

# Game Design Theory

## Part 1: Design and Player Experience

Dr Robert Zubek, SomaSim LLC

CS 377: Game Development Studio  
Winter Quarter 2024  
Northwestern University



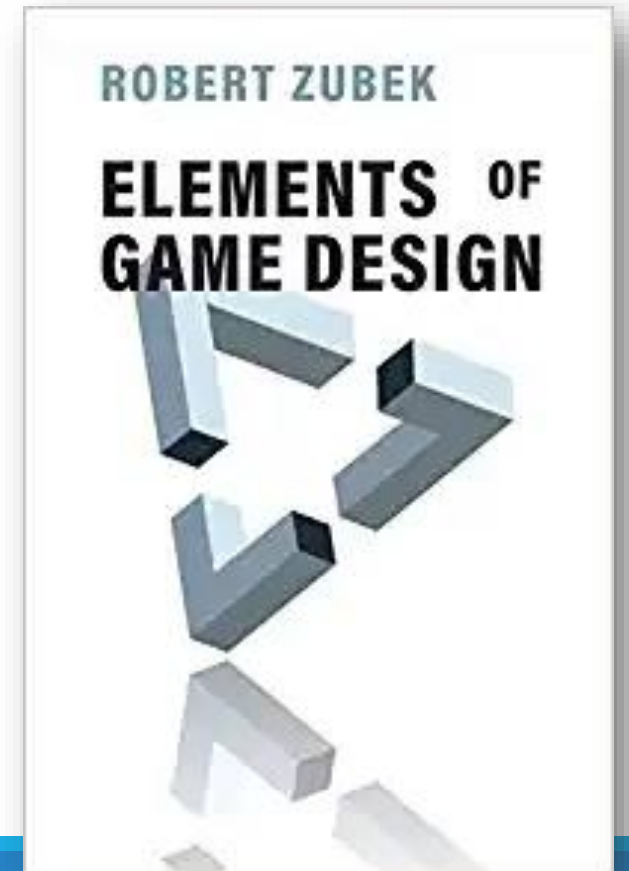
# So how do we make games?

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We all have games we like to play

We all have ideas for  
what we like  
what we'd like to play  
what we'd like to make

Where do we go from here?





**I want to  
make a game  
about XYZ...**

# Game high concept

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## 1. Core game idea

- What is the game about?
- What is the player doing?
- Why are they doing it?
- What is the challenge?

*(Similar to advice for writers:  
who is the speaker, what are they saying,  
why are they saying it, etc.)*

### CORE GAME IDEA

What is the game?  
Who is the player?  
Why? How?

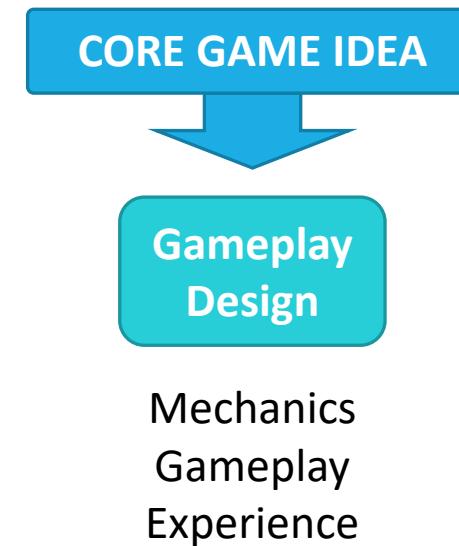
# Gameplay design

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## 1. Core Game Idea

## 2. Gameplay Design

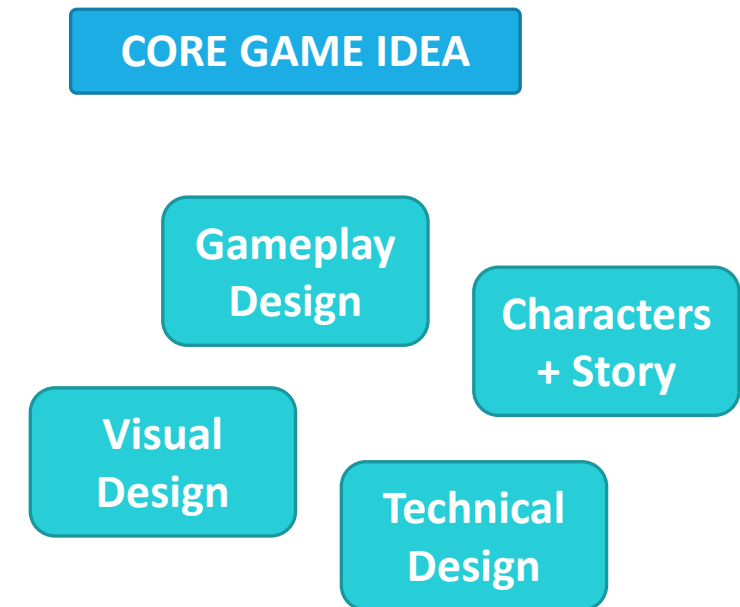
- Mechanics
  - *Rules, resources, units, weapons...*
- Gameplay
  - *How the game + player behave over time*
- Experience
  - *How that makes the player feel*



# Game design

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1. Core Game Idea
2. Gameplay Design
3. Game Design
  - + Art
  - + Story
  - + Tech



# Game design

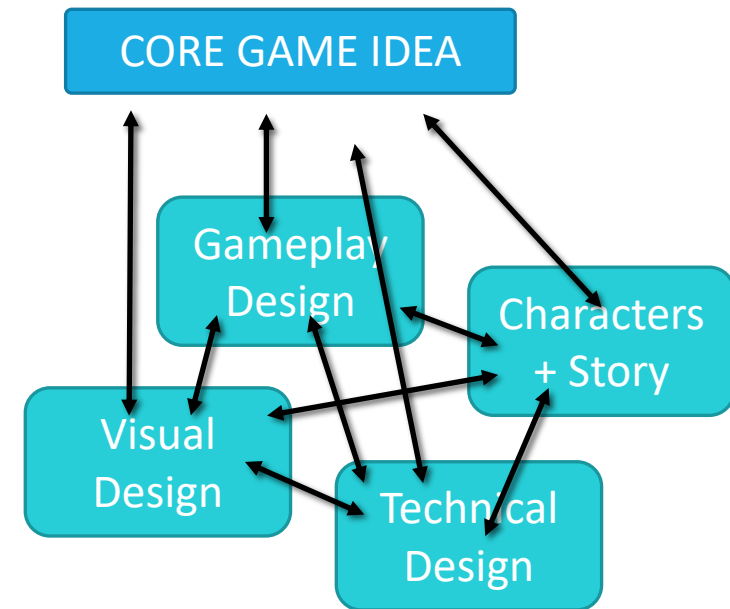
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1. Core Game Idea

2. Gameplay Design

3. Game Design

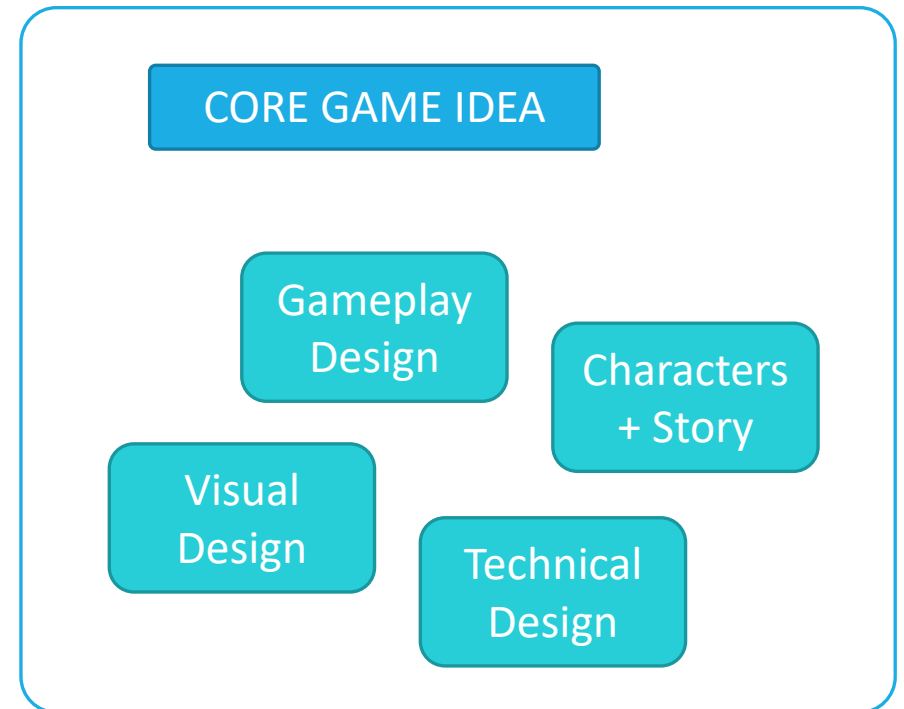
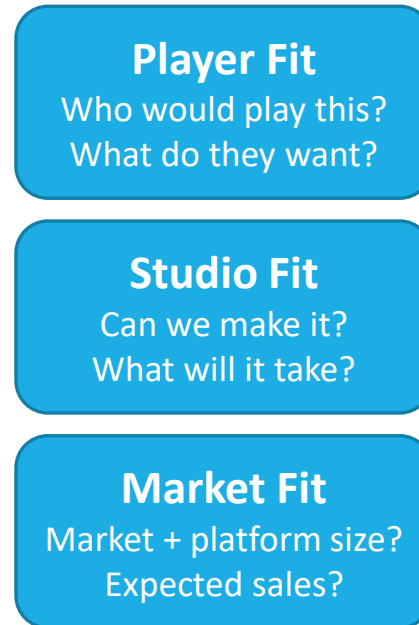
- + Art
- + Story
- + Tech
- All intertwined of course



