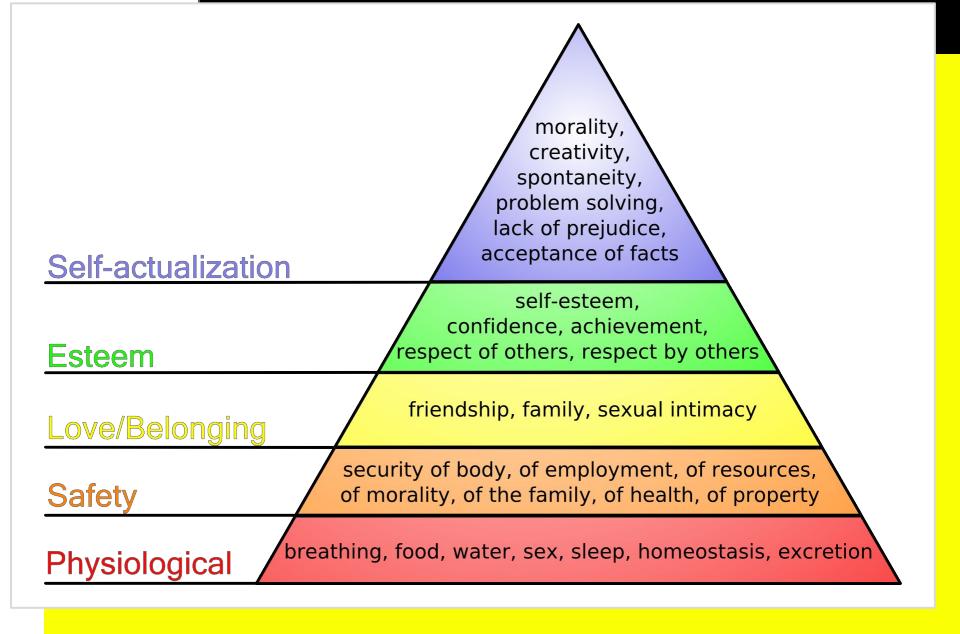
- Games are about problem solving
- Empathic projection is a useful method.

Imagination

- The humans are able to add details to any story by the use of imagination...
(Books)

Motivation

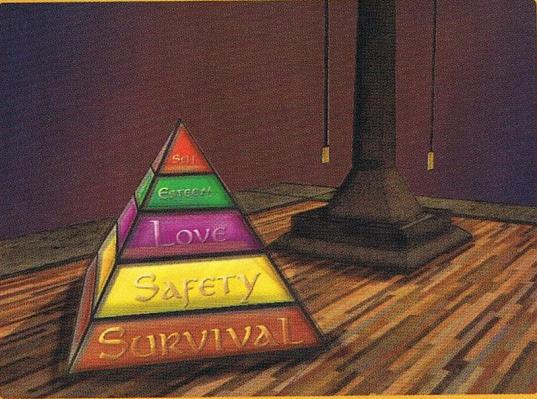
- The motivation of the player is dependent on its needs.
(Maslow hierarchy of needs)



The Lens of Needs

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The Lens of Needs



A colorful illustration of Maslow's hierarchy of needs pyramid. The pyramid is divided into four horizontal sections: Survival (orange), Safety (yellow), Love (purple), and Esteem (green). The top section has the word "Safety". The second section has the word "Survival". The third section has the word "Love". The bottom section has the words "Esteem" and "Safety" stacked vertically. The pyramid is set against a dark background with a wooden floor and a lamp in the background.

Illustration by Chuck Hoover

To use this lens, stop thinking about your game, and start thinking about what basic human needs it fulfills. Ask yourself these questions:

Lens #19

On which level of Maslow does my game operate (primarily)?

How can I make my game fulfill more of these needs?

How can it fulfill these even better?

The Lens of Judgment

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The Lens of Judgment



Illustration by Joseph Grubb

To decide if your game is a good judge
of the players,
ask yourself these questions:

Lens #20

What does my game judge about the player?

How does it communicate this judgment?

Do players feel the judgment is fair?

Do they care about the judgment?

Does the judgment make them want to improve?

Game Theory

Focuses on the types of conflicts that exist in games and how players might respond to these conflicts.

