

Game Design: *Lecture 1 – Introduction*

Mary Barreto

mary.barreto@staff.uma.pt

Madeira Tecnopoloo, piso -2, sala 3

Sergi Bermúdez i Badia

E-mail:

sergi.bermudez@staff.uma.pt

Office: 2.73



**INTERNATIONAL MASTER
OF INTERACTIVE MEDIA DESIGN**

Are the right people here?

2

- List**
- Your background**
- Your expectations**

Who am I?

3

Mary Barreto, PhD em Human-Computer Interaction

Research interests and work: sustainability, Child-Computer Interaction, Eco-feedback Technology, Smart Grids and Energy Understanding

Previous courses at UMA: Capstone Project MHCI, Social Web, Interaction Seminar, Engenharia de Requisitos, Sistemas Multimédia, Arquiteturas de Software de Interfaces com o Utilizador



Game Design v2.0!

4

- Changes to the previous years:
 - ▣ Less assignments (N=3)!
 - ▣ Introduction of Unity practicals
 - ▣ Opportunity to use of immersive VR and full-body interaction technologies (MAST Challenge Lab)
 - ▣ More time for project

What is this class about?

5

- Preparation for a career involving computer game design
- How to design great games
 - ▣ Learn to see, hear, and think like a game designer
 - ▣ Build your skills
 - ▣ Use your skills well
- Unity training for programmers and non-programmers

Lectures Based on...

6

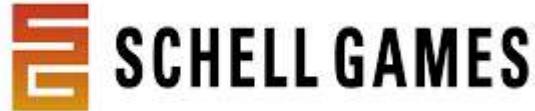


Jesse Schell

- HIS approach to game design
- Based on same theoretical content... but extended!
- More hands-on sessions!

Lectures Based on ...

7



Game Design

Portfolio page of the Game Design course @ UMa



INTERNATIONAL MASTER
OF INTERACTIVE MEDIA DESIGN

8

Home

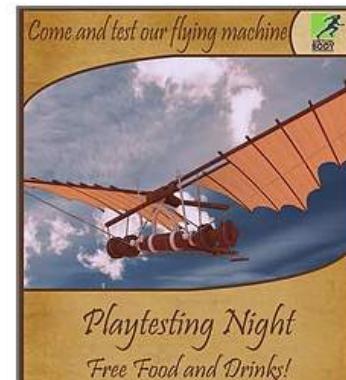
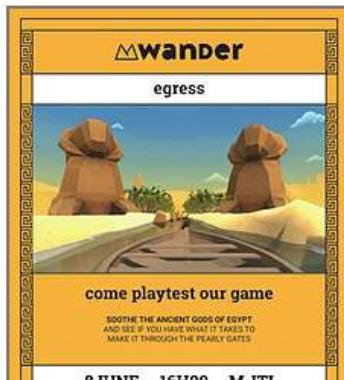
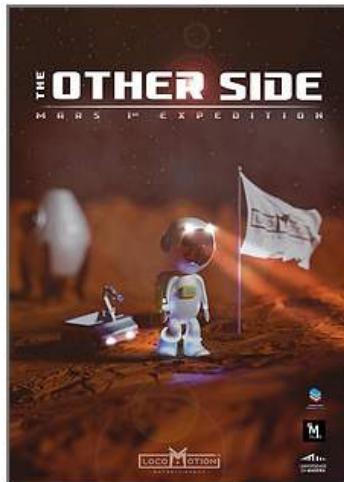
Gallery

About

Contact



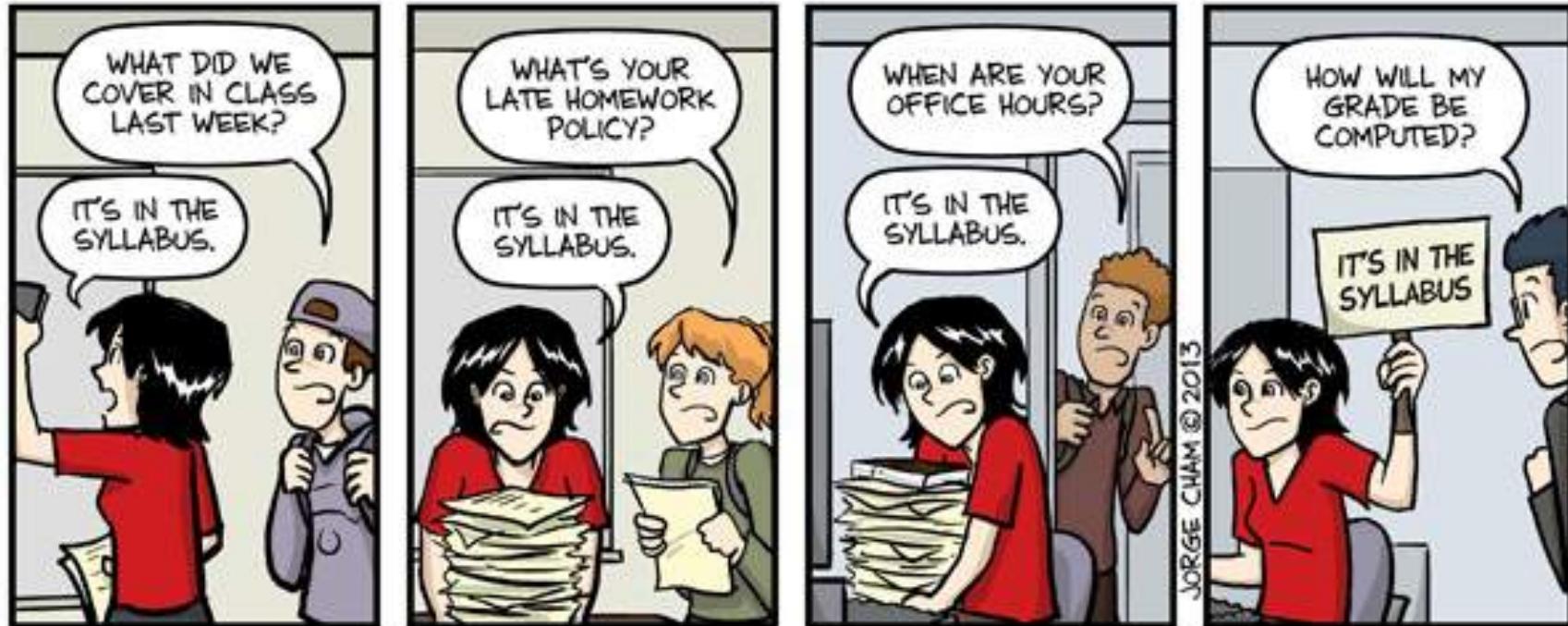
UNIVERSIDADE da MADEIRA



www.cee.uma.pt/edu/gamedesign/

To the Syllabus!

9



IT'S IN THE SYLLABUS

This message brought to you by every instructor that ever lived.

Syllabus

10

- History of games
- Where to start:
 - Game designers
 - Ideation
 - A game made for the player
- Elemental Tetrad
 - Mechanics
 - Technology
 - Story
 - Aesthetics
- Designing games
 - Designing experiences
 - Psychology of play
 - Level design
 - Transmedia worlds
 - Characters
 - Technology and Interface
 - Ethics and Responsibilities
- Doing it:
 - Unity3D
 - Terrain
 - Scenario
 - Programming without programming
 - Animation
 - Avatars
 - Teamwork
 - Documenting it
 - Playtesting
 - Balancing
- The Game Business:
 - Pitch
- A real game studio project:
 - From ideation to production

Course Work

11

Table 1: Weight of the Game Design assignments

<i>Assignment</i>	<i>Total % of grade</i>
Toolbox - individual	20%
Unity - individual/group	30%
Project - group	50%

Course Work – first 5 weeks

12

February/March 2022

SUNDAY	MONDAY	TUESDAY	WEDNESDAY	THURSDAY	FRIDAY	SATURDAY
20	21	22 Introduction	23	24	25 Listen to the games	26
27	28	1	2	3	4 P1 Unity	5
6	7	8 History of Games	9	10	11 P2 Unity	12
13	14	15 Where to start designing a game?	16	17	18 P3 Unity	19
20	21	22 Psychology of Play	23	24	25	26

Deliverable: Toolbox

March 22nd Delivery of Toolbox (individual, 20%)

Books?



Books to Consider

14

Mandatory:

- The Art of Game Design: A book of lenses. Jesse Schell. A K Peters/CRC Press; 3rd edition (2019).

Recommended:

- Game Design Workshop: A Playcentric Approach to Creating Innovative Games. CRC Press Taylor: Francis, 2014.
- Sheldon, Lee. *Character development and storytelling for games*. Cengage Learning, 2014.
- Swink, Steve. *Game Feel*. Morgan Kaufmann, 2009.
- Imagineers, Disney. "The Imagineering workout, Exercises to shape your creative muscles." New York: Disney, 2005.
- Postmortems from Game Developer Magazine, ed. Austin Grossman, 2003.
- McCloud, Scott. "Understanding comics: The invisible art." Northampton, Mass, 1993.

The Art of Game Design

15



Other Resources

16

- UMa's Moodle:
 - Password: "iamagamedesigner"
- Your best resource is not a book:
 - <http://www.gamasutra.com/>
 - <http://www.gamecareerguide.com/>
 - <http://www.design3.com/>
 - <https://www.youtube.com/user/ExtraCreditz>
- ... your brain ... and GOOGLE!!

Class Policies

17

- Please be ***on time***
- Participate!
- Attendance of everybody is expected (failure under 75%)
- All exercises are **MANDATORY**

Sleep – Just not here

18



Why are games important?

Why are games important?

20

- EVERONE PLAYS
- GAMES ENHANCE DEVELOPMENT
- \$\$
- NEW WAY COMMUNICATE
- CULTURE
- RELAXATION
- EDUCATIONAL
- Art
- TEAMWORK PRACTICE
- PRACTICE / MAKE MISTAKES
- MEET new PEOPLE
- MOTIVATION?
- STAY IN TOUCH
- ESCAPISM / FANTASY
- SAFE COMPETITION
- FEELING OF MASTERY
- STORYTELLING
- FEELING OF CONTROL
- THINKING ↳ FUN
- HEALTH
- PROBLEM SOLVING
- BONDING / SOCIAL
- EMOTIONAL TRIGGERS

Who is already a game designer?

21



- What is stopping you?

What is this?

22



What is this?

23



Be one by pretending to be one!

24



Even Vincent Van Gogh was once a beginner



"Mills in the Neighborhood of Dordrecht"

Be one by pretending to be one!

25



Irises

Irises is one of several paintings of irises by the Dutch artist Vincent van Gogh, and one of a series of paintings he executed at the Saint Paul-de-Mausole asylum in Saint-Rémy-de-Provence, France, in the last year before his death in 1890.

Artist: Vincent van Gogh

Dimensions: 71 cm x 93 cm

Location: J. Paul Getty Museum

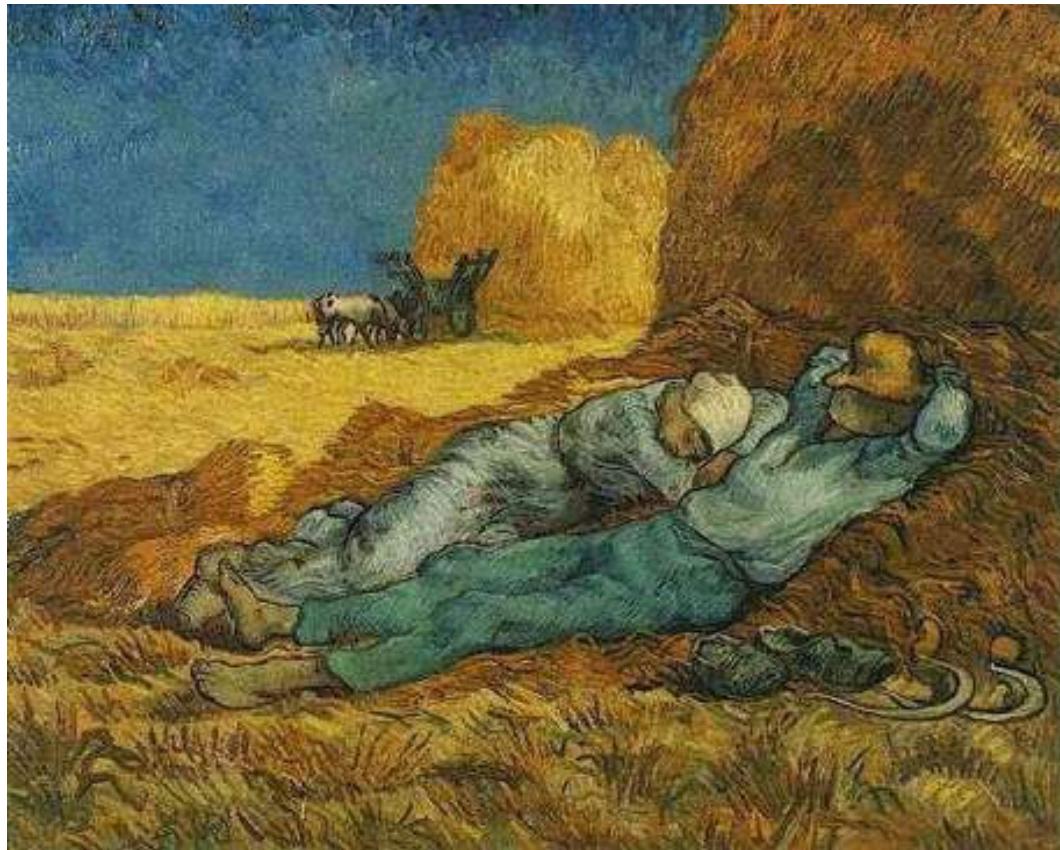
Created: 1889

Medium: Oil on canvas

Periods: Modern art, Post-Impressionism

Be one by pretending to be one!

26



Noon - Rest from Work (after Millet)

Artist: Vincent van Gogh

Dimensions: 73 cm x 91 cm

Part of series: Copies by Vincent van Gogh

Created: January 1890

Genre: Genre art

Medium: Oil paint

Magic Words

27

Who is a game designer?

“I am a game designer.”

First Question

28

- What does a game designer have to know?

First Question

29

■ What does a game designer have to know?

- WHAT IS PLAY
- WHAT IS FUN?
- PSYCHOLOGY
- MATH
- GAMES
- WHAT IS A GAME?
- PLAYTESTING
- HUMAN INTERACTION
- LISTEN
- SYSTEM DESIGN
- BRAINSTORMING
- RULES
- AUDIENCE
- COMMUNICATE TO AUDIENCE
- ANALYTIC SKILLS
- TECHNOLOGY
- WHAT IS NOT FUN
- PROBLEM SOLVING
- ITERATION
- WHITING!

First Question

30

- What does a game designer have to know? →
EVERYTHING !!?
- Is this a little bit of an issue?

Second Question

31

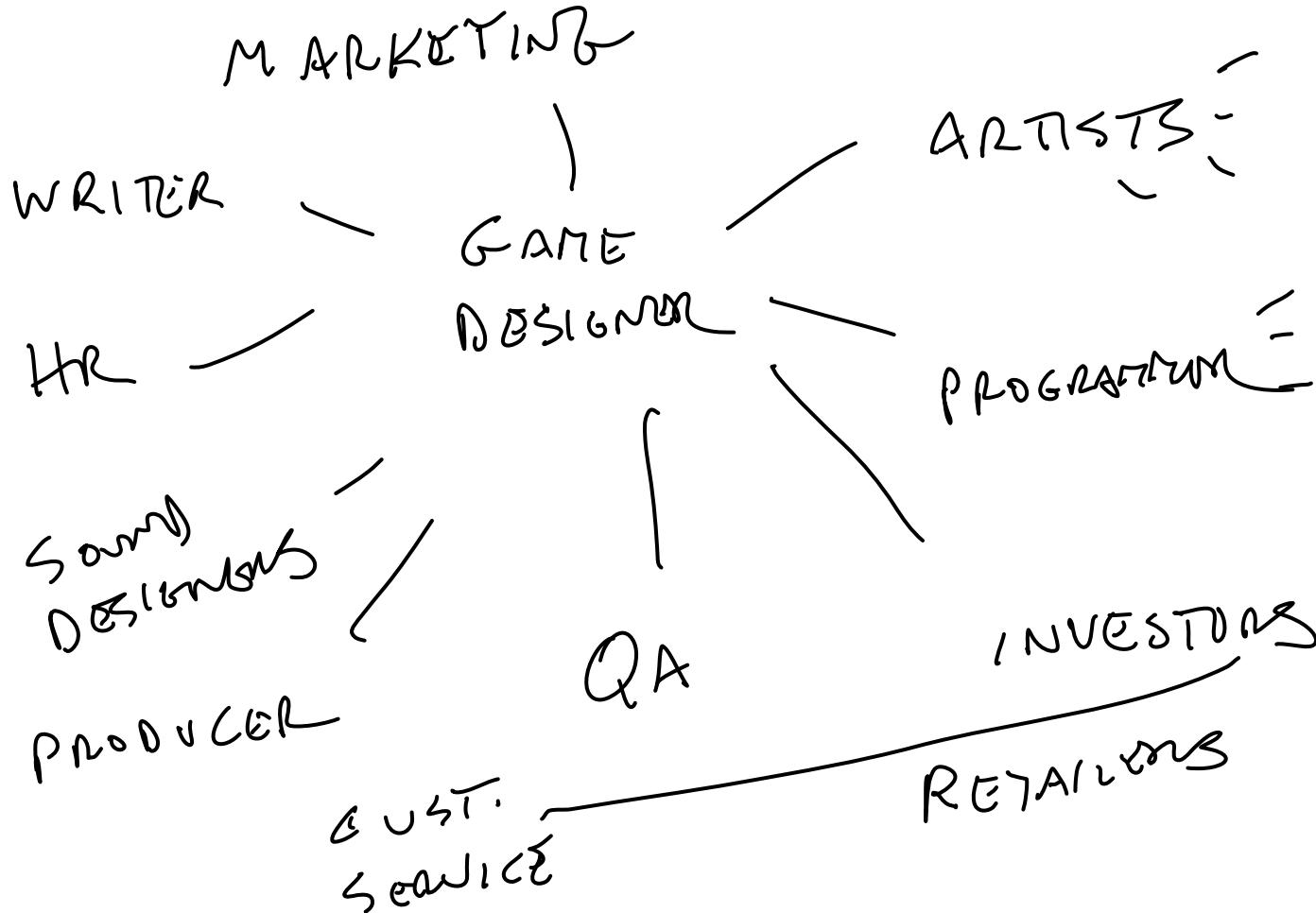
- Where does a game designer fit in at a studio?