# Product design

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1. Core Game Idea
2. Gameplay Design
3. Game Design
4. Product Design
  - Player fit
  - Studio fit
  - Market fit
  - Cost and budget

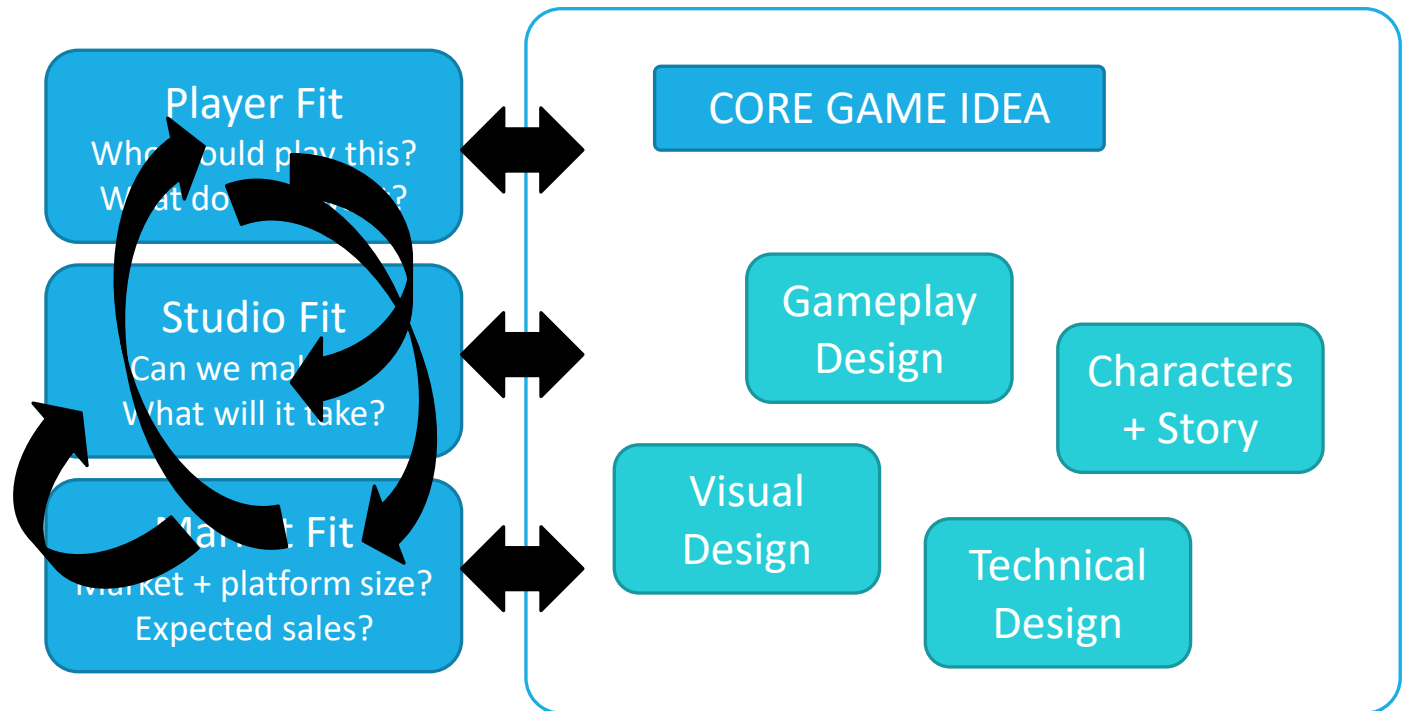




# Product design

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1. Core Game Idea
2. Gameplay Design
3. Game Design
4. Product Design
  - Player fit
  - Studio fit
  - Market fit
  - Cost and budget



# Our plan

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Today:

- Part 1: Player experience

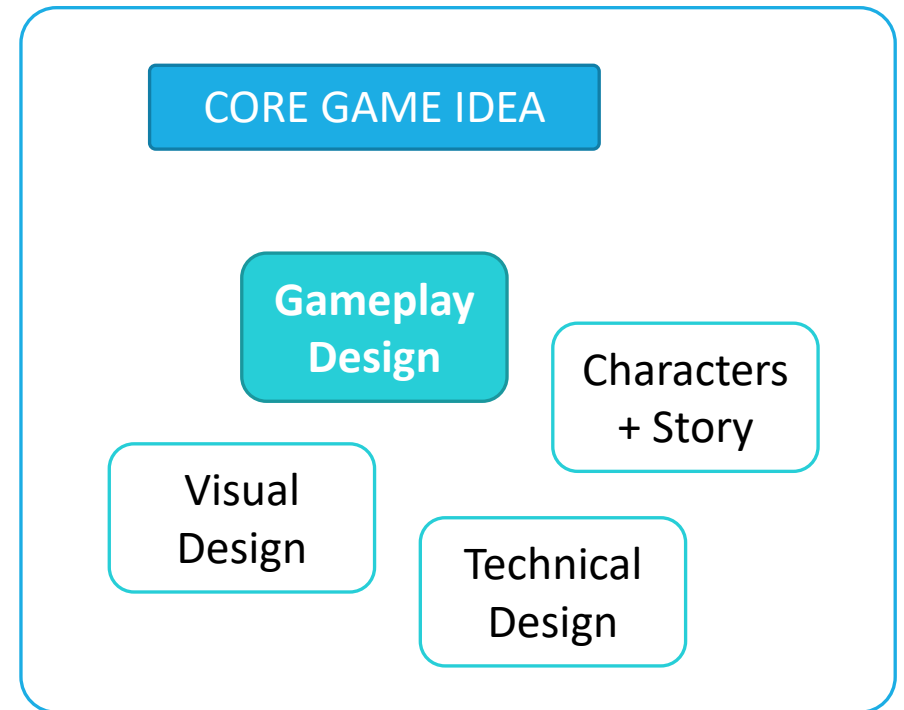
Then:

- Part 2: Mechanics and game pieces

Future:

- Part 3: Systems and loops

(Visual / Character design not part of this class 😊)



# How do we design gameplay?

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Start out by thinking analytically

- What are games
- What makes them enjoyable
- How do we play them
- How do they decompose into smaller pieces



And then do a whole lot of building and prototyping :)

# How do we design gameplay?

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**GAMES  $\neq$**



(Athena, which sprang out fully formed from the head of Zeus)



**I want to  
make a game  
about XYZ...**

**Should I figure out  
what “fun” is first?**

**Need more  
than that**



**I want to  
make a game  
about XYZ...**

**Should I figure out  
what “fun” is first?**

**Should I analyze  
rules and game  
pieces first?**

**Together?  
Maybe...**

# Main model

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We'll look at game design on three levels

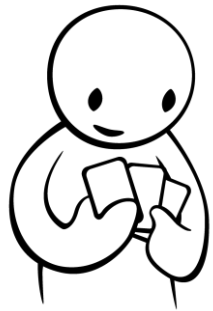
- Mechanics and systems
- Gameplay
- Player experience