- Applies to games with 2+ opponents
 - Characters controlled by player / NPC (AI controlled).
- Understanding the foundations of game theory ensures that the player is challenged when playing the game.
- These challenges are closely tied to the story's plot.

Zero-Sum

- **Players have completely opposing interests.**
 - Only one winner.
 - Involve only competitive behaviour.
 - Example: Chess.

Non Zero-Sum

- **Players do not have completely opposing interests.**
 - Involves “coopetition”: cooperation and competition.
 - Typical in MMOGs.
 - Example: Sometimes players (in competition) form temporal coalition to defeat other players.

Types of Challenges (1/2)

Game mechanics involve a series of challenges. (often related to the game's genre)

Explicit & Implicit

- **Explicit Challenge**

Intentional, immediate and (often) intense.

- Might involve exact timing (to jump, turn, etc.)

- **Implicit Challenge**

Emergent feature of the game.

- Determine how to divide resources, deploy units in strategy games, etc.

Perfect & Imperfect Information

- **Perfect information □ Logical challenge.**

Example: Chess.

- **Imperfect information □ Inference (appeal to curiosity).**

Example: Card games, mastermind.

Types of Challenges (2/2)

Game mechanics involve a series of challenges. (often related to the game's genre)

Intrinsic & Extrinsic Knowledge

- **Intrinsic**

Knowledge is gained from within the game world.

- Relies on the player's memory.

- **Extrinsic**

Appeals to general knowledge (from reality).

- Example: TIM (The Incredible Machine)

Pattern Recognition & Matching

- Automatic thinking to master the game.
(ex. Tetris)

Spatial Awareness

- Depends on the ability to understand spatial relationships to reach a destination.

Micromanagement

- Manage settings and actions associated to resources & characters.

Reaction Time

- Action games challenge the player's reaction time.

Challenges & Goals (1/2)

All challenges can be applied to specific goals within the game.

Advancement

- Each successive level might increase in difficulty and the player get more powerful.

Race

- Accomplishing something before another player. (Reaction time – Action games)

Puzzle-solving

- Applying mental processes to solve riddles and cryptic codes. (Puzzle & Adventure)

Exploration

- Moving into new areas and seeing new things. (Adventure games & RPG)

Conflict

- Disagreement or combat between characters. (provides dramatic tension)

Capture

- Taking or destroying something of an opponent without being captured or killed. (action games & RPG)

Chase

- Catching or eluding an opponent.



Challenges & Goals (2/2)

All challenges can be applied to specific goals within the game.

Organizing

- Arranging items in a game in a particular order.
(spatial and pattern matching techniques –
Puzzle games)

Escape

- Rescuing items or players and taking them to safety. (analytical reasoning and resource management)

Taboo

- Getting the competition to “break the rules”.
(physical or emotional stamina)

Construction

- Building and maintaining objects. (Resource management – Simulation)

Solution

- Solving a problem or puzzle before/more accurately than the competition. (Analytical reasoning & knowledge application – Adventure games)

Outwit

- Applying intrinsic or extrinsic knowledge to defeat the competition.

Game Mechanics

The game mechanics are the core of the game.

Jesse Schell taxonomy:

Mechanic 1: Space

Mechanic 2: Objects, attributes and states

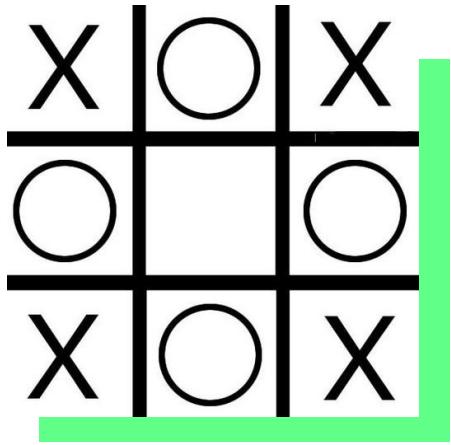
Mechanic 3: Actions

Mechanic 4: Rules

Mechanic 5: Skill

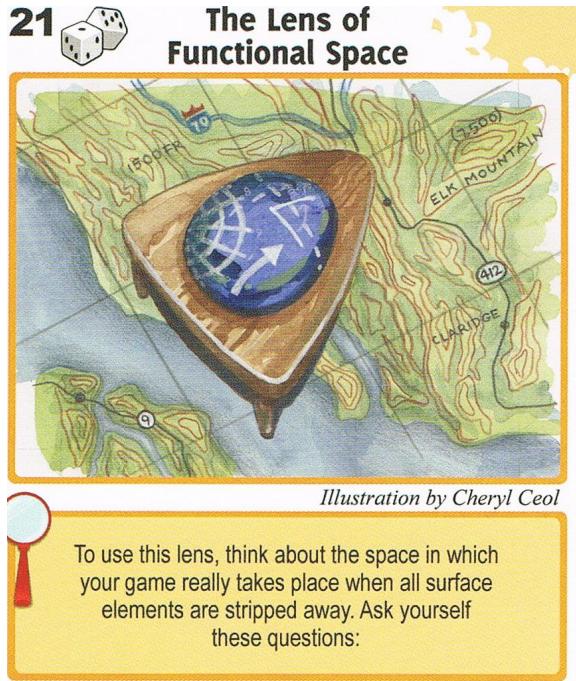
Mechanic 6: Chance

Mechanic 1: Space



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The Lens of Functional Space



Lens #21

Is the space of this game discrete or continuous?

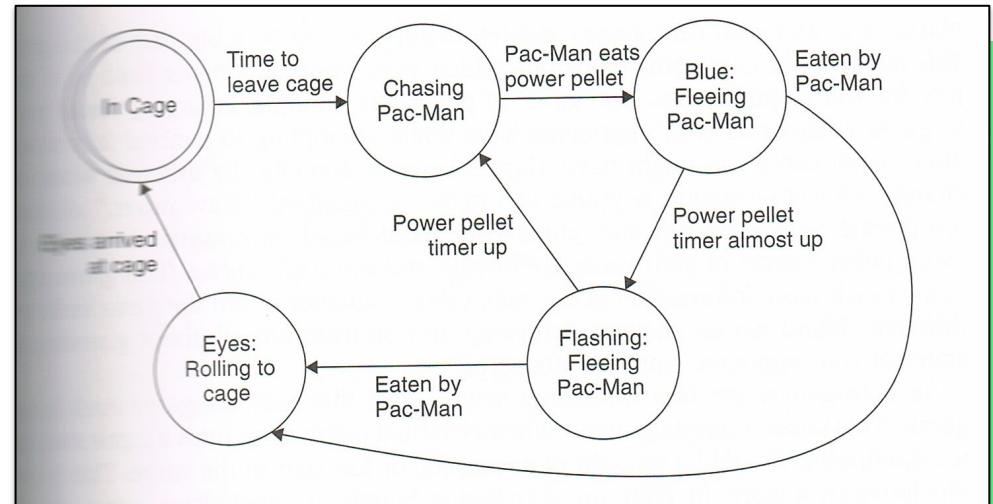
How many dimensions does it have?

What are the boundaries of the space?

Are there sub-spaces? How are they connected?

Is there more than one useful way to abstractly model the space of this game?

Mechanic 2: Objects, attributes and states



The Lens of Dynamic State

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The Lens of Dynamic State

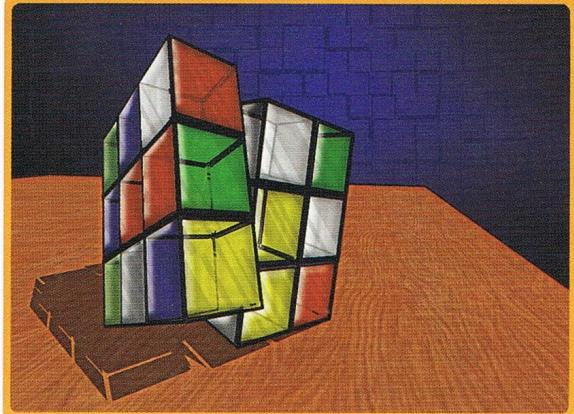


Illustration by Chuck Hoover

To use this lens, think about what information changes during your game, and who is aware of it. Ask yourself these questions:



Lens #22

What are the objects of my game?

What are their attributes?

What are the possible states for each of the attributes? What causes change?