Where does a game designer fit in at a studio?

Where does a game designer fit in at a studio?

33



Third Question

34

- What is the most important skill a game designer can have?

Listen.. to what?!!

35



Your Team

36



The client

37



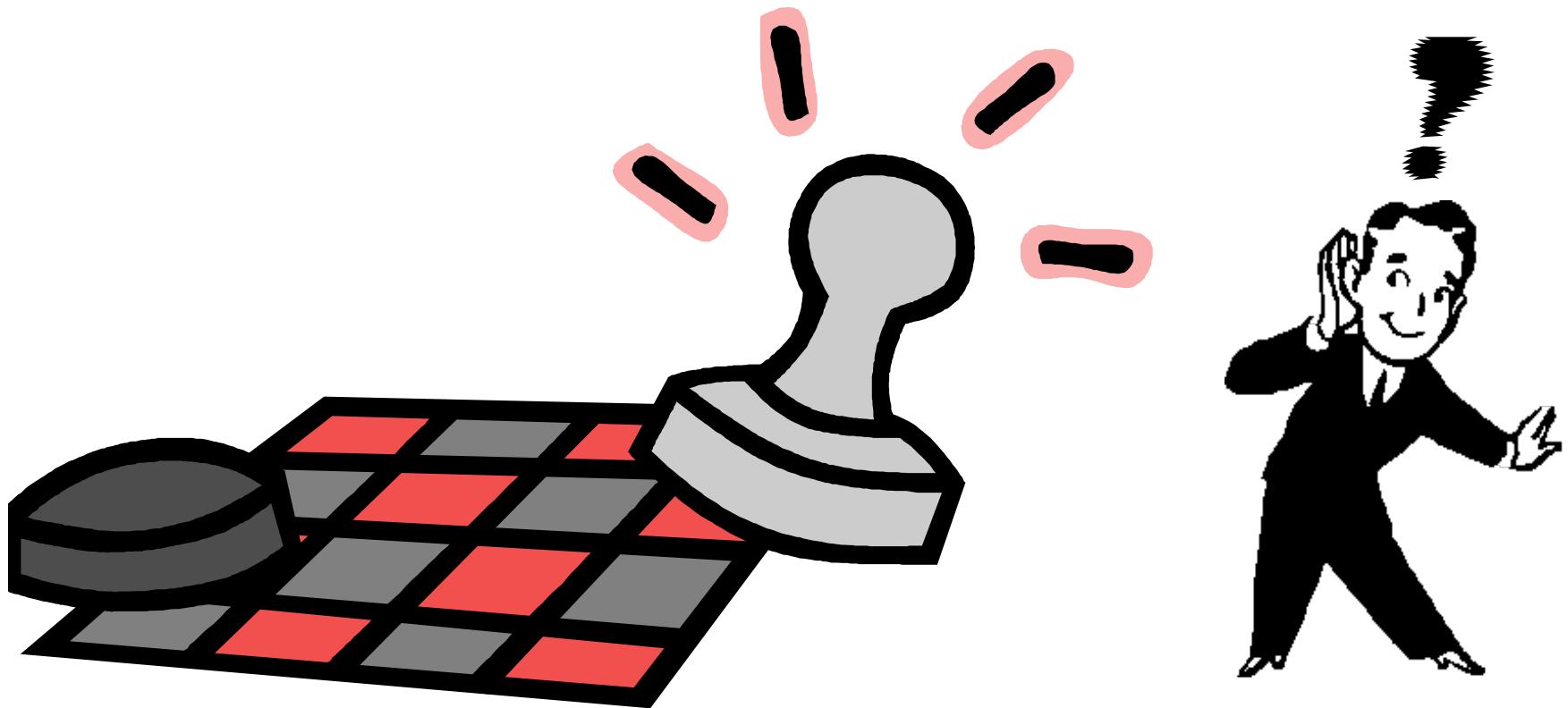
The target audience

38



The game

39



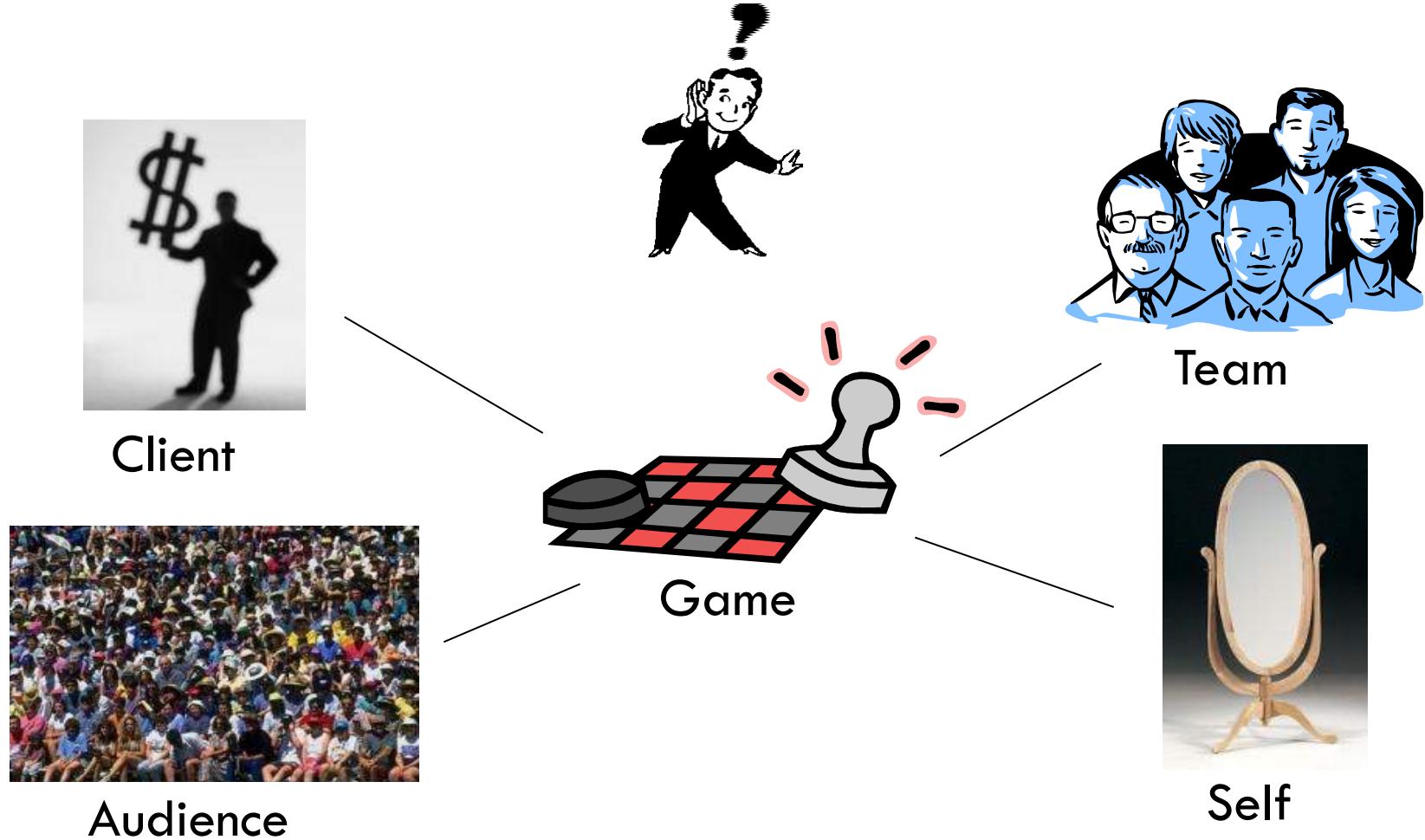
Yourself

40



Listening

41



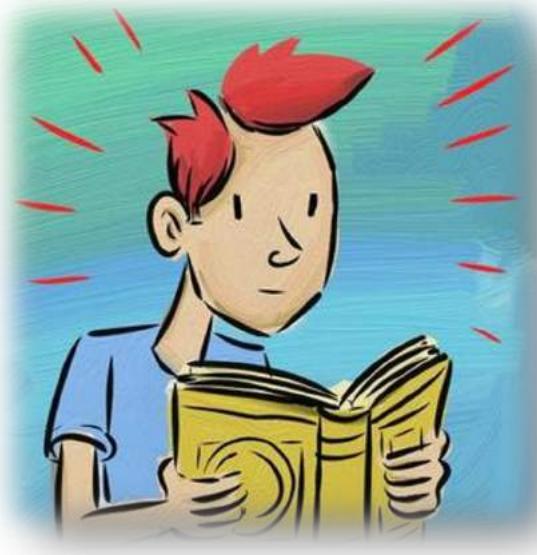
Important tips ...

42

- Observe** and **listen** in your everyday activities
- Buy a small **notebook** and have it always with you!
- Don't be picky** with your ideas
- Do **never trust your memory**!! You will forget what you do not write down

Readings for next Friday!!

43



- Colin Campbell: “*Game creation and the art of listening*”
 - ▣ http://gamasutra.com/view/news/174588/Opinion_Game_creation_and_the_art_of_listening.php#.UFcHp6Se6iE
- Thomas Glare: “*Free Game Development Tools For Novice Game Creators*”
 - ▣ https://www.gamecareerguide.com/features/1690/free_game_development_tools_for_novice_game_creators.php?print=1

Note:

- We will **discuss** them – so, do read them, and be prepared to ask and answer thoughtful questions in class.
- Don't just read – please also use your **brain**...



4

Unity 3D practicals

What is Unity 3D

46

- Unity is a cross-platform game engine. As of 2018, the engine had been extended to support more than 25 platforms.
- The engine can be used to create three-dimensional, two-dimensional, virtual reality, and augmented reality games, as well as simulations and other experiences.
- The engine has been adopted by industries outside video gaming, such as film, automotive, architecture, engineering and construction.