See: *Elements of Game Design* chapters 1 and 2

# Games

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Gameplay is an **experience** created by the **designer** for the **player**



player



designer



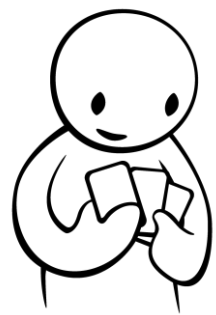
# Games

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Gameplay is an experience

Player can't talk to the designer

- They can only interact with the game itself



player



designer

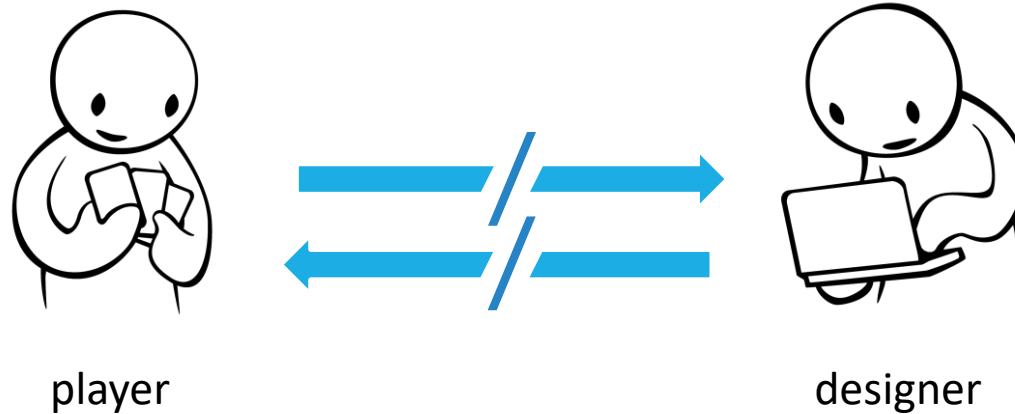
# Games

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Gameplay is an experience

Player can't talk to the designer

Designer can't talk to the player

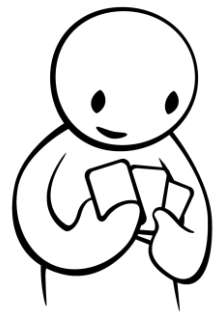


# Games

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Gameplay is an experience

... mediated by the game artifact



player



designer

# Example: Poker

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What do players like about it?

Fun  
Winning  
Socializing  
Etc.

# Example: Poker

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What do players like about it?

What are the basic game elements?

Cards  
Money  
Rules  
Etc.

Fun  
Winning  
Socializing  
Etc.

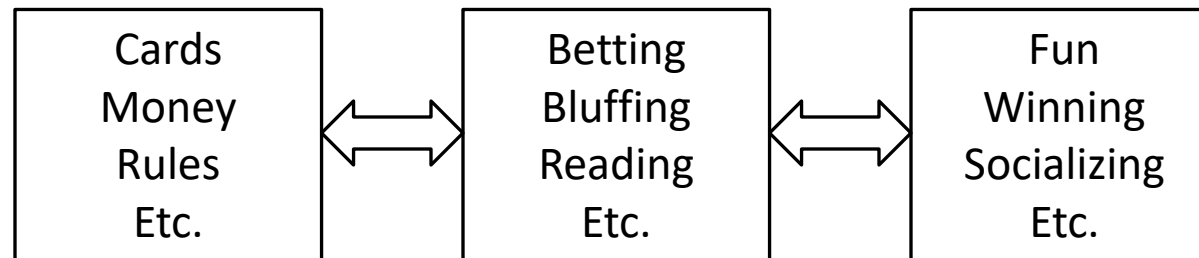
# Example: Poker



What do players like about it?

What are the basic game elements?

What do you do with game elements, to produce this kind of fun?



# MDA model

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**Mechanics / Dynamics / Aesthetics**  
(Hunicke, LeBlanc, Zubek 2004)

Like color theory for games

- Very broad
- Immediately useful
- Starting point: not end all and be all

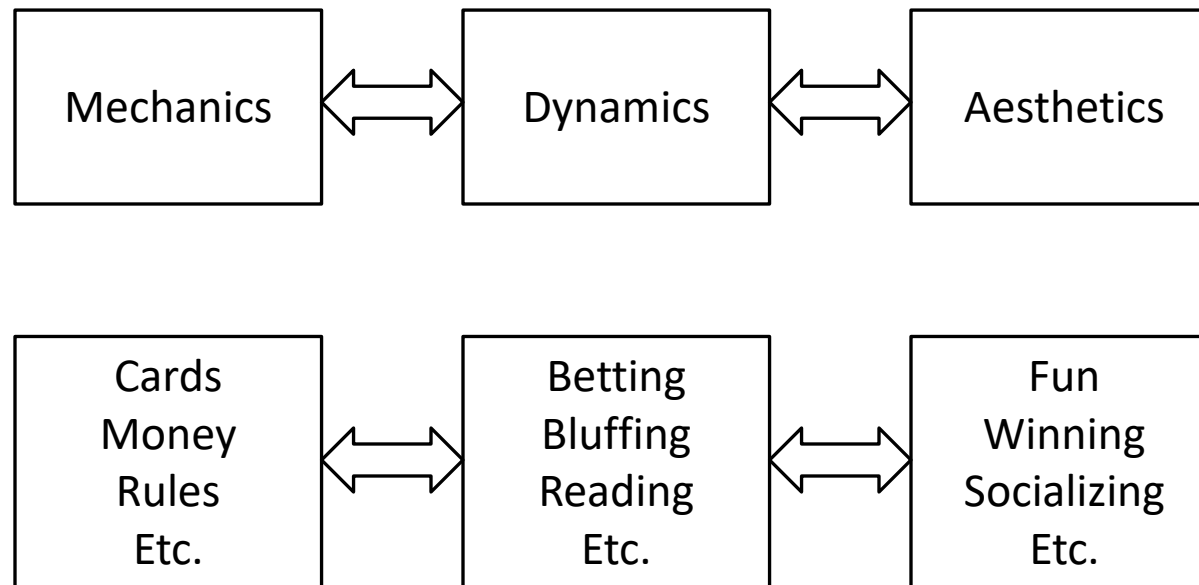
You probably read MDA in CS 376. If not, read it now!

- [Link in the syllabus](#)

# Example: Poker

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Translated to MDA





# Note on terminology

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Practicing designers don't use this kind of M/D/A terminology

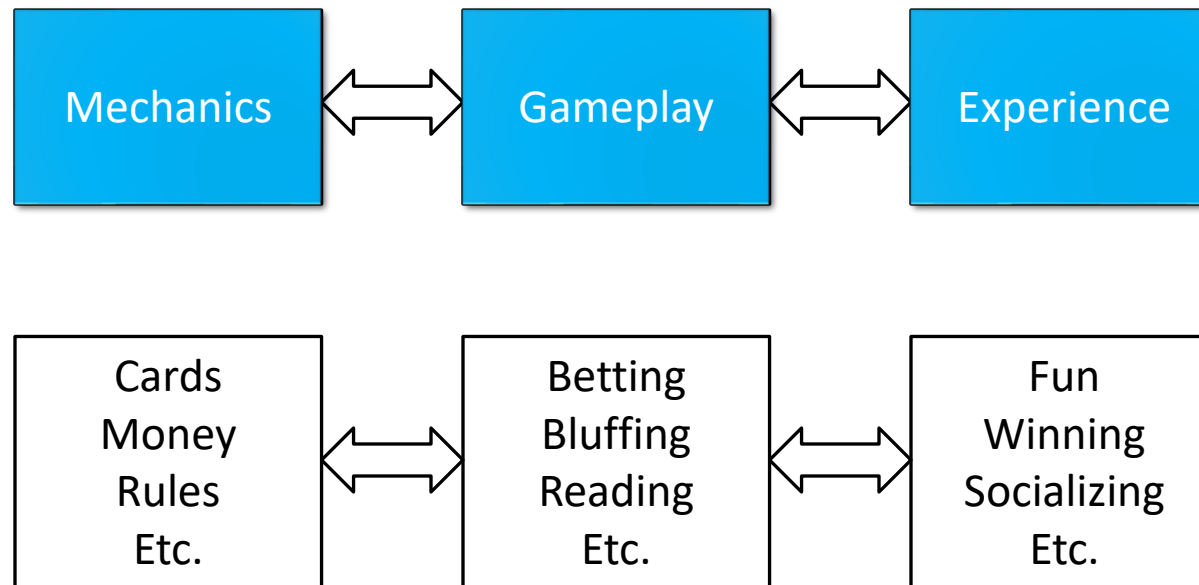
- *Nobody says "let's adjust the dynamics so that ..." or "the aesthetics of this game are ..."*

Practicing designers talk about the *gameplay*, and how that affects *player experience*