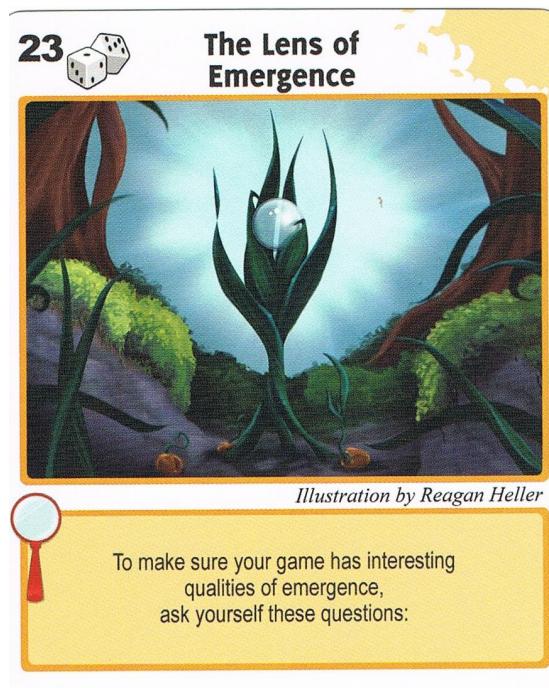
What state is known to the game ONLY?

What state is known by all the players?

What state is known by some or even one?

Would changing who knows change the game?

The Lens of Emergence



Lens #23

How many verbs do my players have?

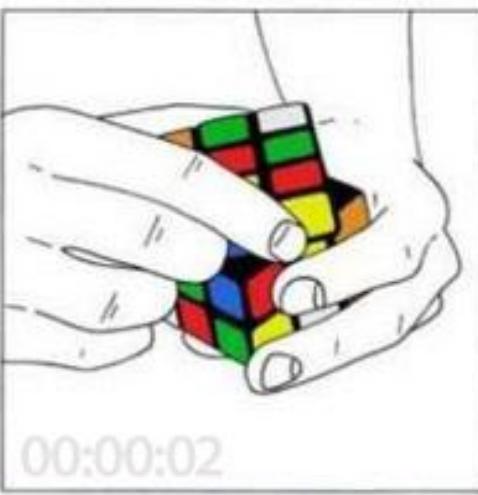
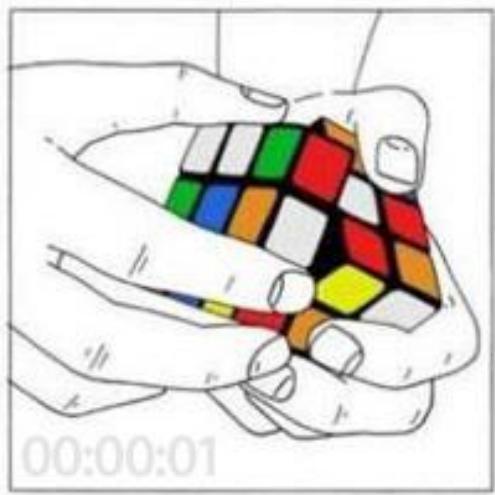
How many objects can each player act on?

How many ways can players achieve their goals?

How many subjects do the players control?

How side effects change constraints?

Mechanic 3: Actions



The Lens of Action

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The Lens of Action



Illustration by Nick Daniel

To use this lens, think about what your players can do and what they can't, and why.
Ask yourself these questions:



Lens #24

What are the operational actions of the game?