What is Unity 3D

47



VR Cameras

- VR Camera

3DCG Data

- 3ds MAX
- REVIT 2019
- MAYA
- NAVISWORKS
- V-ray
- LUMION

oculus quest

- oculus quest
- VR headset
- Controller

oculus Go

- oculus Go
- VR headset

oculus rift s

- oculus rift s
- VR headset
- Controller

iOS android

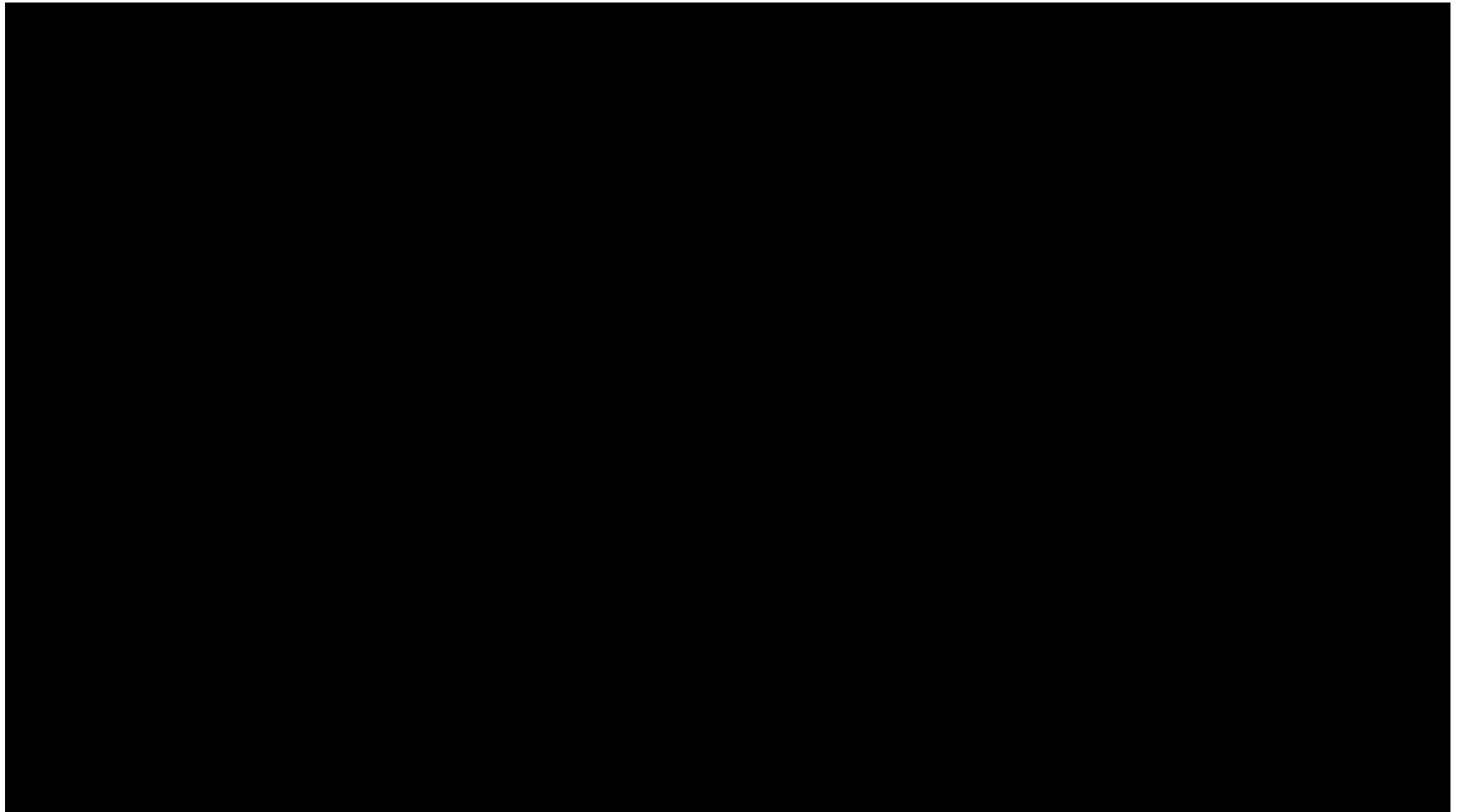
- iOS
- android
- Smartphone

Google Chrome

- Google Chrome
- Monitor
- Smartphone

Making Games: Unity FPS Sample

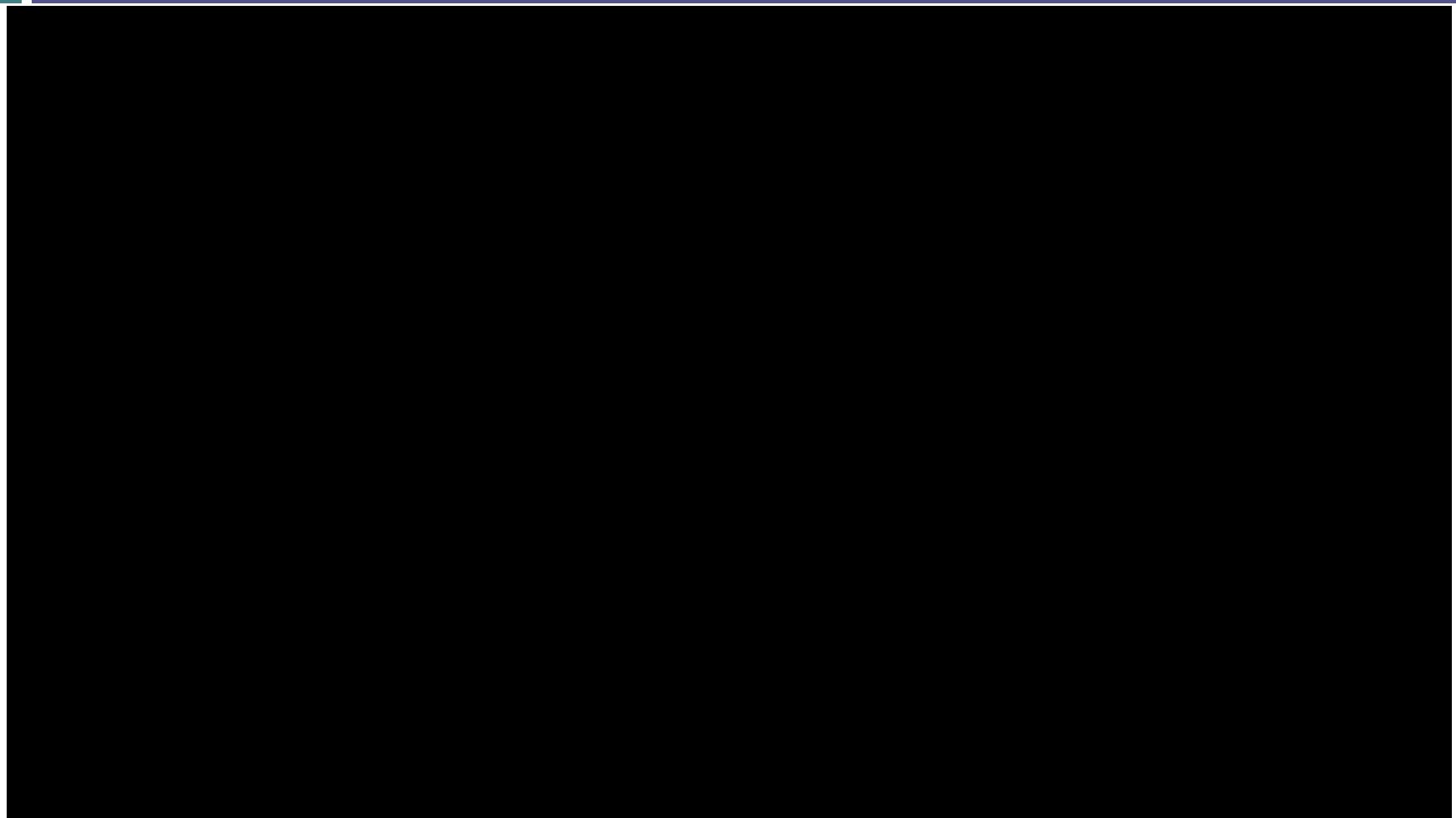
48



An open source multiplayer First-Person Shooter game project. Use it to learn about the latest features in Unity, extract and use the parts you need or use the full project as a starting point for your own games.

Making Movies: The Heretic

49



The Heretic is a short film created by Unity's Demo Team. The film uses every aspect of Unity's High Definition Rendering Pipeline, features advanced effects created with the VFX Graph, and showcases Demo Team's first realistic digital human. Read more at <https://on.unity.com/36jOXHY>

What you will learn...

50

- Basic Unity Programming
- Level design
 - ▣ Terrain and asset integration
- Basic animation (objects and cameras)



<https://neurorehabilitation.m-iti.org/tools>



Reh@panel Client



Reh@panel Client

- Kinect v1 / v2
- Smartwatch with Heart Rate, accelerometer and gyroscope.
- Wii Balance board
- Leap motion
- EyeTracking (EyeX from Tobii, eyeTribe)
- AR tracking
- Facial (position & orientation) tracking
- Emotion recognition
- Phone



What you will learn...

52

- Basic Unity Programming
- Level design
 - ▣ Terrain and asset integration
- Basic animation (objects and cameras)

-  <https://neurorehabilitation.m-iti.org/tools>
 Reh@panel Client
- Producing content for HMDs

What you will learn...

What you are supposed to avoid ...

54



Before Friday March 4th: Setting up Unity

55

To solve these practical exercises, you will need a modern PC with a graphics accelerator, Windows OS (64 bit) and to install the following software. Please be aware that it will take some serious time (> 60 minutes) to install everything.

1. **Download and Install Unity 3D** (version 2019) from <https://store.unity.com/pt/download-nu>
If you need help, check <https://docs.unity3d.com/Manual/InstallingUnity.html>
2. **Download and Install Visual Studio** (VS). If you have an active msdn account, you can download VS Enterprise 2017 as a student. If you don't, then you can install VS Community 2017 from <https://www.visualstudio.com/downloads/>.
If you need help, check <https://docs.microsoft.com/en-us/visualstudio/install/install-visual-studio>

Questions??

56



For more information contact:

mary.barreto@staff.uma.pt



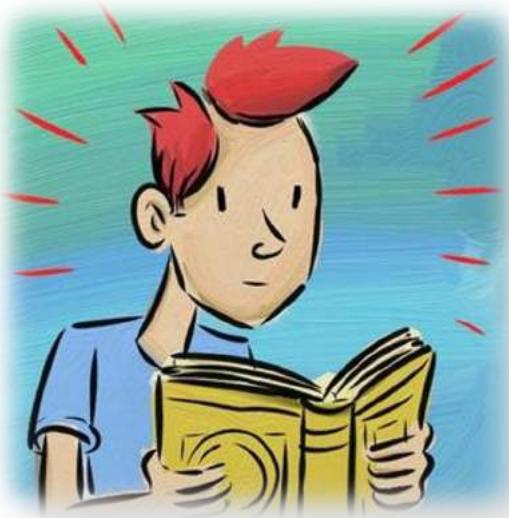
GAME DESIGN:

LECTURE 4 – WHERE TO START?

Readings for Today!!

2

- Adam Rademacher: “Ten Things I Wish Uni Had Taught Me”
- Arnold Hendrick: “Hiring Game Designers”



Notes:

We will **discuss** them – so, do read them, and be prepared to ask and answer thoughtful questions in class.

Don't just read – please also use your **brain**...

First exercise!!

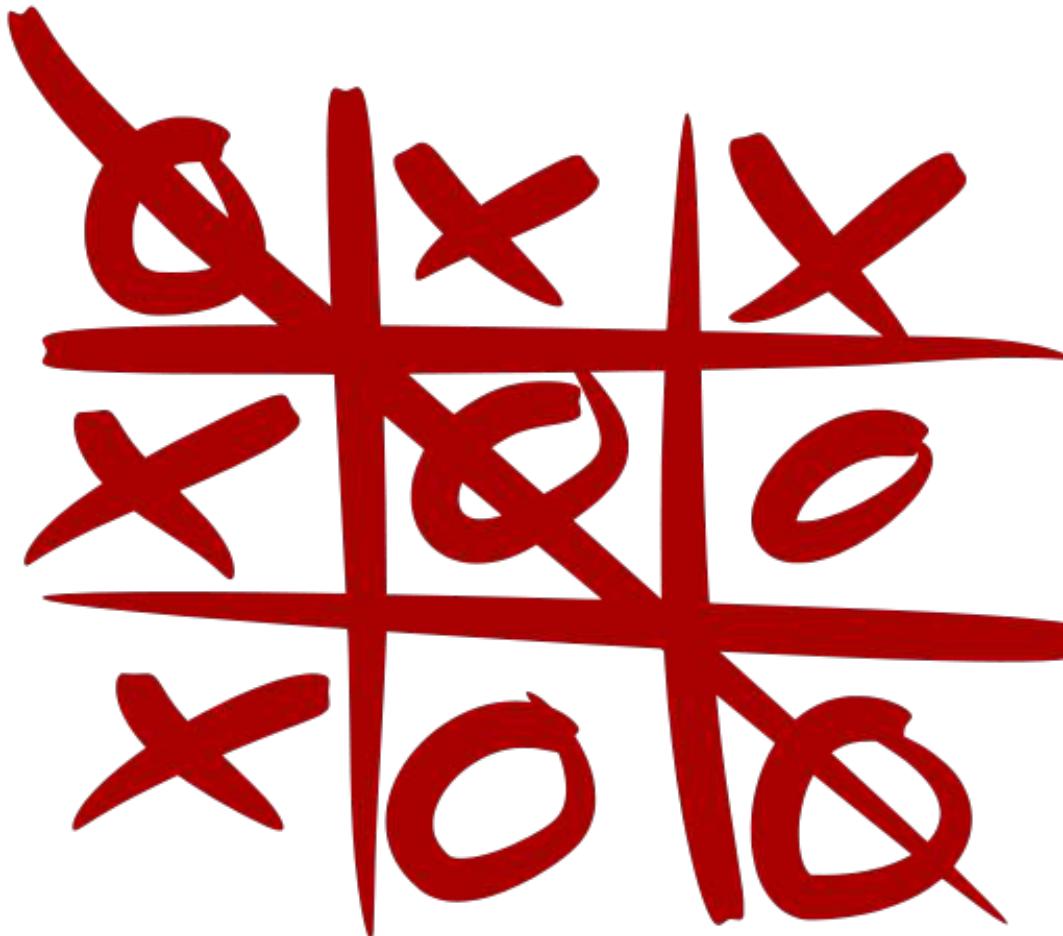
3

- **Toolbox of games** lets read the exercise
- Due by Monday 22nd of March @ 9am!!
- Be honest, the more you work this one out the more tools you will have for designing!
- ***Design experience only comes with practice!!***



What if you were to make an
“improved” version of tic-tac-toe?

4



Some Lenses to Start With



The Lens of the Problem Statement

6

12

The Lens of The
Problem Statement



Illustration by Cheryl Ceol

To use this lens, think of your game as the solution to the problem.
Ask yourself these questions:

- What problem, or problems, am I really trying to solve?
- Have I been making assumptions about this game that really have nothing to do with its true purpose?
- Is a game really the best solution? Why?
- How will I be able to tell if the problem is solved?

Reasons for a clear problem statement

7

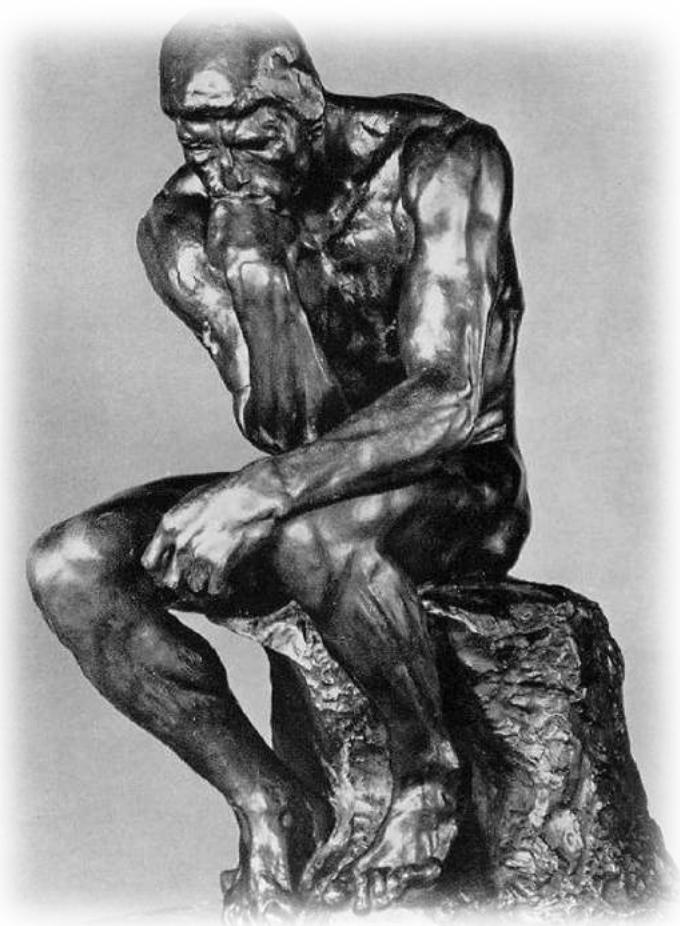
- 1) Broader creative space
- 2) Clear measurement of success
- 3) Better communication



What is your problem?

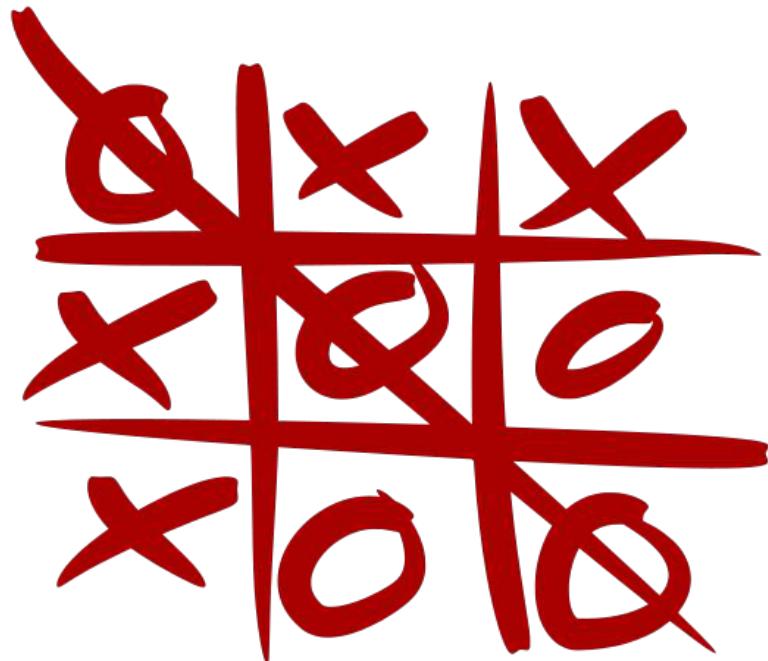
8

- How can I make a board game that uses the properties of magnets in an interesting way?
- How can I make a videogame that tells the story of Hansel and Gretel?
- How can I make a game that feels like a surrealist painting?
- How can I improve on Tetris?



The Lens of the Problem Statement

9



12

The Lens of The
Problem Statement



Illustration by Cheryl Ceol



To use this lens, think of your game as the
solution to the problem.
Ask yourself these questions:

- What problem, or problems, am I really trying to solve?
- Have I been making assumptions about this game that really have nothing to do with its true purpose?
- Is a game really the best solution? Why?
- How will I be able to tell if the problem is solved?



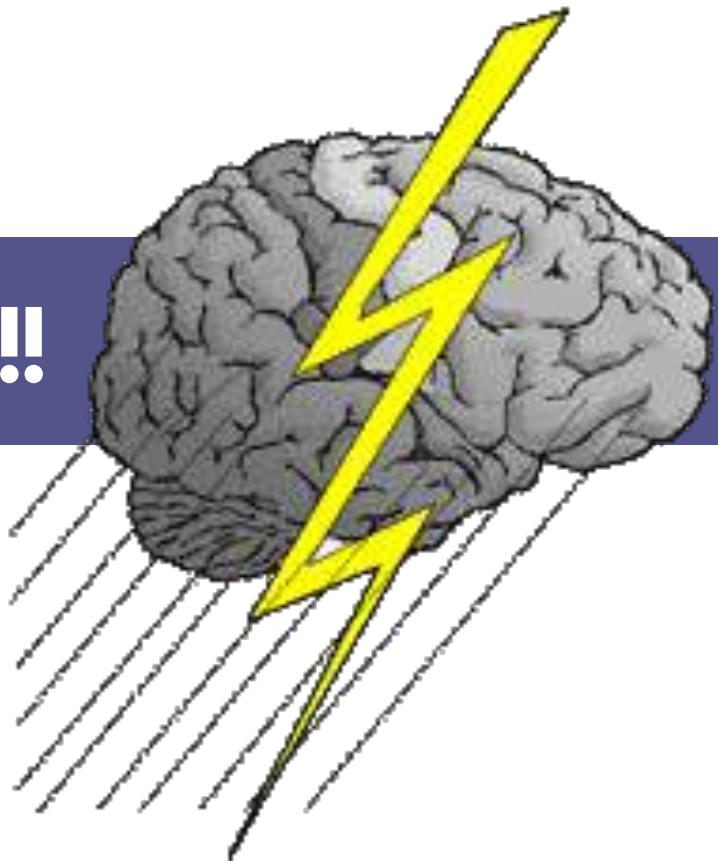
So, you've got a problem... now what?

Idea → Game

11

- 1) Think of an idea.
- 2) Try it out.
- 3) Keep changing it and testing it until it seems good enough.

Brainstorming !!



Brainstorming tips?