Let's use **contemporary terminology** instead

# Example: Poker

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# Our model

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## Mechanics

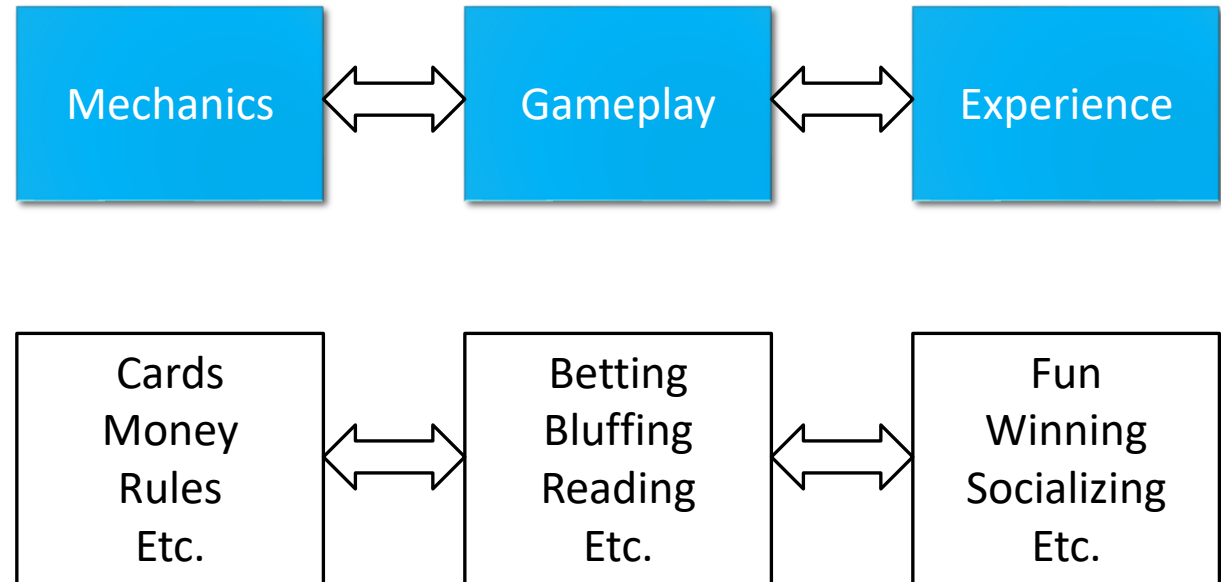
- Game elements, rules, code
- Player's inputs and outputs

## Gameplay

- How the game unfolds over time
- Activity / behavior/ patterns of play

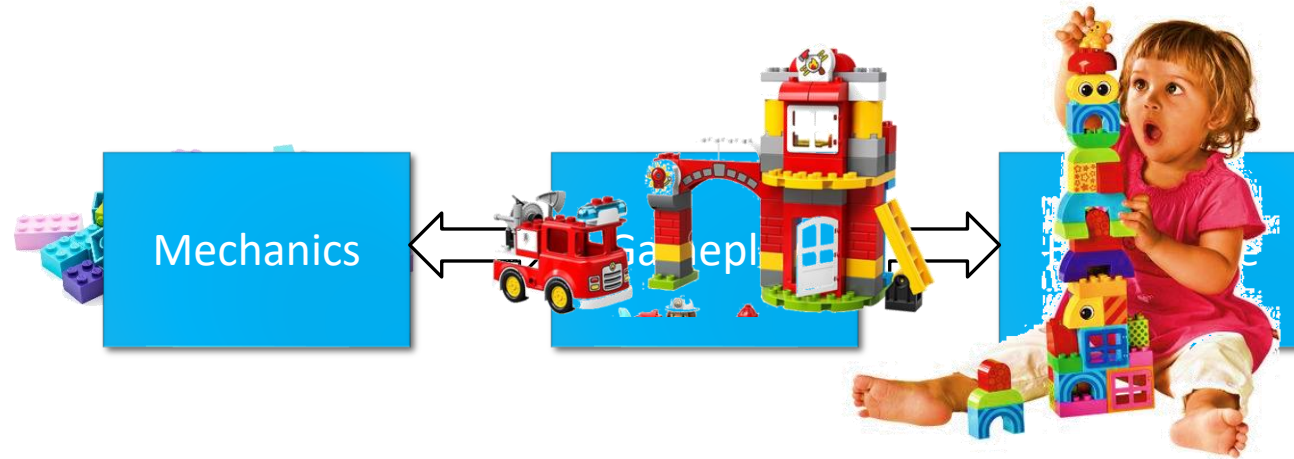
## Experience

- The enjoyable experience
- The feels / the fun



# Our model

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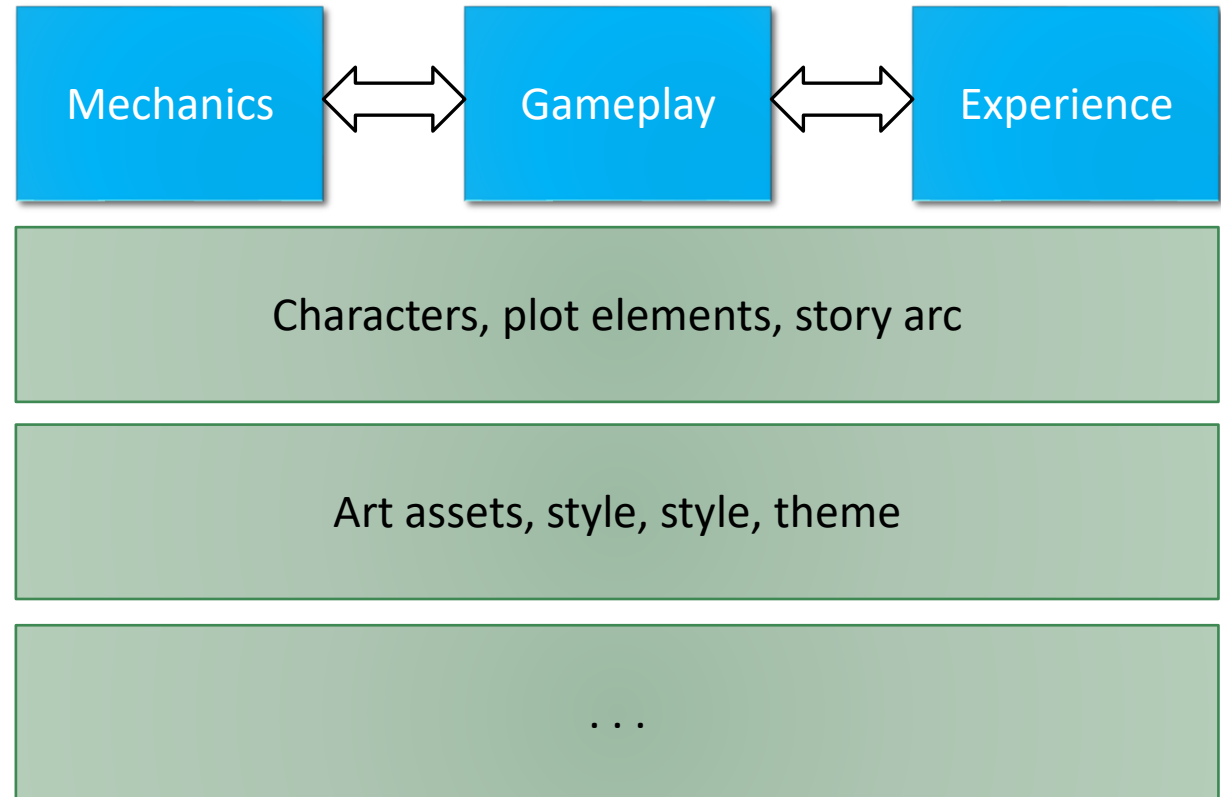
# Gameplay ...is not the only thing

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Note: this model only talks about things connected to gameplay

Other aspects also influence player's experience of the game:

- Art style, setting, visuals
- Story, characters, plot
- Etc.



# Designer's challenge

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The designer aims to create this experience...



... but can only design and distribute these

# Designer's challenge

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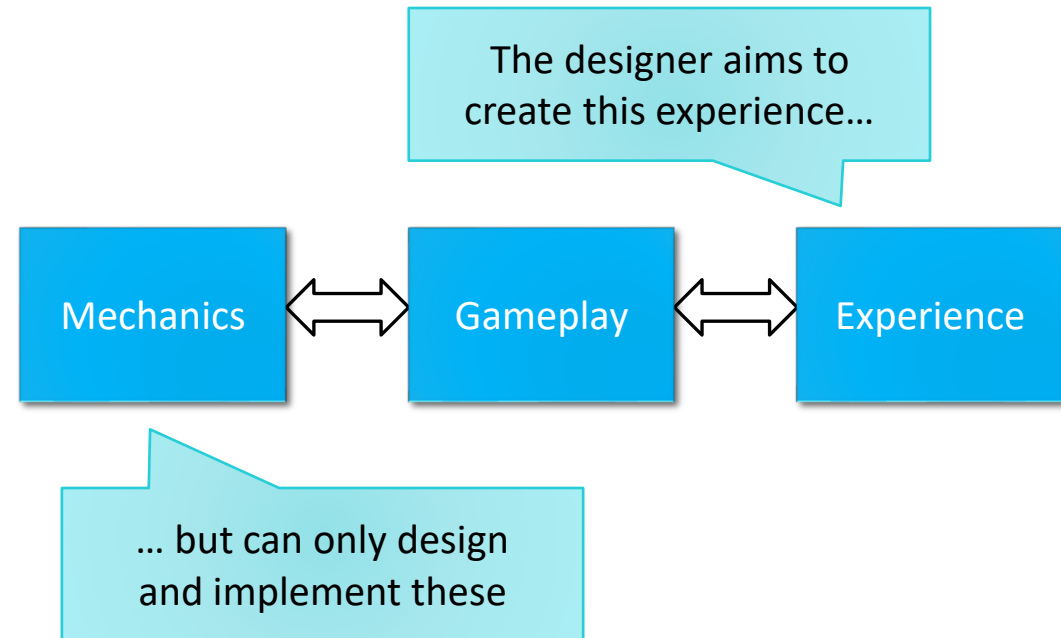
## Second-degree design challenge

- Create entire world and ruleset which creates trajectories through the world which are enjoyable

## Compare to literature, movies, etc.

- Create a single trajectory through the world which is enjoyable

A new medium!