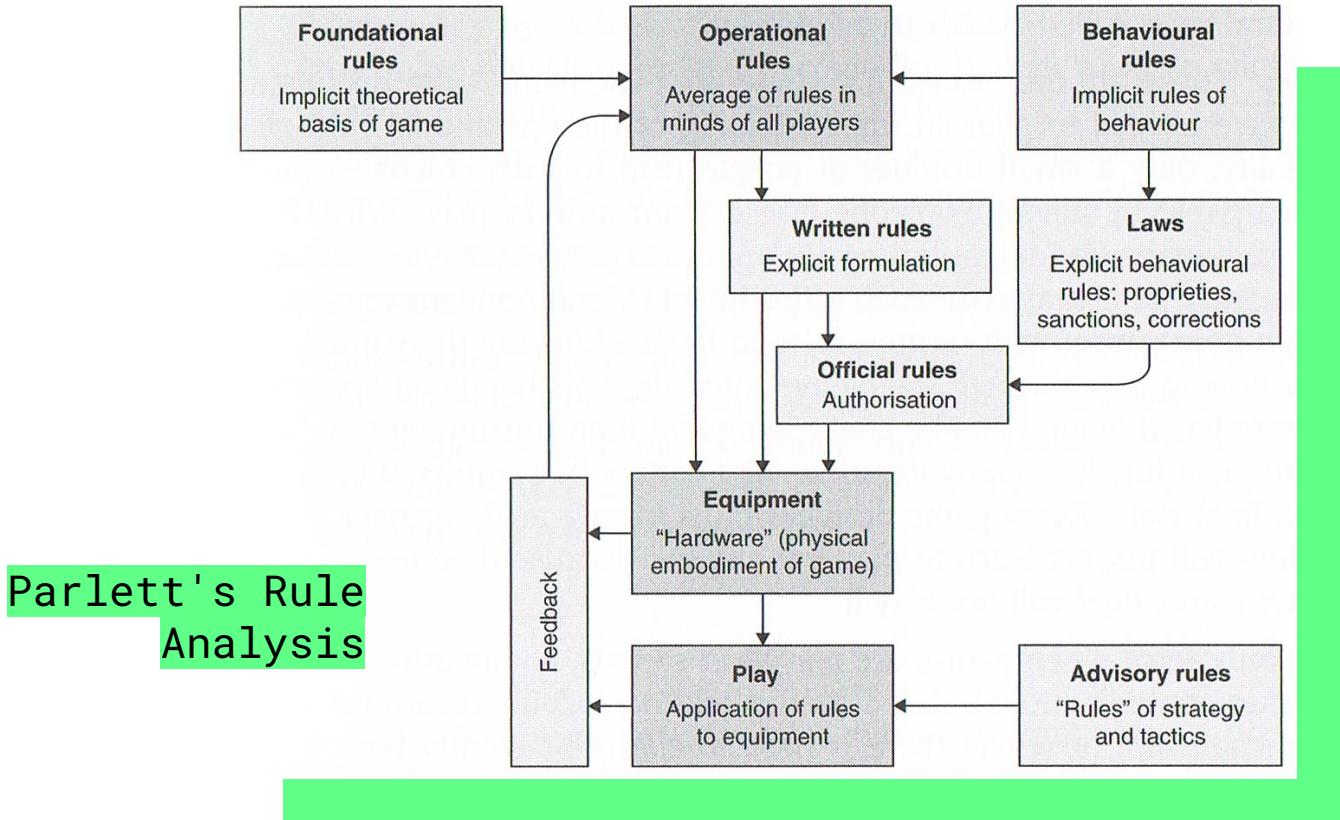
What are the resultant actions?

What other resultant actions would work in my game?

Is there balance between the two?

What might players wish they could do but cannot?

Mechanic 4: Rules



Goals

Game goals should have three main qualities

Concrete

- Players can clearly state what they should achieve.

Achievable

- Players must feel they have a chance to achieve the goals.

Rewarding

- Players should be effectively rewarded when achieving the goals.



Mechanic 5: Skill

Player must have the skills to overcome the challenges and achieve the goals:

Physical skills

- Envolve strength, dexterity, coordination, etc...

Mental skills

- Include memory, observation and puzzle solving.

Social skills

- The ability to communicate and socialize.



Mechanic 6: Chance

Chance generates uncertainty and surprise:

- Movement;
- Trajectories;
- Enemies;
- Behaviors;
- Environment,
- Etc...



The Lens of Chance

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The Lens of Chance

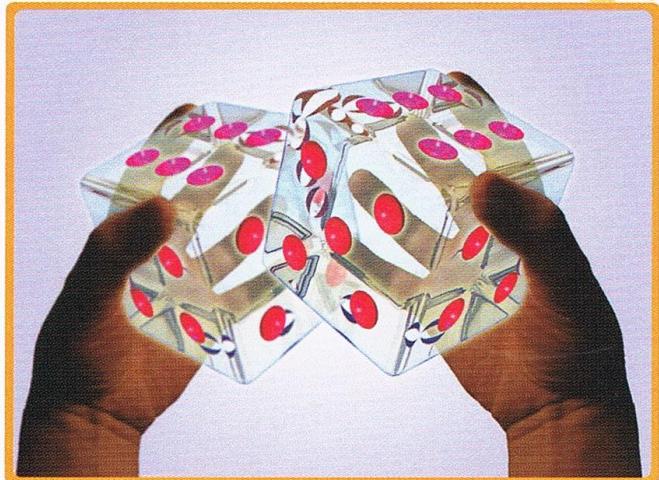


Illustration by Joshua Seaver



To use this lens, focus on the parts of your game that involve randomness and risk, keeping in mind that those two things are not the same.