Brainstorming tips

14

- 1) Write things down!
- 2) Write or Type?
- 3) Sketch
- 4) Toys
- 5) Change Your Perspective
- 6) Immerse Yourself
- 7) Crack Jokes
- 8) Spare No Expense
- 9) The Writing on the Wall
- 10) The Space Remembers
- 11) Write Everything
- 12) Number Your Lists
- 13) Mix and Match Categories
- 14) Talk to Yourself
- 15) Find a Partner

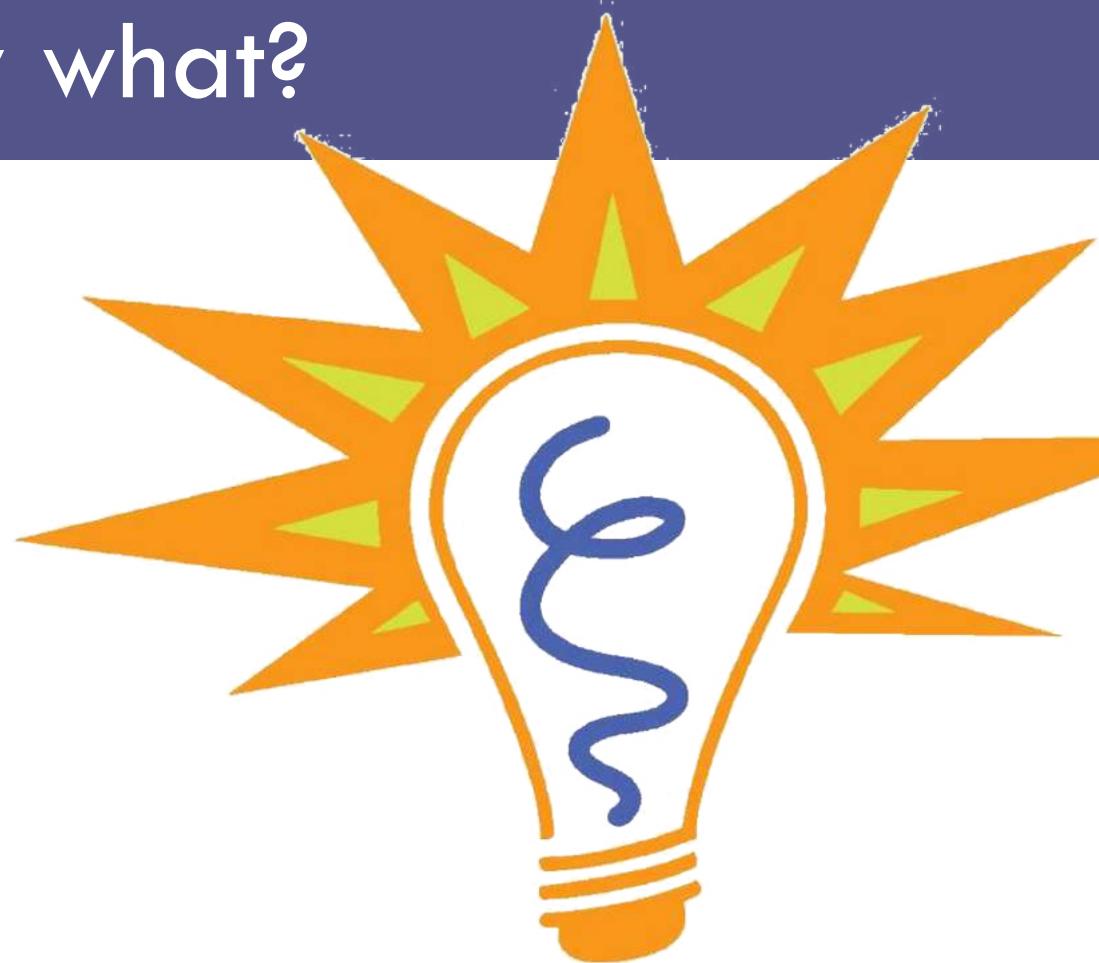


Just pick something!

16



And... now what?



A plan is a real thing!

18



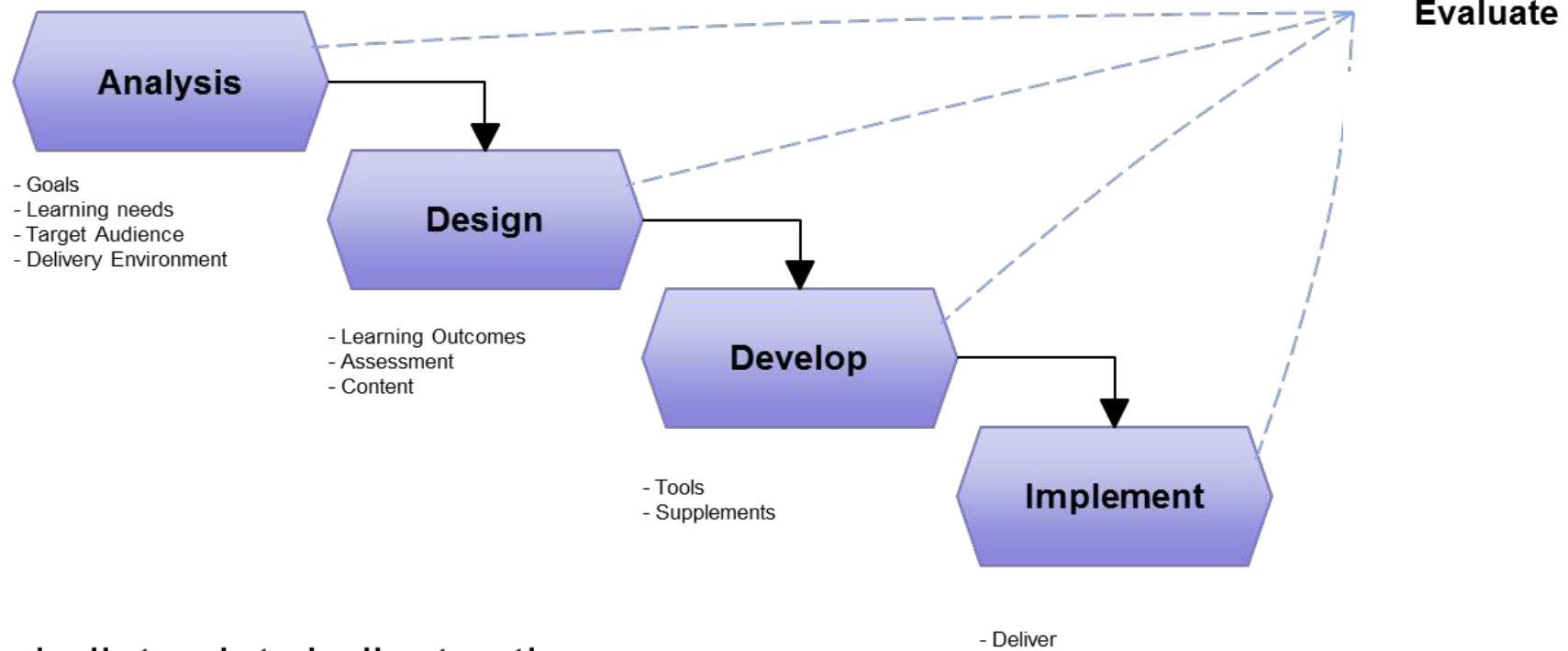
Build it!



Building it!!

The Waterfall Model

20

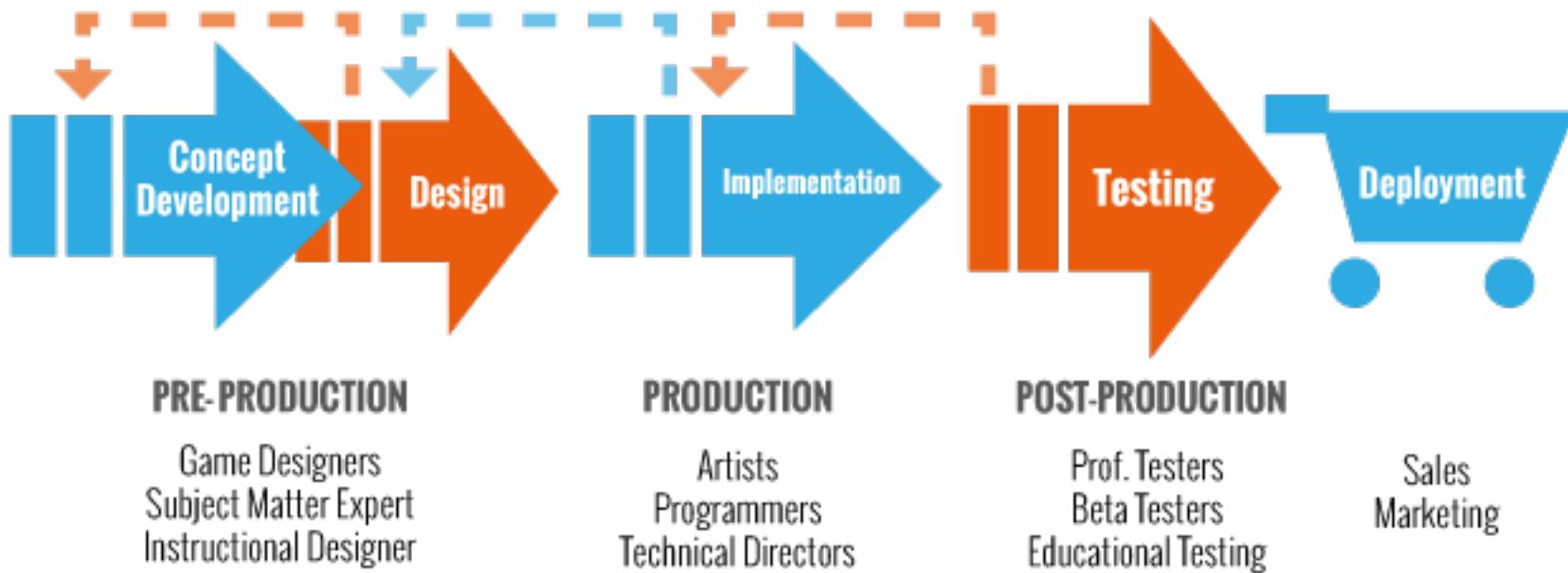


The bullet points indicates the purpose.

The Waterfall Model

21

Most game studios follow waterfall without even realizing it!
The ‘Production Pipeline’ that studios use is waterfall with a different name.



WATERFALLS ARE • DANGEROUS! •

**Each year people fall to their
Death at waterfalls.**

**For your safety, DO NOT CLIMB
TO THE TOP OF THE FALLS!**

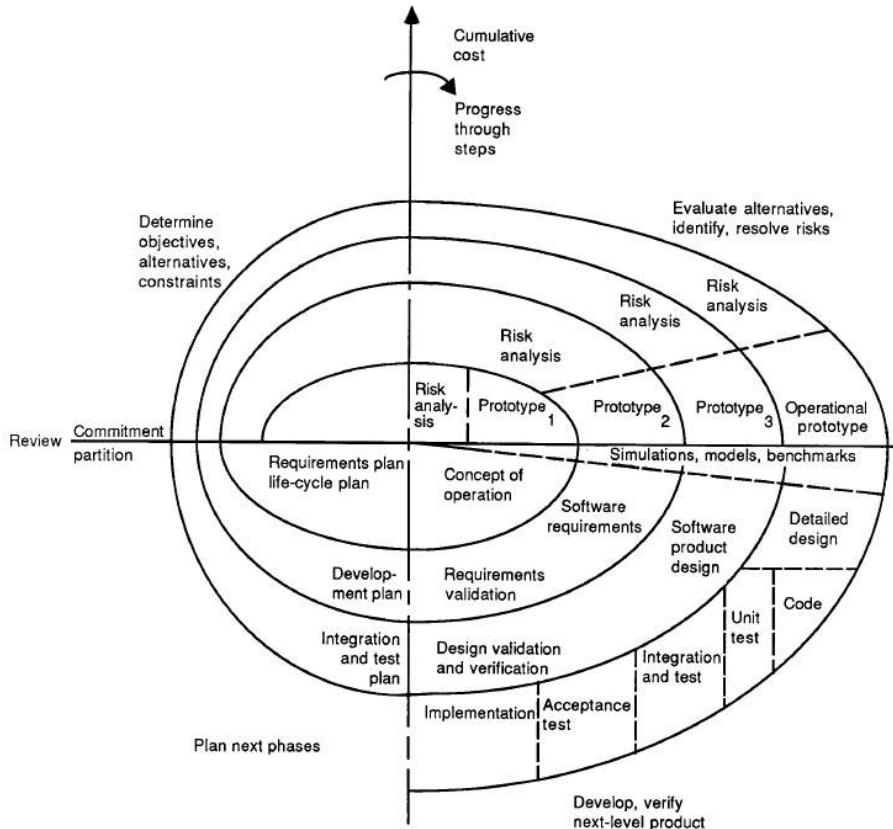
DO NOT CLIMB ON FENCE!



The Spiral Model: Bow down before it

23

Barry Boehm loves you:
The Incremental Commitment Model (ICM) is a system design, developmental, and evolution process for the 21st Century systems.



* Brown, A.W., and Meyers, S. 2005. COINCOMO—Combining Elements of the COCOMO Suite, ISPA, June 2005.

Determine objectives,
alternatives and constraints



Review



The Lens of Risk Mitigation

25

14

The Lens of
Risk Mitigation

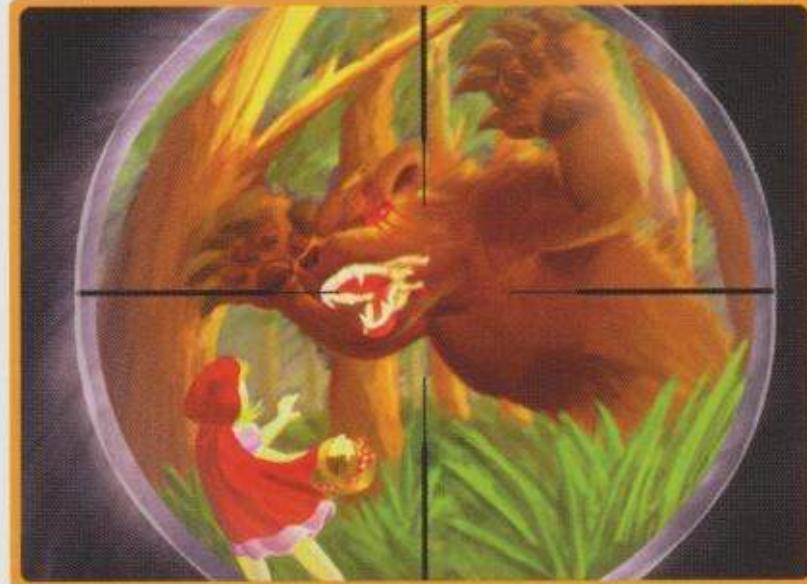


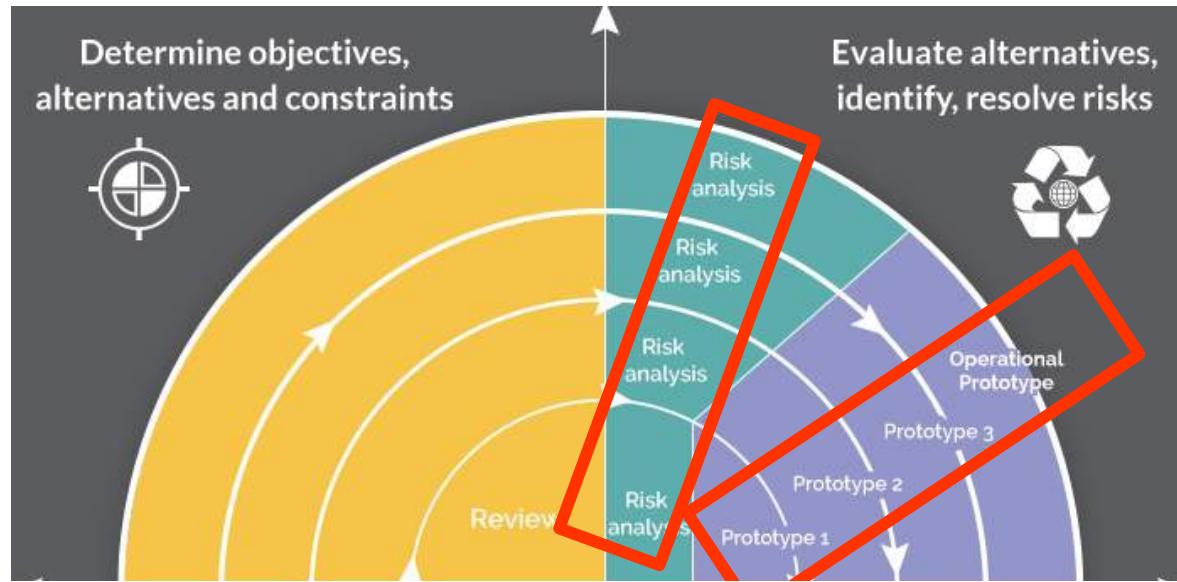
Illustration by Chris Daniel



To use this lens, stop thinking positively, and start to seriously consider the things that could go horribly wrong with your game.
Ask yourself these questions:

- What could keep this game from being great?
- How can we stop that from happening?