# Designer's challenge

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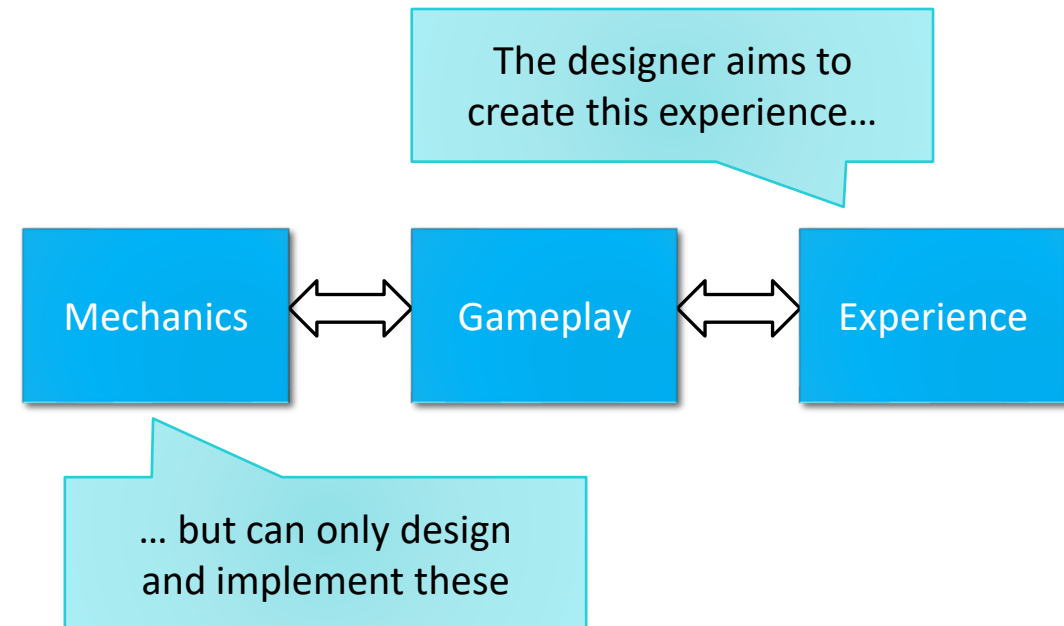
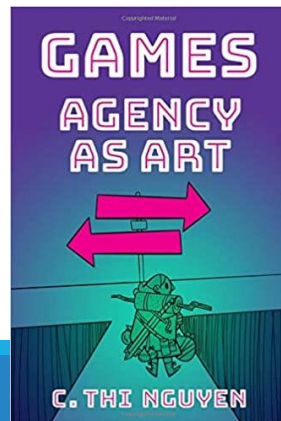
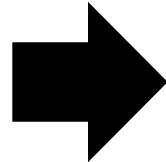
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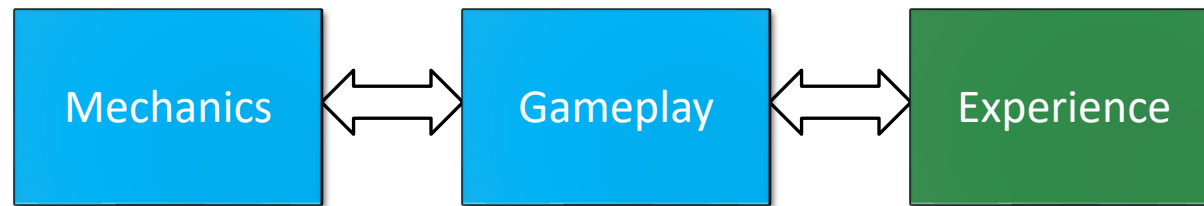
A new medium!





# Roadmap

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Today

- Experience

Next time

- Gameplay
- Mechanics

# Player Experience

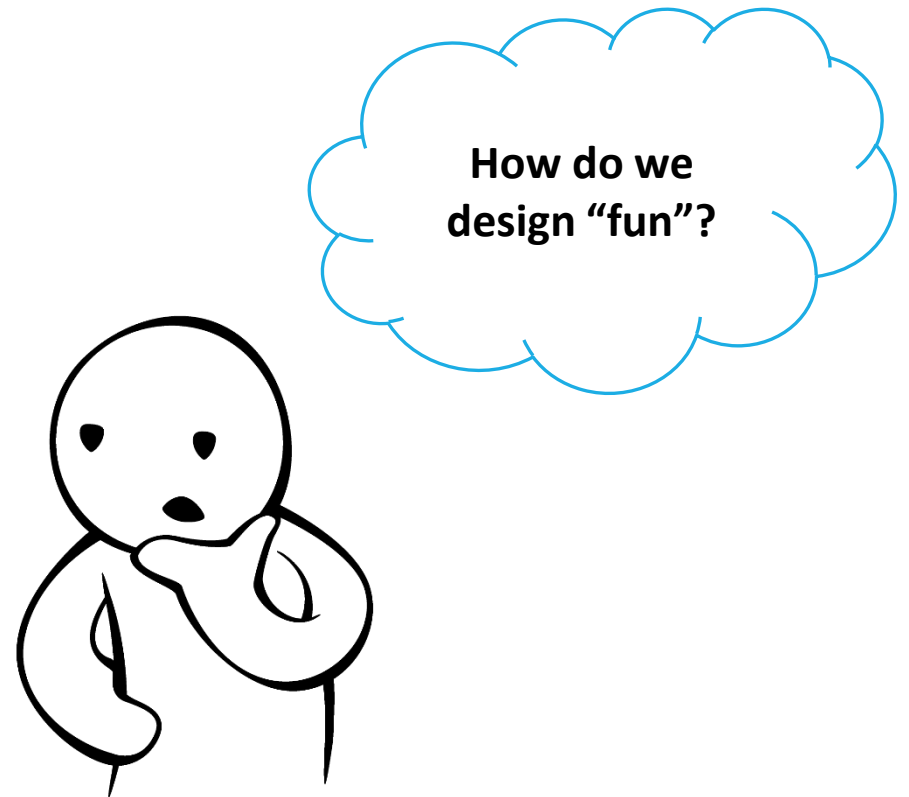
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# Player Experience

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Player's feeling of "fun"

- "This game is awesome!"
- "This game sucks! It's not fun!"



# Player Experience

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Player's feeling of "fun"

- "This game is awesome!"
- "This game sucks! It's not fun!"

**Let's be more specific than "fun"!**

- It's an awfully *vague* word
- Everyone has a different idea of "what's fun"
- Are there better terms?

# Example

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Pick your favorite game

- What makes this game fun to play?
- Are some elements central and necessary for it to be fun?
- Are there other games that are similar? And how?
- What makes that entire category of games fun?