Ask yourself these questions:

Lens #29

What in my game is truly random? What parts just feel random?

Does the randomness give the players positive feelings of excitement and challenge, or negative feelings of hopelessness and lack of control?

Would changing my probability distribution curves improve my game?

Do players have the opportunity to take interesting risks?

What is the relationship between chance and skill in my game?

Balance

Players should perceive the game as consistent, fair & FUN

Consistent challenges

- Players should experience gradually more difficult challenges.

Perceivably fair playing experiences

- Players shouldn't be "doomed" from the start through their mistakes.

Lack of stagnation

- Players should never get stuck with no way to go on.

Lack of trivial decisions

- Players should be required to make only important decisions in the game, even in games that incorporate micromanagement.

Difficulty levels

- Players should have a choice of difficulty or the level should adjust to the players ability throughout the game.



The Lens of Challenge

31  **The Lens of Challenge**

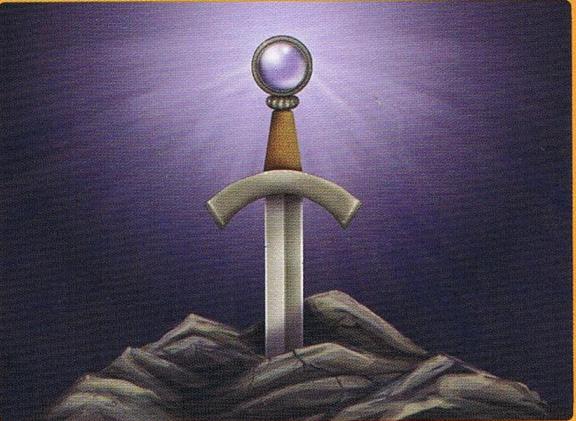


Illustration by Reagan Heller

 Challenge is at the core of almost all gameplay. You could even say that a game is defined by its goals and challenges. When examining the challenges of your game, ask yourself these questions:

Lens #31

What are the challenges in my game?

Are they too easy, too hard or just right?

Can my challenges accommodate a wide variety of skill levels?

How does the level of challenge increase as the player succeeds?

Is there enough variety in the challenges?

What is the maximum level of challenge in my game?

The Lens of Reward

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The Lens of Reward



Illustration by Elizabeth Barndollar

Ask these questions to determine if your game is giving out the right rewards in the right amounts at the right times:

Lens #40

What rewards is my game giving out now? Can I give out others as well?

Are players excited when they get rewards in my game, or are they bored by them? Why?

Getting a reward you don't understand is like getting no reward at all. Do my players understand their rewards?

Are the rewards my game gives out too regular? Can they be given out in a more variable way?

How are my rewards related to one another? Is there a way they could better connected?

How are my rewards building? Too fast, too slow, just right?

Game Mechanics Checklist(1/2)

- Gameplay includes all the player experiences during the interaction with a game.
- Game mechanics is about the rules of play, including victory conditions and loss conditions.
- The experience is in the player's mind
 - A game is a simplification of reality that is easily handled by the player.
- The state of flow
 - Flow activities must manage to stay in the narrow margin of challenge that lies between boredom and frustration.
- Game theory focuses on the types of conflicts that exists in games and how players might respond to these conflicts.

Challenges

Game mechanics involve a series of challenges

Often related to the game's genre.

All challenges can be applied to specific goals within the game.

Game Mechanics Checklist(2/2)

- Players should perceive the game as consistent, fair & FUN.
- Balance should be provided either statically (starting conditions) and dynamically (as the game progresses).
 - Balance should be associated with the rules of the game.
 - But as the game progresses a dynamic balance should emerge.

Jesse Shell

Jesse Shell taxonomy

Mechanic 1: Space

Mechanic 2: Objects, attributes
and states

Mechanic 3: Actions

Mechanic 4: Rules

Mechanic 5: Skill

Mechanic 6: Chance

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