Rule of the Loop

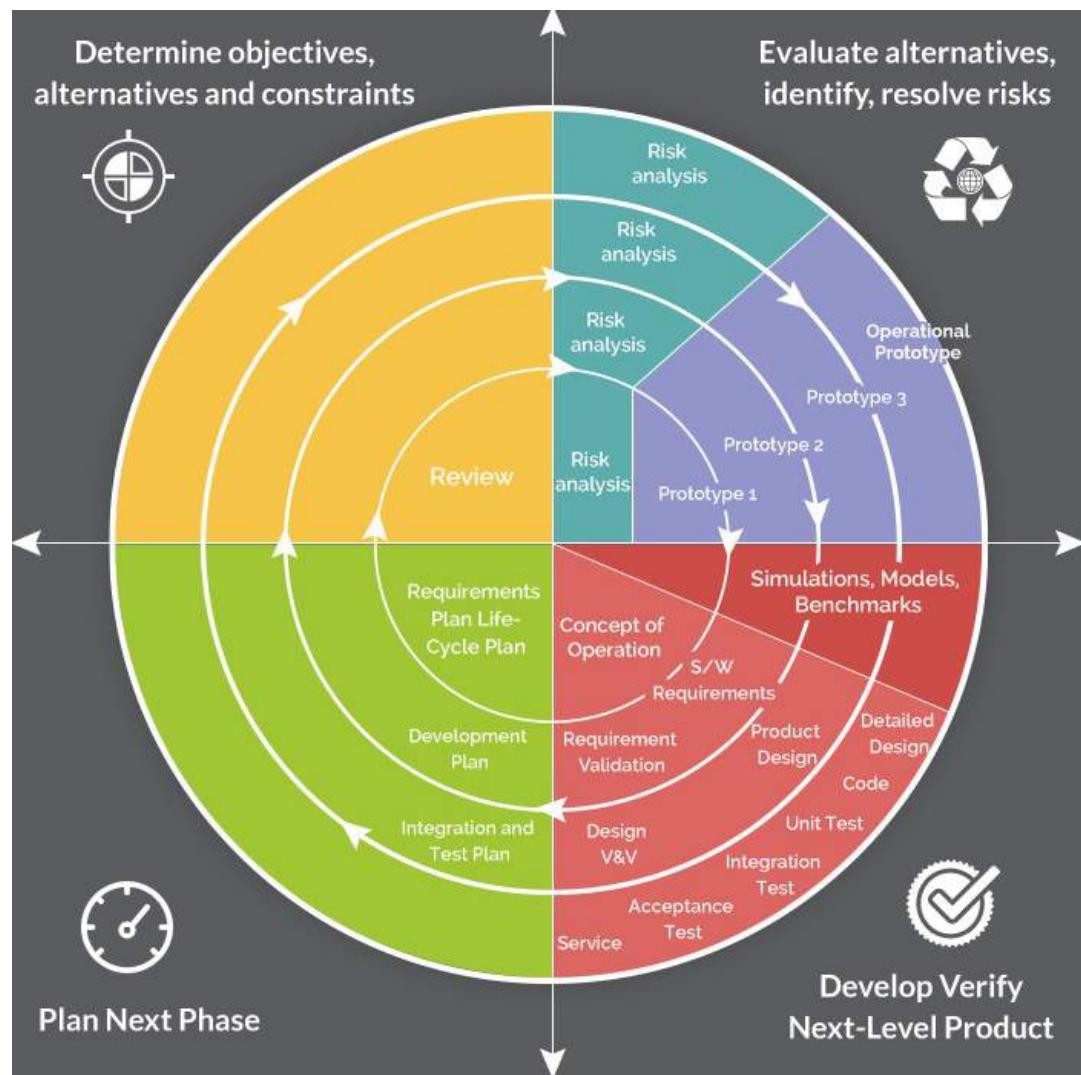
27

- ***The more times you test and improve your design, the better your game will be.***
- 1) State the **problem**
 - 2) **Brainstorm** some possible solutions
 - 3) Choose a **solution**
 - 4) List the **risks** of using that solution (stop thinking positive!)
 - 5) Build **prototypes** to mitigate the risks
 - 6) **Test** the prototypes. If they are good enough, stop.
 - 7) **State the new problems** you are trying to solve, and go back to step 2.

Tips for Productive Prototyping

28

- 1) Answer a Question
- 2) Forget Quality
- 3) Don't Get Attached
- 4) Prioritize Your Prototypes
- 5) Parallelize Prototypes Productively
- 6) It Doesn't Have to be Digital
- 7) Pick a “fast loop” Game Engine
- 8) Build the Toy First







David Jones

31

- David Jones' career started with the indie game **Menace**, which he developed himself under the company name DMA Design and released in 1988. The game sold 15,000 copies and earned him £20,000.
- DMA created a third game in 1991, **Lemmings**, which was commercially and critically successful, resulting in awards including winning European Game of the Year twice.
- Over the next two years Lemmings sold over 2 million copies, making Jones, 25 years old at release and married with a child, wealthy and famous.

Lemmings



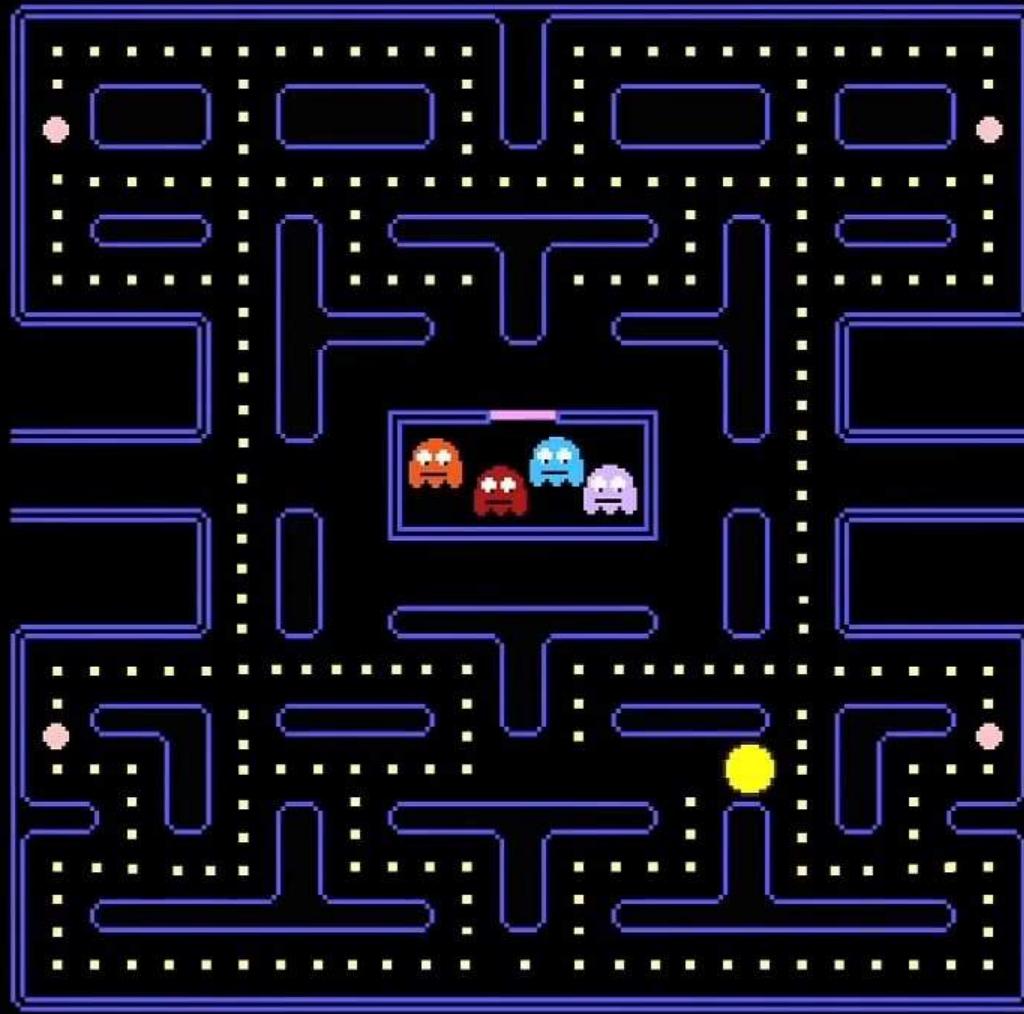
GTA

33



GTA == Pacman?

34



GTA today...

35



The Lens of The Toy

36



The Lens of The Toy



Illustration by Camilla Kydland



To use this lens, stop thinking about whether your game is fun to play, and start thinking about whether it is fun to play **with**. Ask yourself these questions:

- If my game had no goal, would it be fun at all? If not, how can I change that?
- When people see my game, do they want to start interacting with it, even before they know what to do? If not, how can I change that?

How will you know when it is good enough?

The Eight Filters of “Good Enough”

38

- 1) **Artistic Impulse** – Does this game feel right?
- 2) **Demographics** – Will the intended audience like this game?
- 3) **Experience Design** – Is this a well-designed game?
- 4) **Innovation** – Is this game novel enough?
- 5) **Business and Marketing** – Will this game be profitable?
- 6) **Engineering** – Is it technically possible to build this game?
- 7) **Social / Community** – Does this game meet our social and community goals?
- 8) **Playtesting** – Do the playtesters enjoy this game enough?

13

The Lens of
The Eight Filters

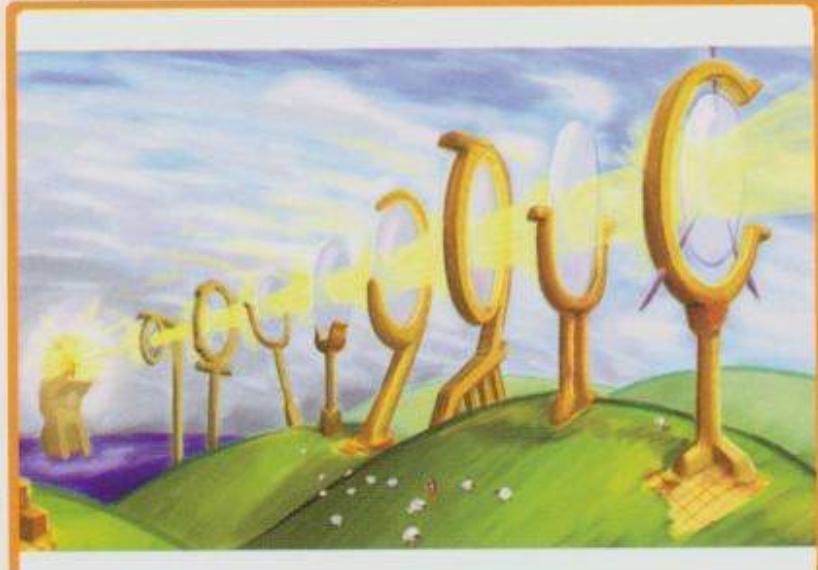


Illustration by Chris Daniel

To use this lens, you must consider the many constraints on your design. Your design is only finished when it can pass through all eight filters without requiring a change.
Ask yourself these questions:

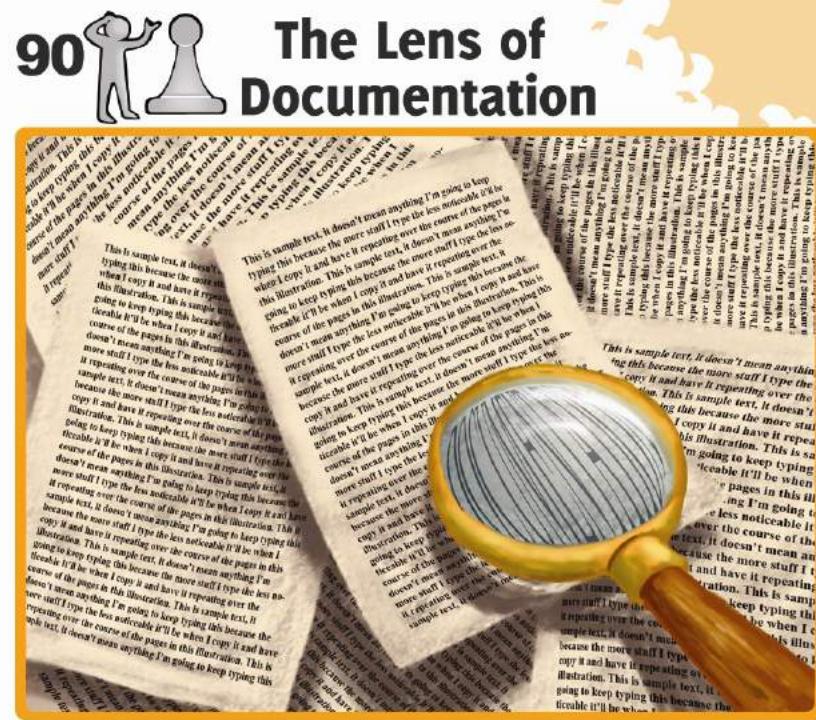
- Does this game feel right?
- Will the intended audience like this game enough?
- Is this a well-designed game?
- Is this game novel enough?
- Will this game sell?
- Is it technically possible to build this game?
- Does this game meet our social and community goals?
- Do the playtesters enjoy this game enough?

Hey wait! What do you document?

39

- 1) Anything you need to remember
- 2) Anything you need to communicate

One way to structure this is through
Questions & Answers



To ensure you are writing the documents you need, and skipping the ones you don't, ask yourself these questions:

- *What do we need to remember while making this game?*
- *What needs to be communicated while making this game?*



But how to schedule for iteration?

40

- It's hard!
- Do your best.
- Mark Cerny*'s “Method”
 - ▣ When **pre-production** is finished, you have done 30% of the work.



* Mark Cerny (born August 24, 1964) is an American video game industry figure who has worked as a game designer, programmer, producer and business executive.

- Lifetime Achievement Award from the International Game Developers Association, and the Academy of Interactive Arts & Sciences Hall of Fame.
- Lead architect of PlayStation 4 and PlayStation Vita.

Whew ... short break

41



What is a game designer's goal?



Experimental Films

43

- I already know the ending /
- it's the part that makes your face implode /
- I don't know what makes your face implode /
- but that's the way the movie ends.



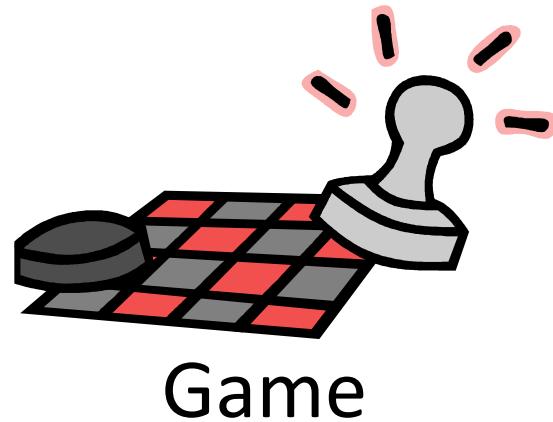
An experimental film is often characterized by the **absence of linear narrative, the use of various abstracting techniques** -- out-of-focus, painting or scratching on film, rapid editing -- the use of asynchronous sound or even the absence of any sound track.