# Types of Experience

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Desire for challenge / frustration / “fiero”





# Types of Experience

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Desire for challenge / frustration / “fiero”  
Desire for action / adrenaline rush



# Types of Experience

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Desire for challenge / frustration / “fiero”  
Desire for action / adrenaline rush  
Desire for learning / figuring things out

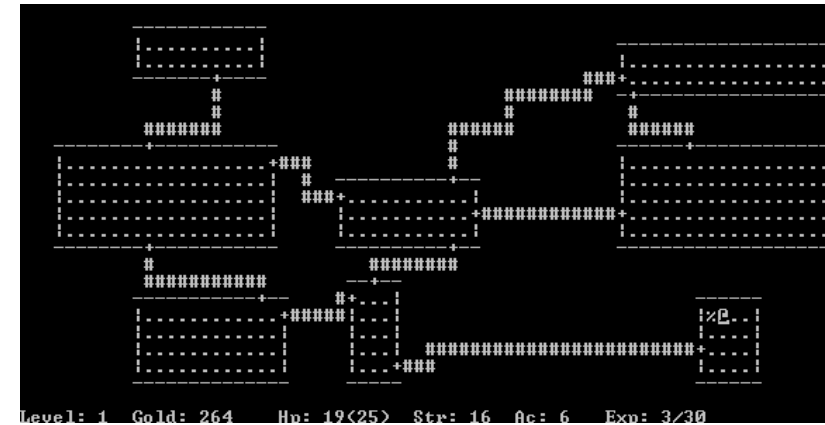




# Types of Experience



Desire for challenge / frustration / “fiero”  
Desire for action / adrenaline rush  
Desire for learning / figuring things out  
Desire to explore unknown worlds



# Types of Experience

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Desire for challenge / frustration / “fiero”

Desire for action / adrenaline rush

Desire for learning / figuring things out

Desire to explore unknown worlds

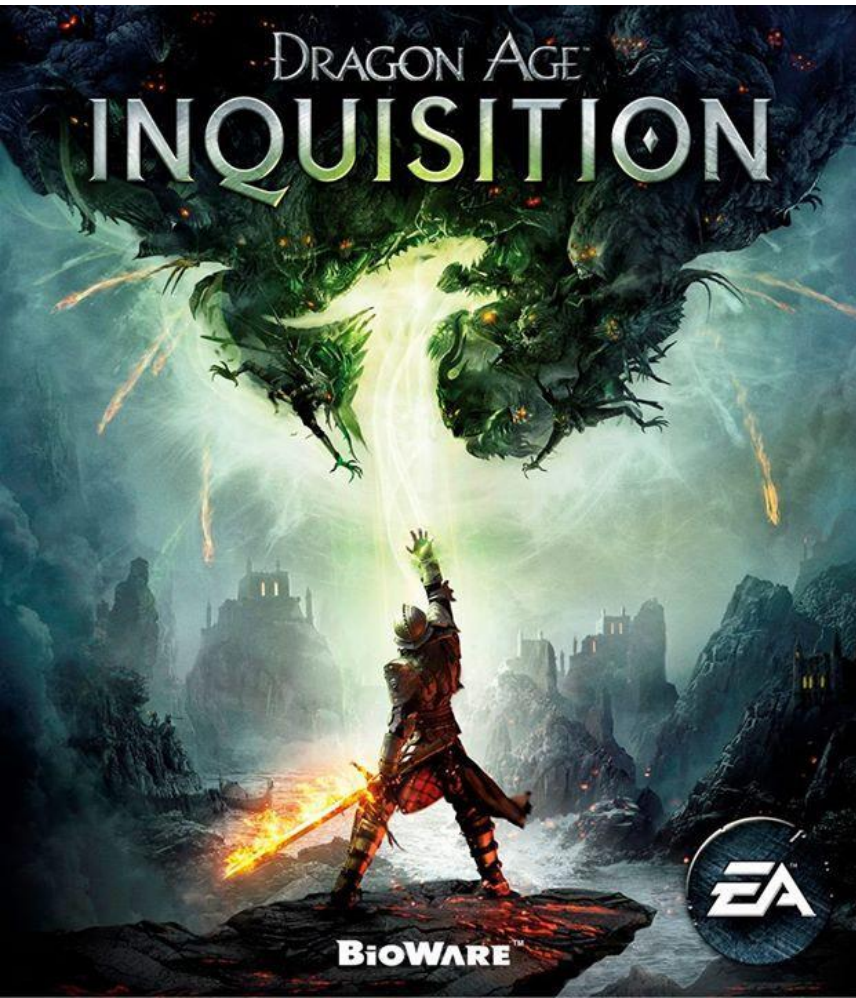
Desire for fantasy / be someone else





# Types of Experience

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Desire for challenge / frustration / “fiero”  
Desire for action / adrenaline rush  
Desire for learning / figuring things out  
Desire to explore unknown worlds  
Desire for fantasy / be someone else  
Desire for story / empathy / catharsis



# Types of Experience

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Desire for fear / disgust / paranoia





# Types of Experience

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Desire for challenge / frustration / “fiero”  
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Desire for story / empathy / catharsis  
Desire for fear / disgust / paranoia  
Desire for humor / cuteness



# Types of Experience

---



Desire for challenge / frustration  
Desire for action / adrenaline  
Desire for learning / figuring things out  
Desire to explore unknown worlds  
Desire for fantasy / be someone else  
Desire for story / empathy / connection  
Desire for fear / disgust / paranoia  
Desire for humor / cuteness  
Desire to feel joyous





# Types of Experience

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Desire for challenge / frustration / “fiero”  
Desire for action / adrenaline rush  
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Desire for humor / cuteness  
Desire to feel joyous  
Desire to create / express yourself



# Types of Experience

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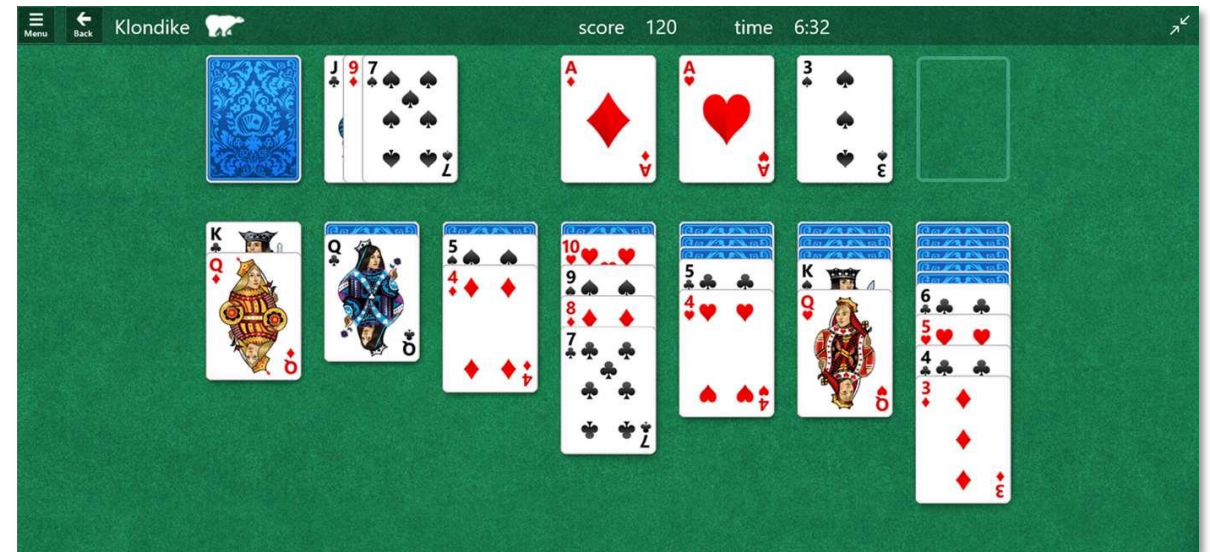
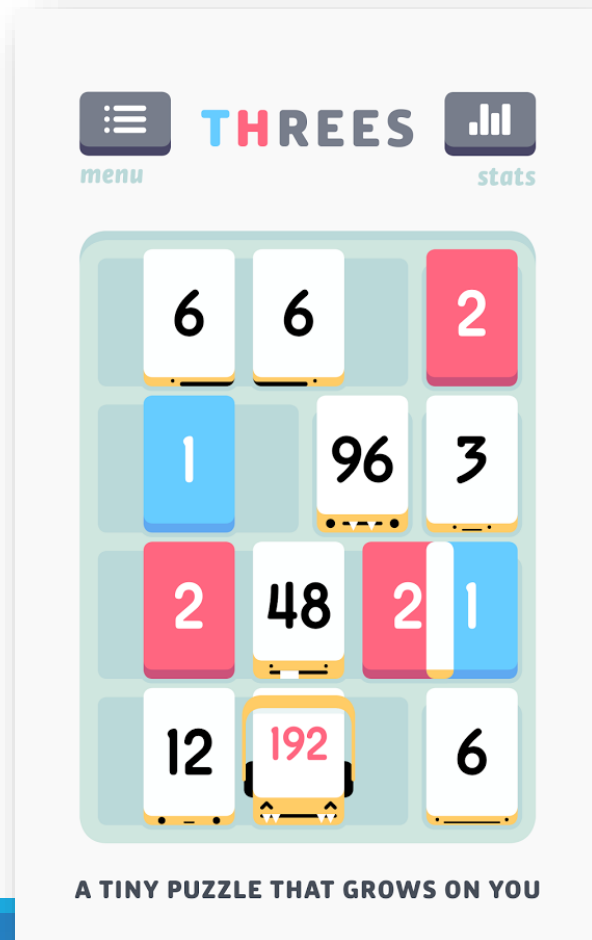


Desire for challenge / frustration  
Desire for action / adrenaline rush  
Desire for learning / figuring things out  
Desire to explore unknown worlds  
Desire for fantasy / be someone else  
Desire for story / empathy / catharsis  
Desire for fear / disgust / paranoia  
Desire for humor / cuteness  
Desire to feel joyous  
Desire to create / express yourself  
Desire for sensory pleasure





# Types of Experience



Desire to create / express yourself  
Desire for sensory pleasure  
Desire for repetition / past time

# It all depends on the player

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Different people like different things

- Eg. maybe I'm really into story driven RPGs...

Different people will react differently to the same gameplay elements

- Eg. ...but just because I like story doesn't mean that you'll like it too

There is no “objectively good” game design –  
just good *in context* of particular players and their motivations

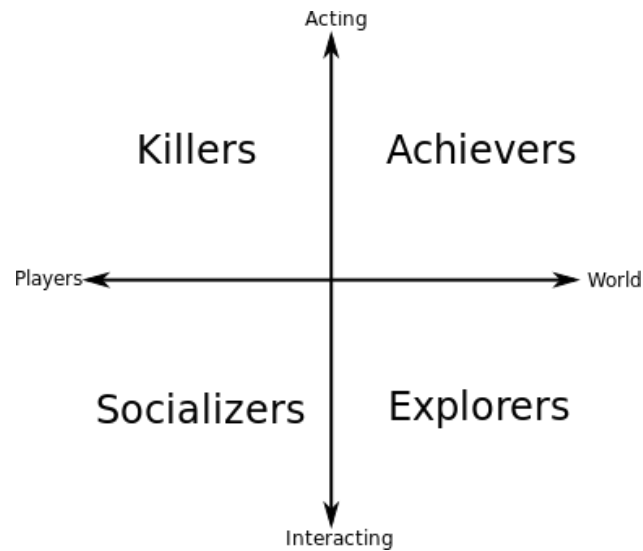


# Player enjoyment theories

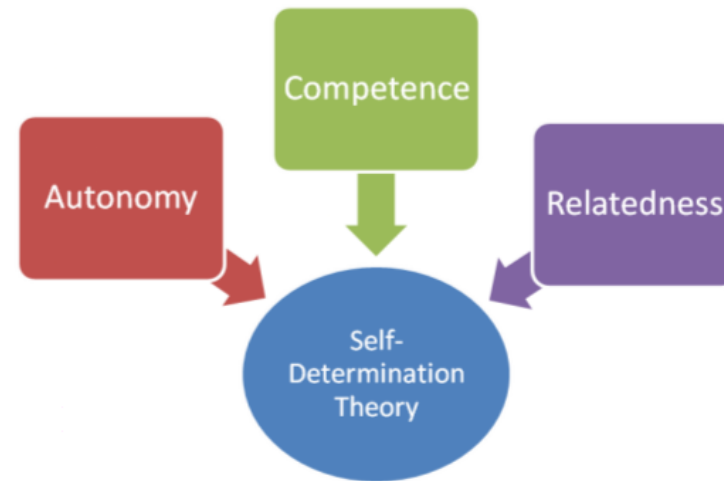
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Some theories:

1. Bartle MUD player types [\[link\]](#)



2. Self-determination Theory (Deci & Ryan) [\[link\]](#)



# Personality modeling: Five Factor

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“Gold standard” for psychological personality tests

Statistical analysis finds five independent axes:

- Openness to experience vs cautiousness
- Conscientiousness vs lack of care
- Extraversion vs introversion
- Agreeableness vs detachment
- Neuroticism vs emotional stability

(Note: it's *much better* than Meyer-Briggs :) )

# Marketing approach: user stories

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Consider your typical players and write stories about who they are and why they would like to play your game

- Ideally: by surveying existing players
- More commonly: by imagining players :)

*Somewhat useful*, but more as a marketing tool not design tool

John Doe, male, mid-20s

Occupation: assistant manager, retail

Plays: Console and PC, evenings after work, ~1-2h nightly

Favorite games: Assassin's Creed, The Witcher, World of Tanks, FIFA

Why are they favorite:

Good action, adrenaline rush

Winning is important

Friends at work also play and they compare tactics

# Player motivations studies

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Very interesting surveys by Nick Yee at Quantic Foundry (QF) that tries to match up:

1. Gamer motivation profiles (what games they like to play)
2. Personality surveys (using the Big 5 Model)

Presented at GDC 16, CHI 16, GDC 2020, etc

# Player motivations

Started by collecting  
12 different possible  
motivations from  
existing literature

Then asked players to  
rate their preference  
for each of them



Action "Boom!"	Social "Let's Play Together"	Mastery "Let Me Think"	Achievement "I Want More"	Immersion "Once Upon a Time"	Creativity "What If?"
<b>Destruction</b> Guns. Explosives. Chaos. Mayhem.	<b>Competition</b> Duels. Matches. High on Ranking.	<b>Challenge</b> Practice. High Difficulty. Challenges.	<b>Completion</b> Get All Collectibles. Complete All Missions.	<b>Fantasy</b> Being someone else, somewhere else.	<b>Design</b> Expression. Customization.
<b>Excitement</b> Fast-Paced. Action. Surprises. Thrills.	<b>Community</b> Being on Team. Chatting. Interacting.	<b>Strategy</b> Thinking Ahead. Making Decisions.	<b>Power</b> Powerful Character. Powerful Equipment.	<b>Story</b> Elaborate plots. Interesting characters.	<b>Discovery</b> Explore. Tinker. Experiment.

Source: <http://quanticfoundry.com/gdc/>

# Motivation clustering

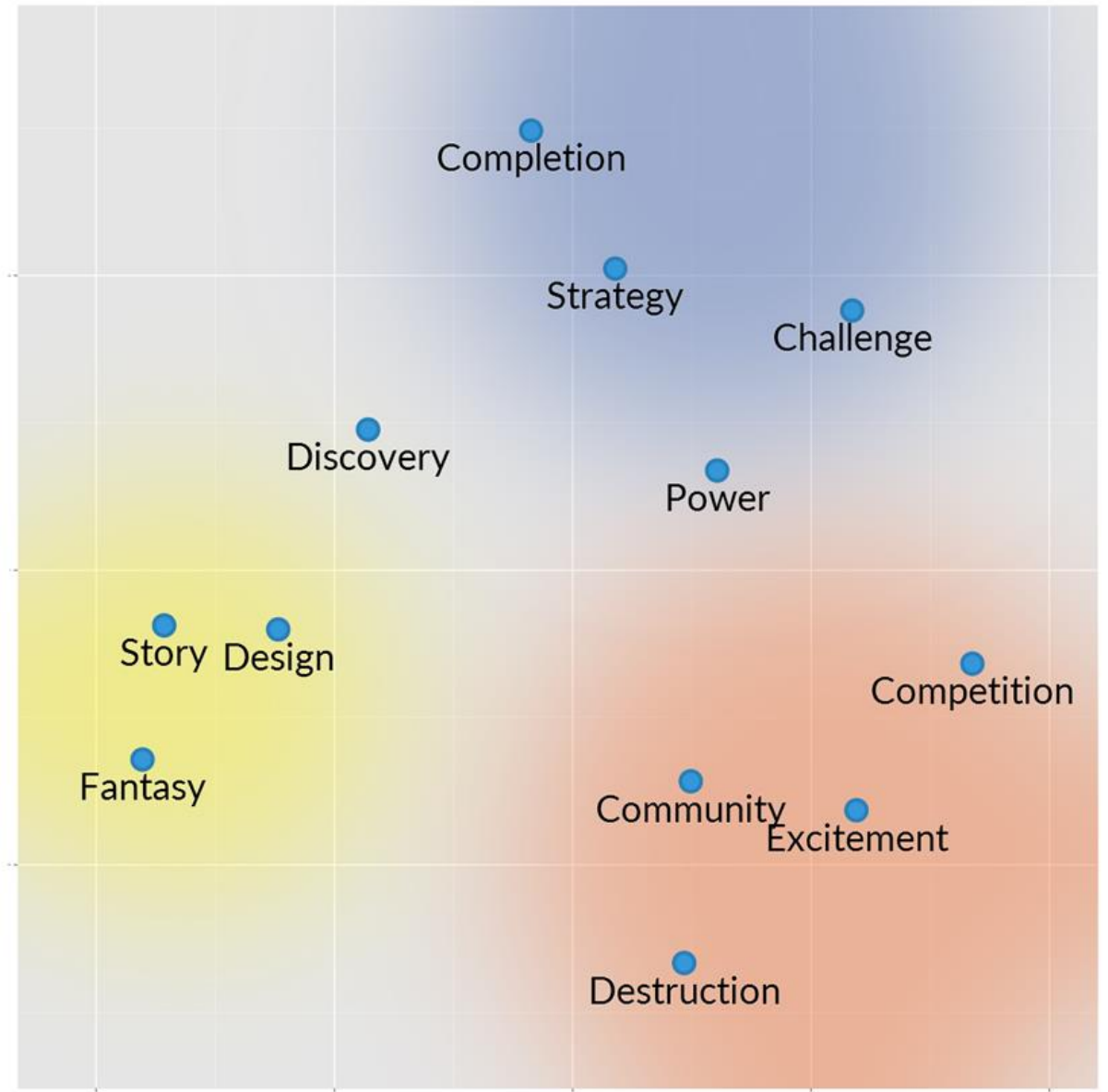
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Very large survey, N = 140,000  
Produced clear clustering of  
gamer preferences

- But why?