Skin vs. Skeleton

46



THE VISIBLE MAN

PATENT PENDING

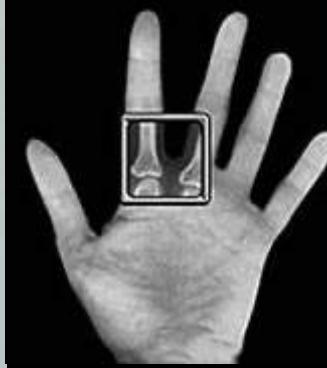
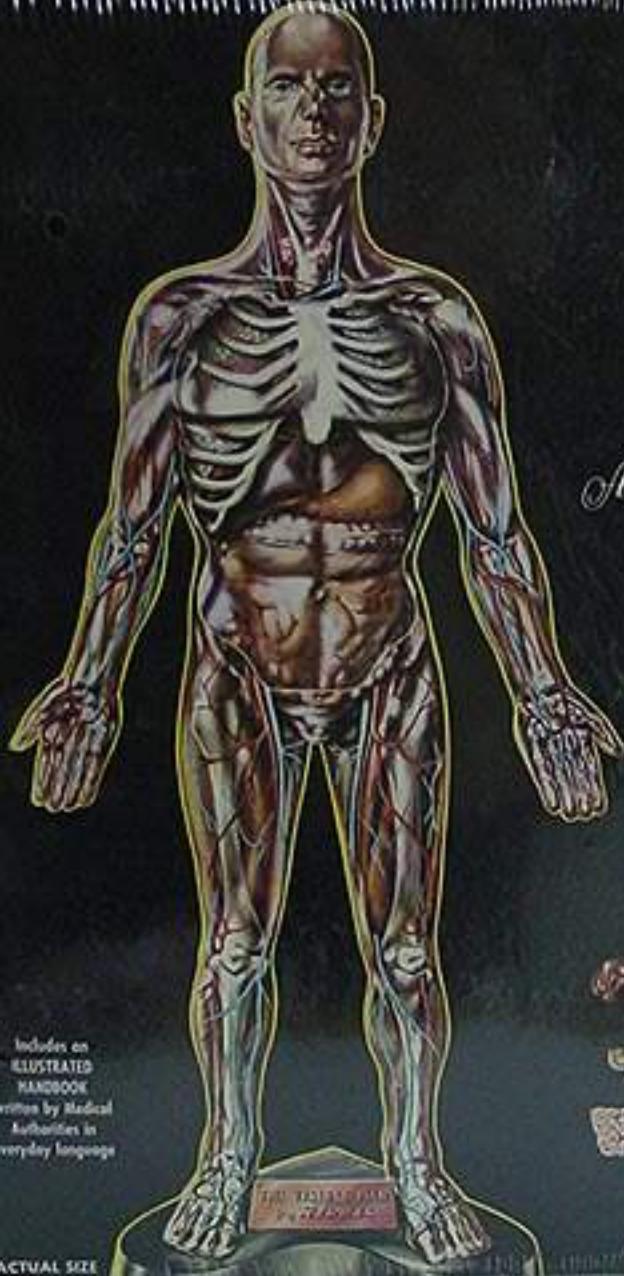
A Science Assembly Project

THE WONDERS OF
THE HUMAN BODY
REVEALED!

FROM SKIN
TO SKELETON...
assemble, remove,
replace all organs!

Includes an
ILLUSTRATED
HANDBOOK
written by Medical
Authorities in
everyday language

ACTUAL SIZE



The Lens of Holographic Design

48

8



The Lens of Holographic Design

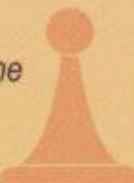


Illustration by Zachary Coe



To use this lens, you must simultaneously see your game structure and the player experience. You may shift your focus from one to the other, but it is far better to view your game and experience holographically.

- What elements of the game make the experience enjoyable?
- What elements of the game may detract from the experience?
- How can I change game elements to improve the experience?



Is “artifact vs. experience” unique to games?

Three Approaches to Experience Analysis

50

- Psychology
 - The science of behavior and mental processes.
- Anthropology
 - How are social relations among humans organized?
- Design
 - Plan for the construction of an object or a system

How to do so?

51

- Introspection
 - Observation of conscious inner thoughts, desires and sensations.
 - Pros and Cons?
- Four Practical Methods of Introspection
 - Analyze your memories (**Toolbox**)
 - Two passes
 - Sneak Glances
 - Observe Silently



The Lens of the Essential experience

53

1

The Lens of Essential Experience



Illustration by Zachary Coe



To use this lens, stop thinking about your game, and start thinking about the experience of the player. Ask yourself these questions:

- *What experience do I want the player to have?*
- *What is essential to the experience?*
- *How can my game capture that essence?*



How to do so?

Ask these questions:

- What is an experience I have had in my life that I would **want to share** with others?
- In what small way can I **capture the essence** of that experience and put it into my game?

11 

The Lens of Infinite Inspiration



Illustration by Sam Yip

When you know how to listen, everybody is the guru.
-Ram Dass

To use this lens, stop looking at your game, or games like it. Instead, look everywhere else. Ask yourself these questions:

- What is an experience I have had in my life that I want to share with others?
- In what small way can I capture the essence of that experience and put it into my game?

Remember - First exercise!!

55

- **Toolbox of games:** lets read the exercise
- Be honest, the more you work this one out the more tools you will have for designing!
- ***Design experience only comes with practice!!***

Eight New Lenses!

11

When you play a game, share your experience with others.

- What is an experience?
- In what small ways can I share my experience with others?

1

To use your imagination, and have fun with your game, ask yourself what's possible.

- What experience is enjoyable?
- What elements of my game are most enjoyable?
- How can my game be more fun?

8

To use the game as a way to learn about the world around you, and to help you understand it better.

- What do we need to know about the world?
- What needs to be done to make the world a better place?

90

To use the game as a way to learn about the world around you, and to help you understand it better.

- What do we need to know about the world?
- What needs to be done to make the world a better place?

13

To ensure that you need, ask yourself what you need to do to make sure you have what you need.

- What constraints do I need to finish the game?
- What filters do I need to use to make sure I have what I need?

15

To use this lens, think of your game as the solution to the problem. Ask yourself these questions:

- What problem, or problems, am I really trying to solve?
- Have I been making assumptions about this game that really have nothing to do with its true purpose?
- Is a game really the best solution? Why?
- How will I be able to tell if the problem is solved?

12 **The Lens of The Problem Statement**

To use this lens, think of your game as the solution to the problem. Ask yourself these questions:

- What problem, or problems, am I really trying to solve?
- Have I been making assumptions about this game that really have nothing to do with its true purpose?
- Is a game really the best solution? Why?
- How will I be able to tell if the problem is solved?

Illustration by Cheryl Ceol

Questions??

57



For more information contact:

mary.barreto@staff.uma.pt



GAME DESIGN:

LECTURE 5 – PSYCHOLOGY OF PLAY

Psychology of Play

Play

3



Play vs. Fight

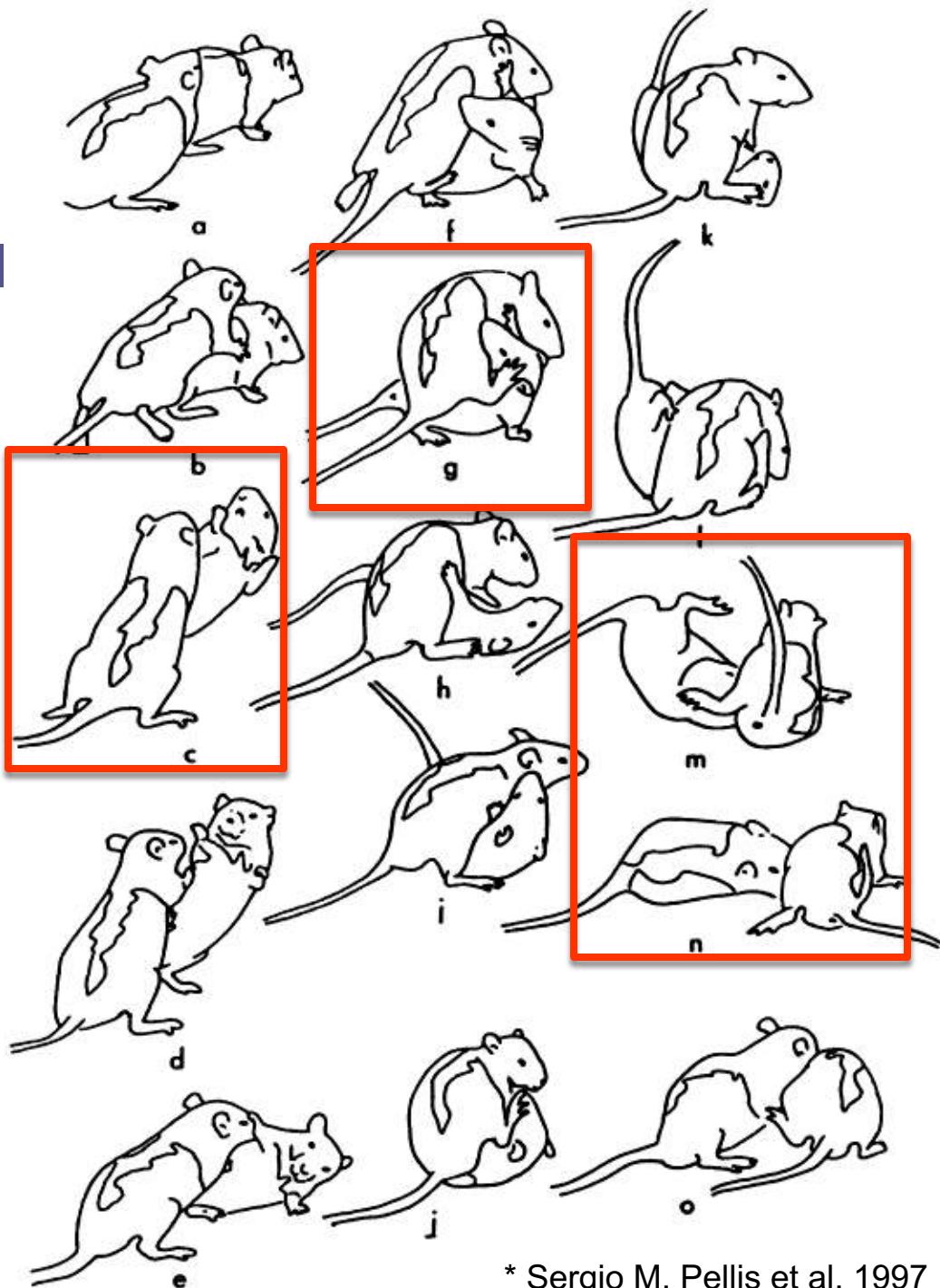


Play vs. Fight

5

Play vs. fighting:

- Different goals
- Fairness
- Reciprocity



Play vs. Fight

6

Play vs. fighting:

- Different goals
- Fairness
- Reciprocity



The PLAYER and his/her GOALS



Age Demographics

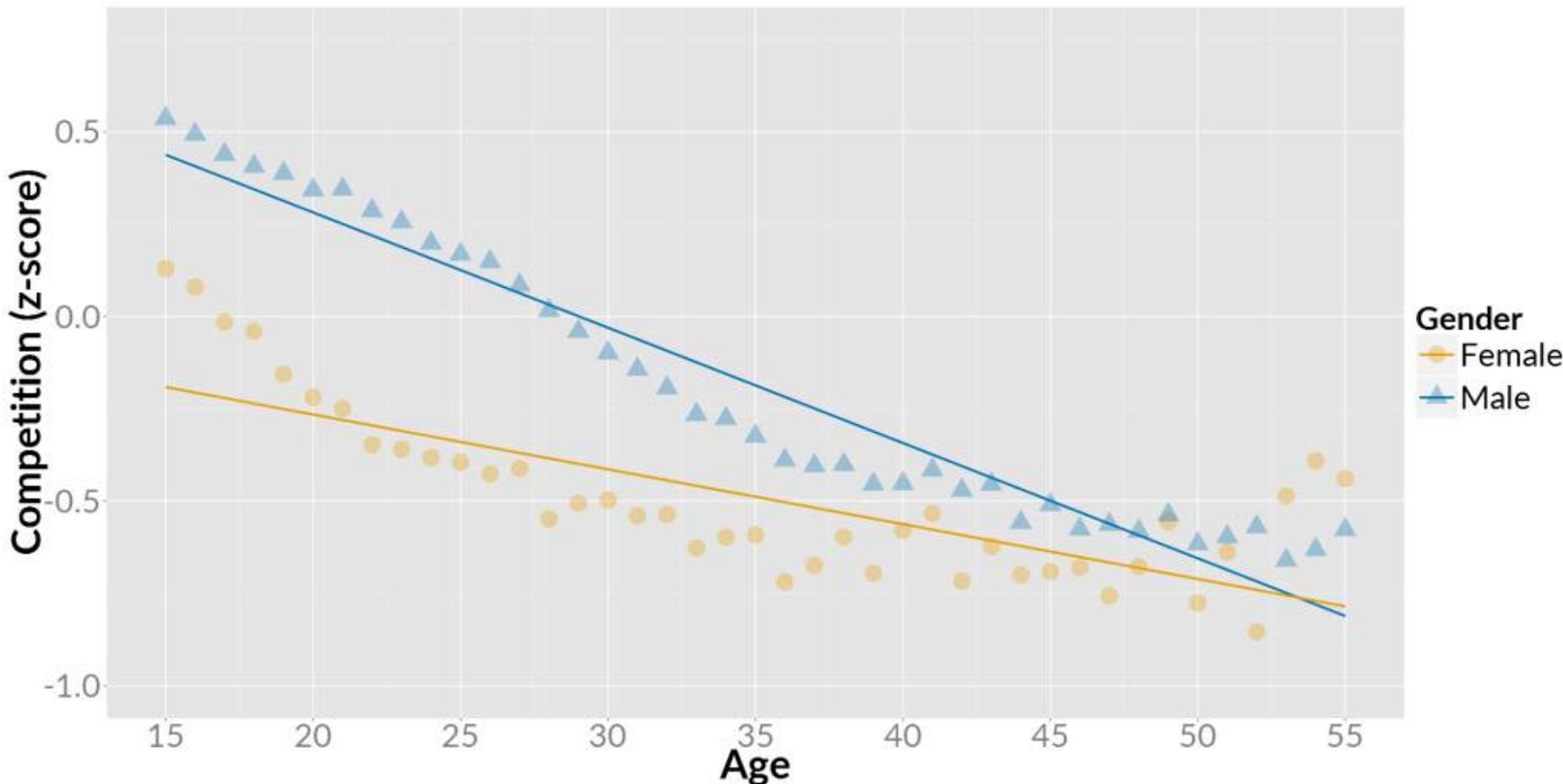
9

- 0-3 Infant / Toddler
- 4-6 Preschooler
- 7-9 Kids
- 10-12 Tweens
- 13-18 Teen
- 19-24 Young Adult
- 25-34 Adult
- 35-49 Thirties and Forties
- 50+ Fifties and Up



Gender Differences and Age: Competition

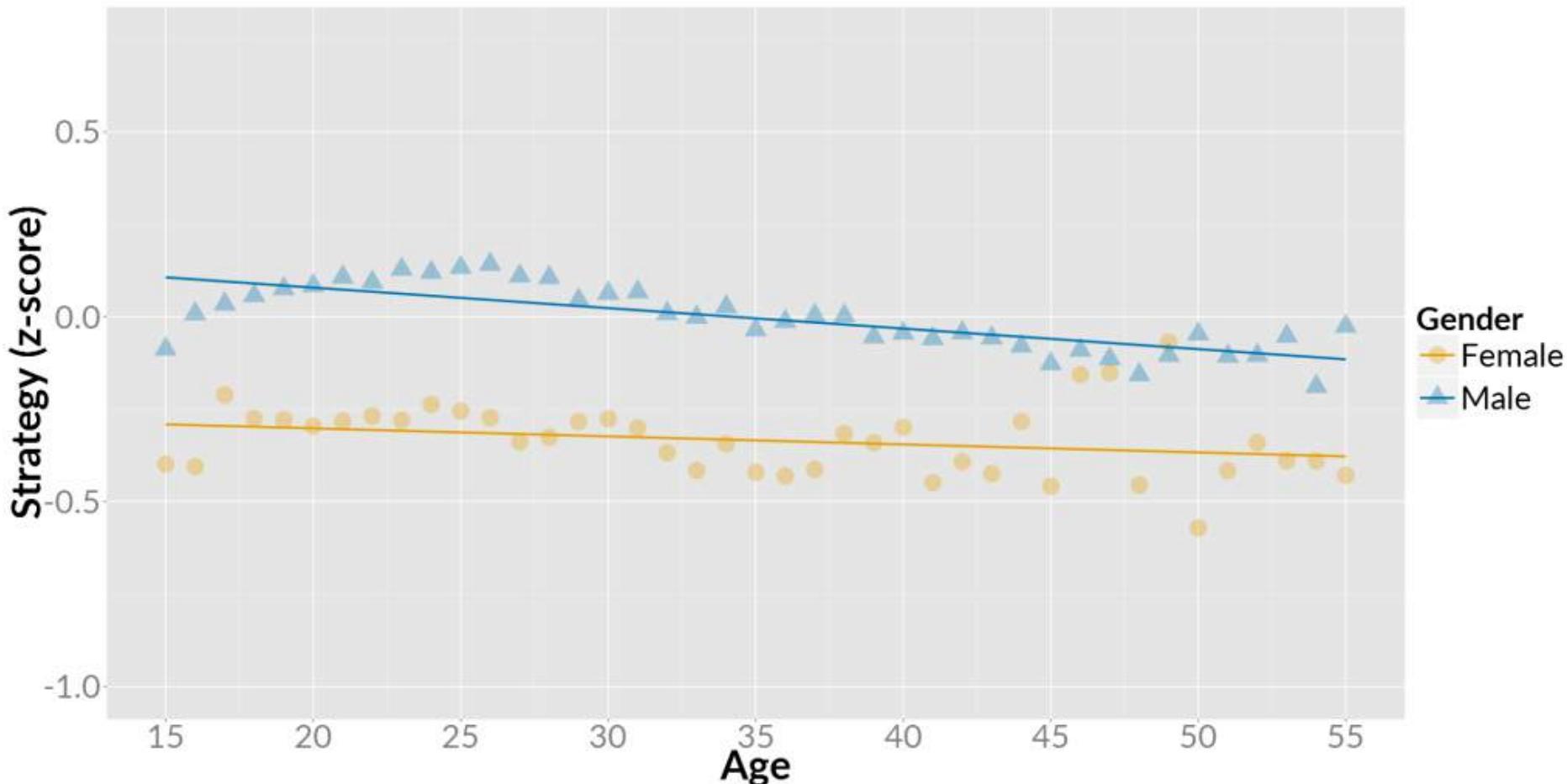
10



* Adapted from Nick Yee “As Gamers Age, The Appeal of Competition Drops The Most. Strategy is The Most Age-Stable Motivation.”