After that, he went on to match  
them up against personality types...

## MAP OF GAMING MOTIVATIONS





# Motivation clustering

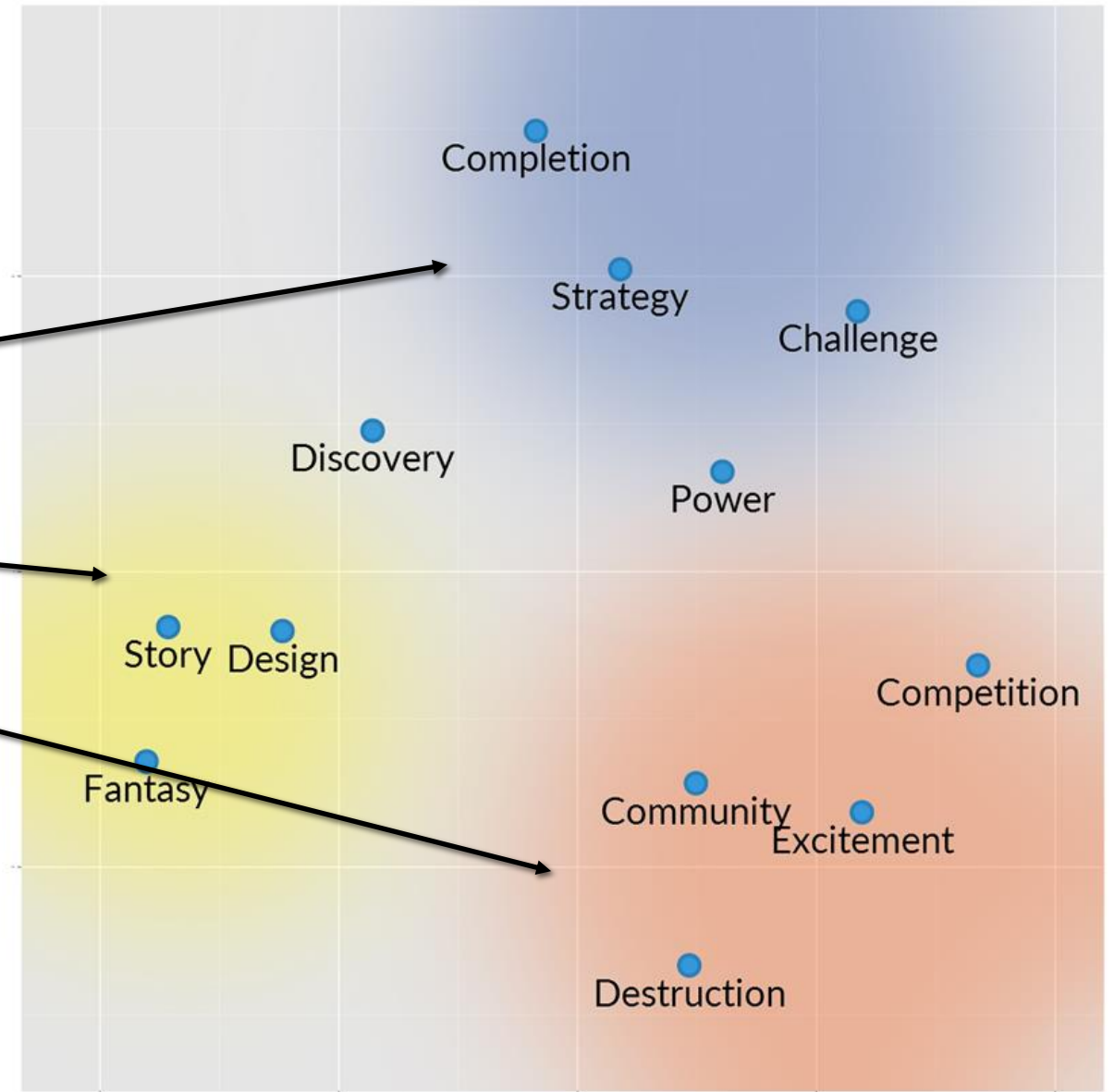
Found that three of the FFM axes correlate *weakly* with gaming profiles:

- Conscientiousness
- Openness
- Extraversion

No results for:

- Agreeableness
- Emotional Stability

## MAP OF GAMING MOTIVATIONS



# How do games compare?

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Counter-Strike fulfills desires for

- Challenge, strategy, competition, destruction

Final Fantasy fulfills desires for

- Challenge, story, discovery, challenge, fantasy

The Sims fulfills desires for

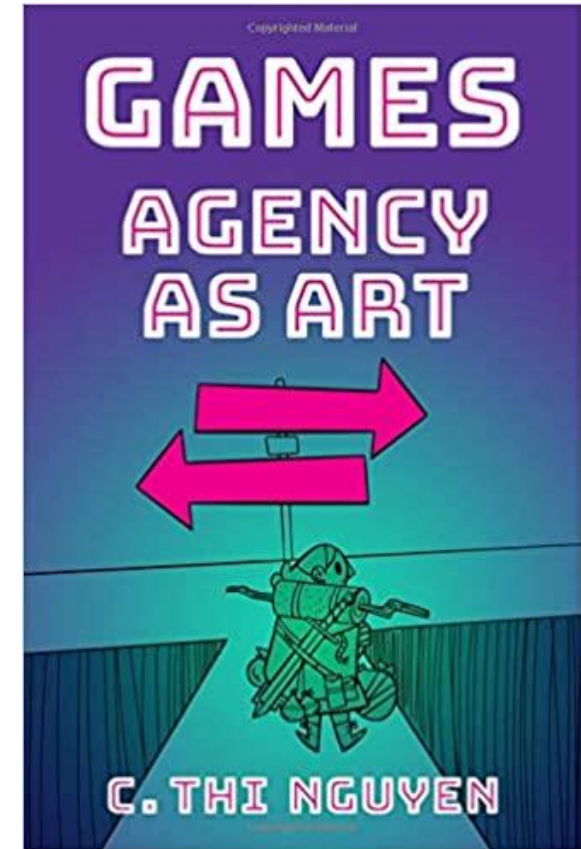
- Story, design, fantasy, strategy, destruction

Every game pursues multiple player desires *and therefore multiple player types*

# Overarching theme: agency

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1. Games are a **medium of agency**
  - Players can **act** in an **intentional** way
  - Players' actions bring about **change** in the game
  - Players can **learn** and **plan ahead** just like in real world
2. Games give players a taste of novel modes of agency
3. Players have different goals / interests



# Experience Summary

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Let's not talk about “fun” in the abstract

Different players have different motivations

**Let's be as precise as possible** when talking about the player's experience

- Know who you're making the game for
- Know what you want the player to experience
- Layer multiple types of experiences together



# Start thinking about your own project...

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What kind of a game do you want to make?

What will players find interesting about it?

You don't have to have any answers yet...

# Start thinking about your team

---

We'll want 3-person and 4-person teams

- Hard cap of 20 teams in class for playtesting purposes

You have a week or two to self-organize and come up with team + project proposals

- So the sooner the better :)

# Start thinking about scope

---

We'll want 3-person and 4-person teams

- Hard cap of 20 teams in class for playtesting purposes

You have a week or two to self-organize and come up with team + project proposals

- So the sooner the better :)

Consider that your game needs to provide a **3-5 minute “chunk” of experience**

- How do you fit your vision into 5 minutes?
- Don't plan for an epic



# How to have a good time with Unity

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Highest fun-over-tedium ratio	Not so high	Let's not go here
<p>Fast action mechanics Player has an avatar or a vehicle Maybe local two-player</p> <ul style="list-style-type: none"><li>- Arcade</li><li>- Shooter</li><li>- Endless runner</li><li>- Puzzle</li></ul>	<p>Abstracted gameplay Slower gameplay Technically challenging</p> <ul style="list-style-type: none"><li>- Cards</li><li>- Tactics</li><li>- Physics</li><li>- Story based</li></ul>	<p>Long-form single player games Complex game systems Complex implementation</p> <ul style="list-style-type: none"><li>- RPG</li><li>- Strategy</li><li>- Simulation</li><li>- Networked multiplayer</li></ul>

Platformers  
(Unity physics!)

# Today's summary

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## Game Design

- Intro
- Player Experience

Quick final project update

Next time we continue with game design: mechanics and uncertainty

Qs?

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