Gender Differences and Age: Strategy

11



* Adapted from Nick Yee “As Gamers Age, The Appeal of Competition Drops The Most. Strategy is The Most Age-Stable Motivation.”

Gender Differences in games?

Gender Preferences

13

- Male
 - Mastery
 - Competition
 - Destruction
 - Spatial Puzzles
 - Trial and Error
- Female
 - Emotion
 - Real World
 - Nurturing
 - Dialog and Verbal Puzzles
 - Learning by Example



Illustration by Nick Daniel

To use this lens, stop thinking about your game,
and start thinking about your player.

Ask yourself these questions about the people
who will play your game:

- In general, what do they like?
- What don't they like? Why?
- What do they expect to see in a game?
- If I were in their place, what would I want to see in a game?
- What will they like or dislike about my game in particular?

The Lens of The Player

Temperament Theory: The Four Keirsey Temperaments

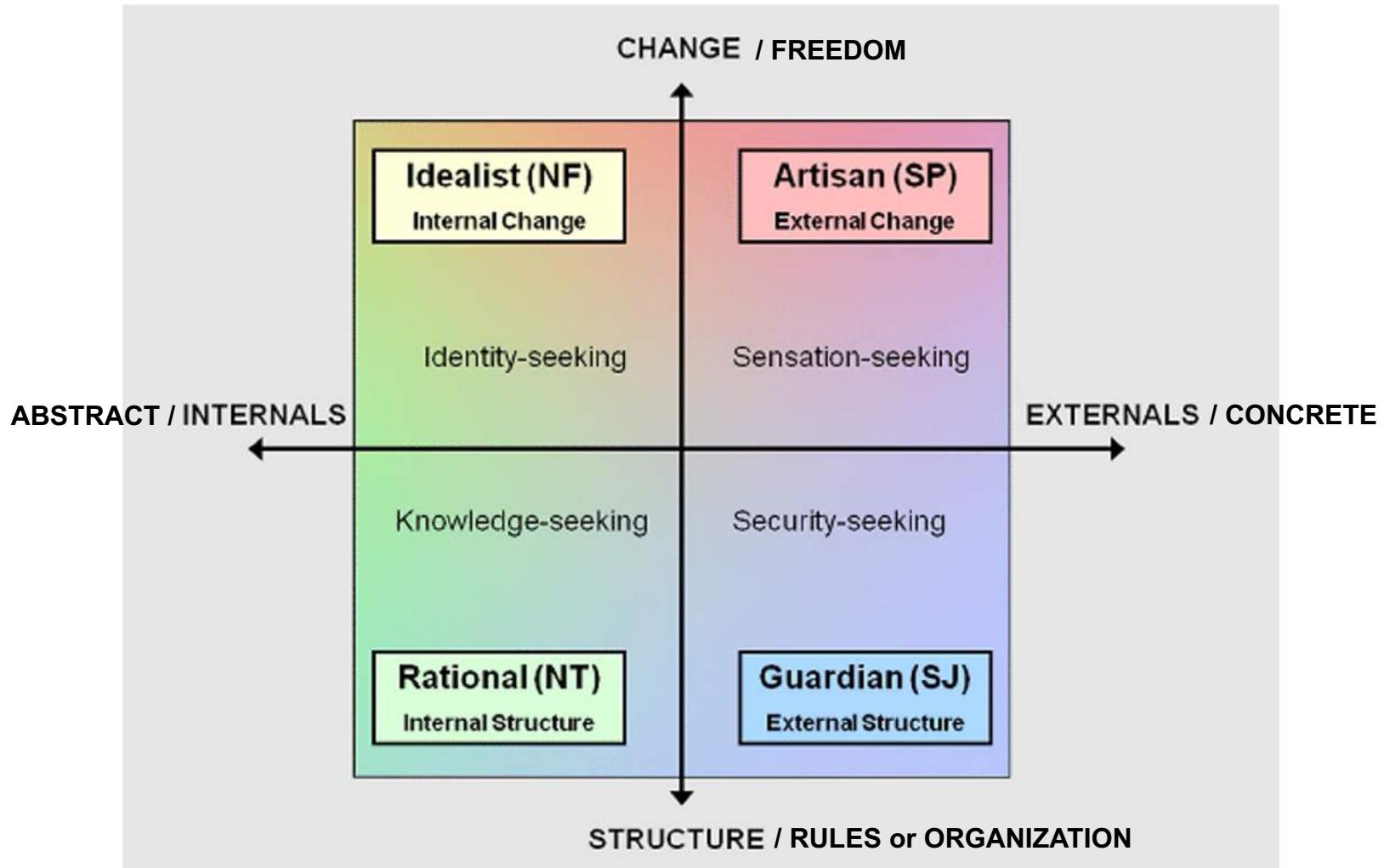
15

In the 1970s, psychologist **David Keirsey** identified four general personality patterns. In his book (co-written with Marilyn Bates) Please Understand Me, Keirsey described these four "temperaments":

- **Artisan:** realistic, tactical, manipulative (of things or people), pragmatic, impulsive, action-focused, sensation-seeking
- **Guardian:** practical, logistical, hierarchical, organized, detail-oriented, possessive, process-focused, security-seeking
- **Rational:** innovative, strategic, logical, scientific/technological, future-oriented, result-focused, knowledge-seeking
- **Idealist:** imaginative, diplomatic, emotional, relationship-oriented, dramatic, person-focused, identity-seeking

Temperament Theory: The Four Keirsey Temperaments

16



The Four Bartle Types: The basic player types

17

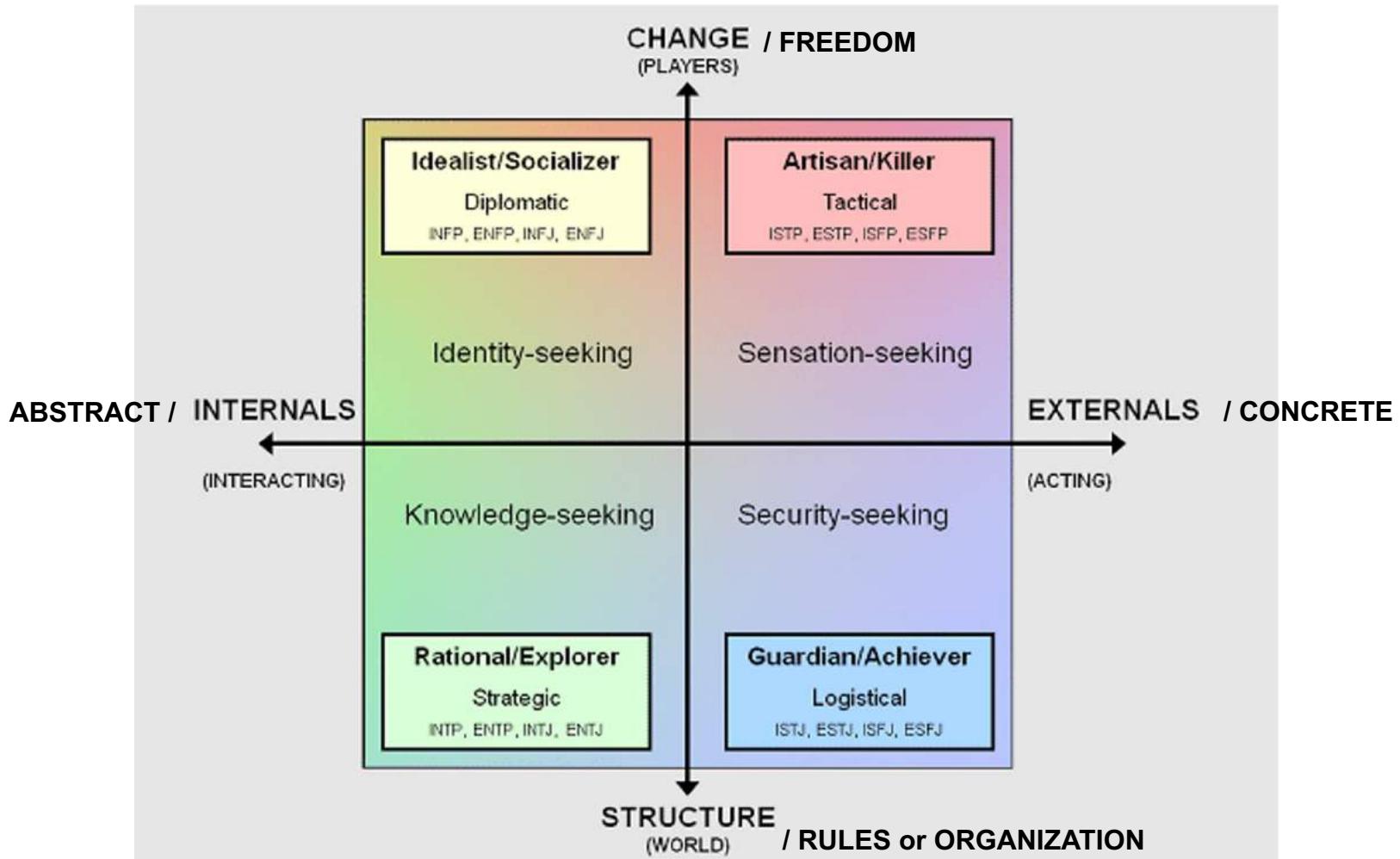
- **Killers:** interfere with the functioning of the game world or the play experience of other players
- **Achievers:** accumulate status tokens by beating the rules-based challenges of the game world
- **Explorers:** discover the systems governing the operation of the game world
- **Socializers:** form relationships with other players by telling stories within the game world

BARTLE	
Killer	Acting (on) Players = External Change
Achiever	Acting (on) World = External Structure
Explorer	Interacting (with) World = Internal Structure
Socializer	Interacting (with) Players = Internal Change

Relation between Keyser and Bartle personality types

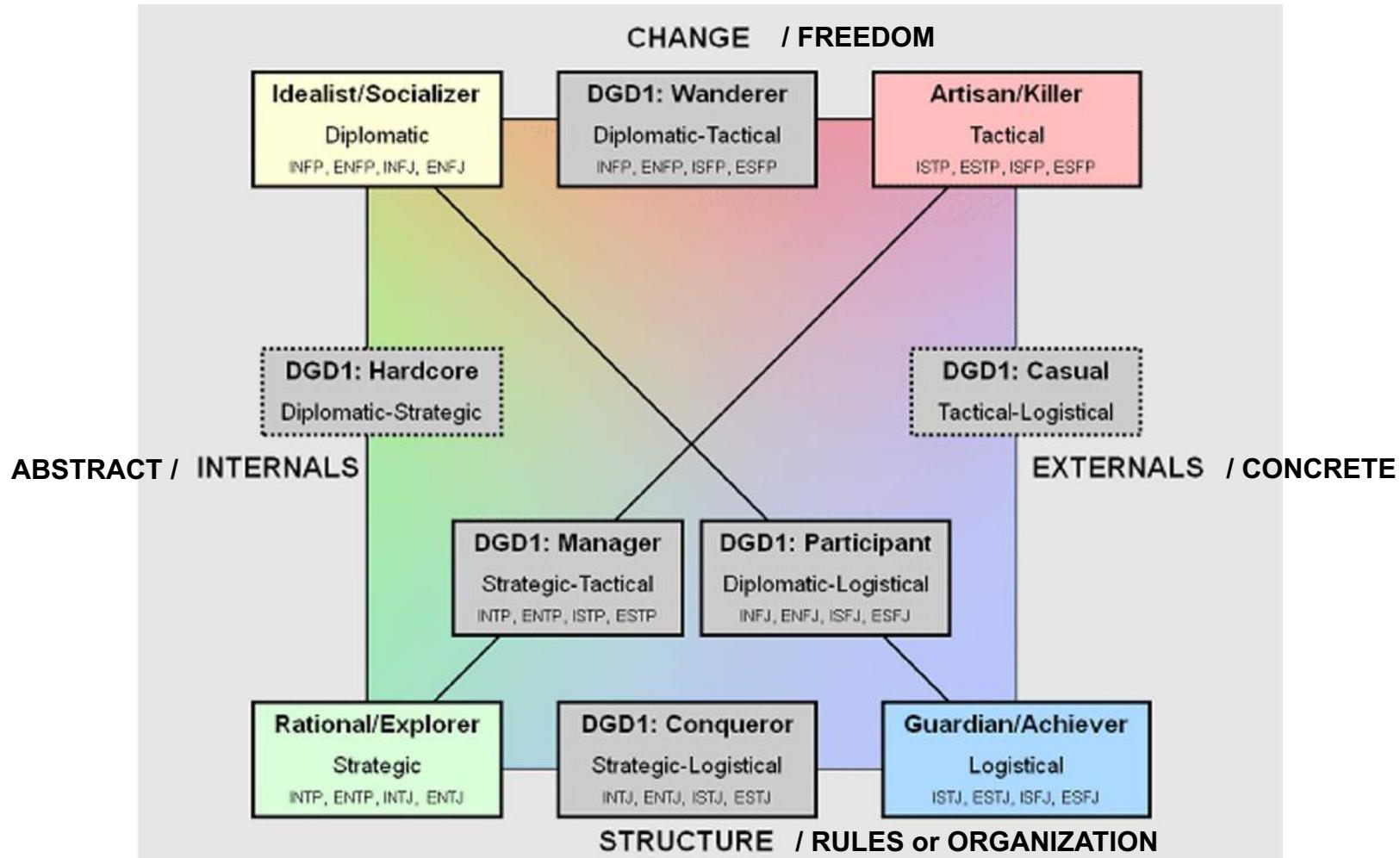
The Four Bartle Types: The basic player types

18



Chris Bateman's “Demographic Game Design” (DGD1) Model

19



Game Play and Games

20

GENRE	TYPICAL GAMES	CORE Play StyleS
FPS	<i>Halo, Call of Duty, Half-Life, Crysis</i>	
CRPG	<i>Darklands, Fallout 1/2, Baldur's Gate</i>	
FPS-CRPG	<i>Deus Ex, BioShock, Mass Effect</i>	
Open-world CRPG	<i>The Elder Scrolls, Fallout 3, Two Worlds</i>	
MMORPG	<i>World of Warcraft, EVE Online, Guild Wars</i>	
MMOG	<i>Unreal Tournament, Team Fortress, any FPS multiplayer mode</i>	
Adventure	<i>King's Quest, Myst, The Longest Journey</i>	
Action	<i>Tomb Raider, Uncharted, Angry Birds</i>	
Survival-Horror	<i>Resident Evil, Dead Space, Amnesia</i>	
Turn-based Strategy	<i>Civilization, Master of Orion, Galactic Civilizations</i>	
Physics Puzzler	<i>Half-Life 2, Portal, World of Goo</i>	
Real-time Strategy	<i>Age of Empires, StarCraft, Supreme Commander</i>	
Flight Simulator	<i>Falcon 4.0, Microsoft Flight Simulator X</i>	
Space Shooter	<i>Wing Commander, Freelancer</i>	
Music	<i>Rock Band, Guitar Hero, Audiosurf</i>	
Simulation	<i>SimCity, Balance of Power, Railroad Tycoon</i>	
Social	<i>FarmVille, Mafia Wars</i>	
Online Gambling	<i>Blackjack, Texas Hold-Em Poker</i>	

Exercise: Which type of player are you?

21

GENRE	TYPICAL GAMES	CORE Play Styles
FPS	<i>Halo, Call of Duty, Half-Life, Crysis</i>	Killer, Achiever
CRPG	<i>Darklands, Fallout 1/2, Baldur's Gate</i>	Achiever, Explorer
FPS-CRPG	<i>Deus Ex, BioShock, Mass Effect</i>	Achiever, Explorer, Killer
Open-world CRPG	<i>The Elder Scrolls, Fallout 3, Two Worlds</i>	Achiever, Explorer
MMORPG	<i>World of Warcraft, EVE Online, Guild Wars</i>	Achiever, Explorer, Socializer
MMOG	<i>Unreal Tournament, Team Fortress, any FPS multiplayer mode</i>	Killer, Achiever
Adventure	<i>King's Quest, Myst, The Longest Journey</i>	Socializer, Explorer
Action	<i>Tomb Raider, Uncharted, Angry Birds</i>	Killer, Achiever
Survival-Horror	<i>Resident Evil, Dead Space, Amnesia</i>	Killer, Achiever
Turn-based Strategy	<i>Civilization, Master of Orion, Galactic Civilizations</i>	Explorer
Physics Puzzler	<i>Half-Life 2, Portal, World of Goo</i>	Killer, Explorer
Real-time Strategy	<i>Age of Empires, StarCraft, Supreme Commander</i>	Achiever, Killer
Flight Simulator	<i>Falcon 4.0, Microsoft Flight Simulator X</i>	Killer, Explorer
Space Shooter	<i>Wing Commander, Freelancer</i>	Achiever, Killer
Music	<i>Rock Band, Guitar Hero, Audiosurf</i>	Killer, Socializer
Simulation	<i>SimCity, Balance of Power, Railroad Tycoon</i>	Explorer
Social	<i>FarmVille, Mafia Wars</i>	Socializer, Achiever
Online Gambling	<i>Blackjack, Texas Hold-Em Poker</i>	Killer, Achiever

Select your top 3 games and find out your type!

Some VERY USEFUL hints!!

22

UNIFIED Play Style	ASSOCIATED GAMEPLAY FEATURES
Artisan/Killer/Experientialist	action, vertigo, tool-use, vehicle use, horror, gambling, speedruns, exploits
Guardian/Achiever/Gamist	competition, collections, manufacturing, high scores, levels, clear objectives, guild membership, min-maxing
Rational/Explorer/Simulationist	puzzles, creative building, world-lore, systems analysis, theorizing, surprise
Idealist/Socializer/Narrativist	chatting, roleplaying, storytelling, cooperation, decorating, pets, social events

Designing a game that's "exciting" and has “lots of rewards” will attract?

What can we design that attracts socializers and killers?

The Lens of Pleasure

24

17

The Lens of Pleasure



Illustration by Jim Rugg

To use this lens, think about the kinds of pleasure your game does and does not provide. Ask yourself these questions:

- What pleasures does my game give to players? Can these be improved?
- What pleasures are missing from my game's experience? Why? Can they be added?

The PLAYER & the GAME

Or “*some other useful
psychology stuff*”...



Player possible states while playing?

26

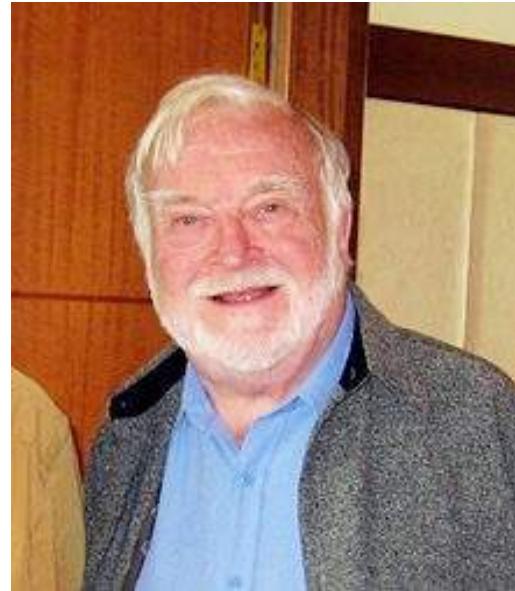
Possible States: Causes??

- Anxiety
- Arousal
- Flow
- Control
- Relaxation
- Boredom
- Apathy
- Worry

Cognitive Flow: The Psychology of Great Game Design

27

- You sit down, ready to get in a few minutes of gaming. Hours pass and you suddenly become aware that you're making ridiculous faces and moving like a contortionist while trying to reach that new high score. You ask yourself: **Where did the time go?**
- They happen because you've reached a **critical level of engagement** with whatever game you're playing.



Mihaly Csikszentmihalyi: He was noted for both his work in the study of happiness and creativity and also for his notoriously difficult name

Flow: Simplified model

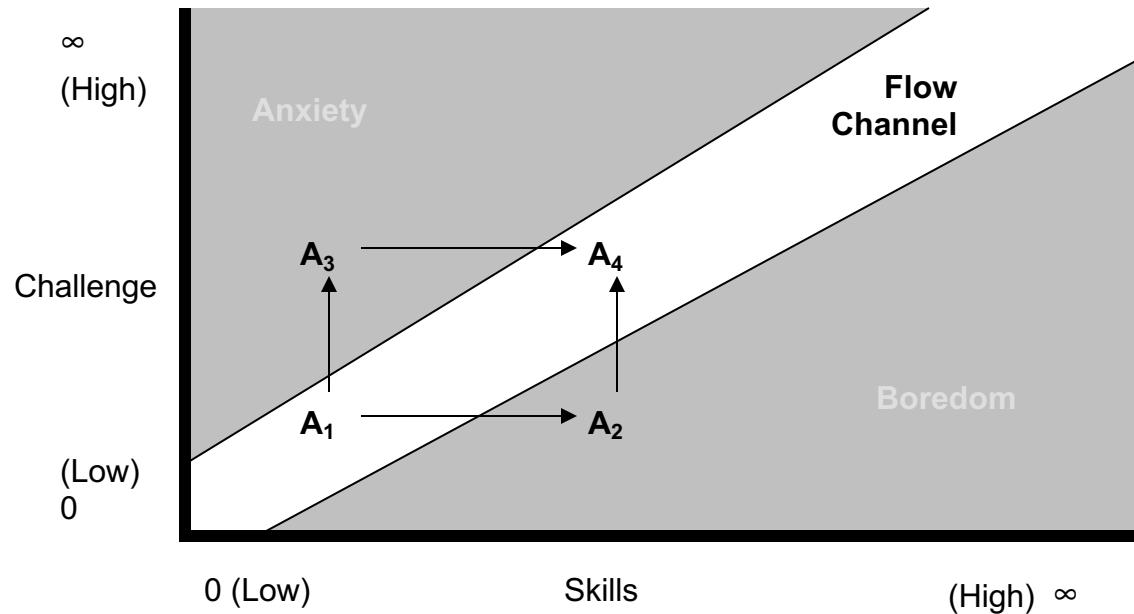
28

Csikszentmihalyi found that a person's skill and the difficulty of a task interact to result in different **cognitive** and **emotional** states



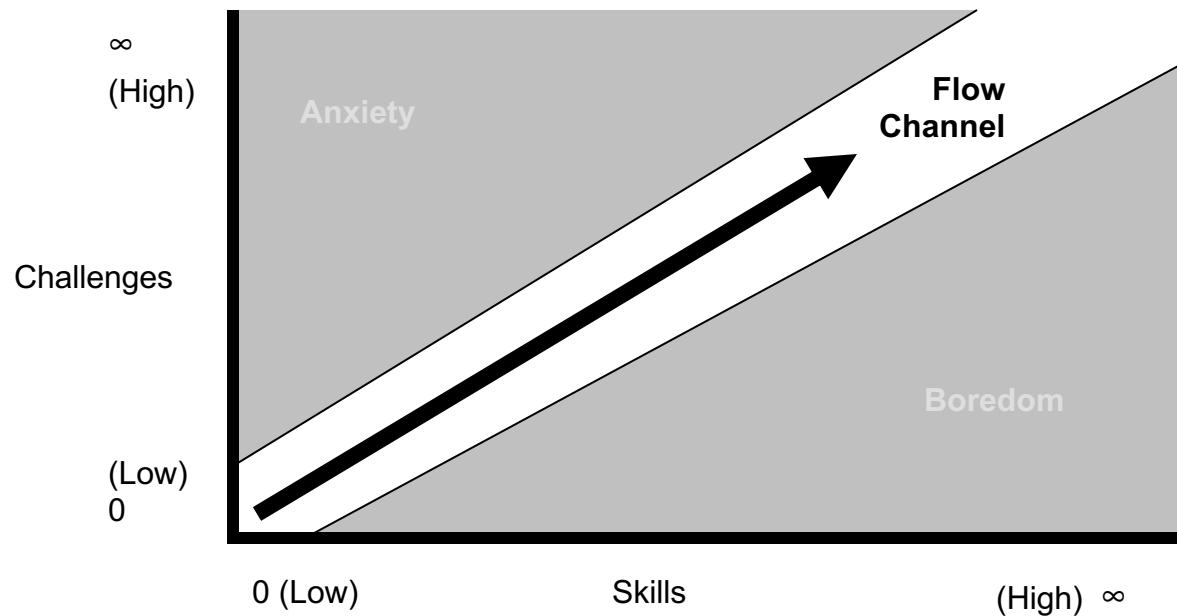
Flow: Simplified model

29



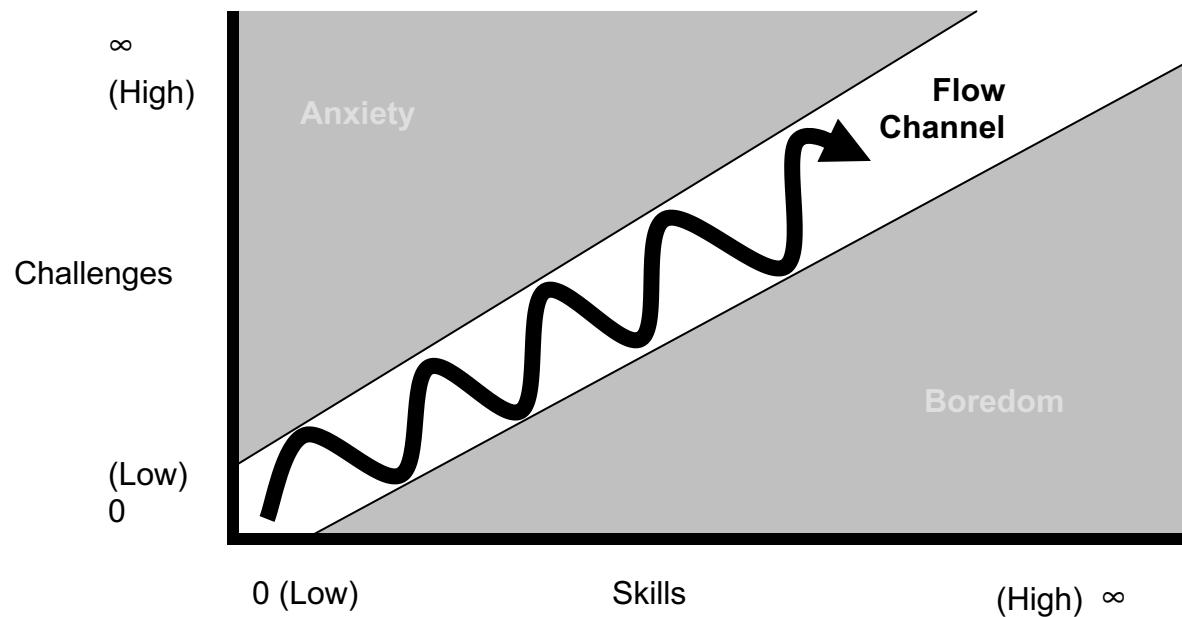
Good

30



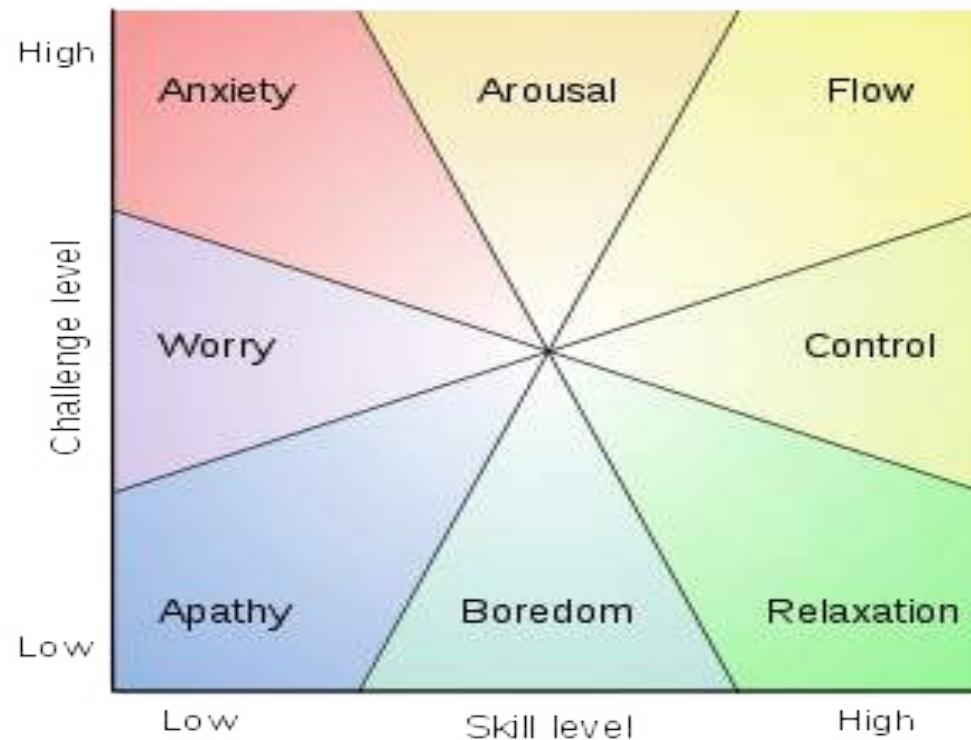
Better !!

31



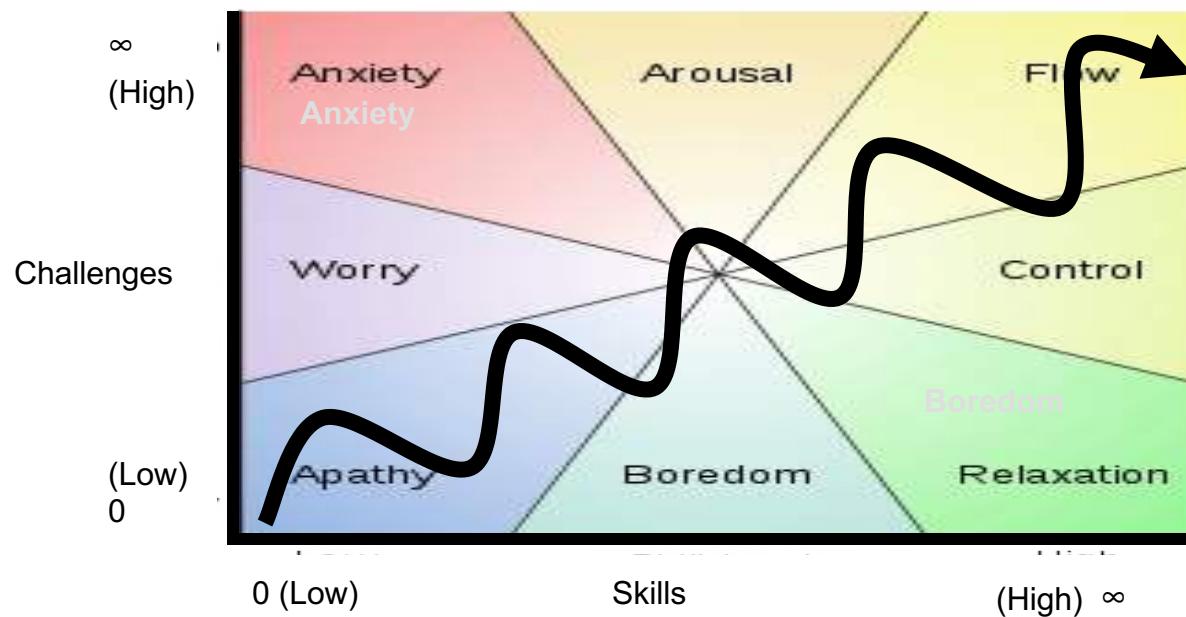
Flow: Complex model

32



Flow

33



How to achieve Flow??

34

COGNITIVE
FLOW

1. Extreme **focus** on a task.
2. A sense of **active control**.
3. Merging of **action and awareness**.
4. Loss of self-awareness.
5. **Distortion of the experience** of time.
6. The **experience of the task** being the only necessary justification for continuing it.

1 - Concrete goals with manageable rules

35

Flow breaks down when a player **doesn't know what their goals are**, how they're expected to accomplish them.

Everything from the user interface to the play screen should **clearly direct or cue the gamer** to their task.

- **We have limits** on our information processing and attentional capabilities.
 - Critical processing restrictions occur when our attention is divided (**too quickly presentation or multiple sources compete for our attention**).
 - **Congruency** between directions and task.

Because divided attention hurts comprehension, goals and **directions should not be given during high stimulation**

1- Concrete goals with manageable rules

36

- **Problem solving and decision-making abilities** are directly affected by information processing and attentional issues
 - ▣ If people do not understand the nature of a problem, they can become **frustrated** attempting to solve it.
 - ▣ When overwhelmed with too much stimulation, people will often **revert to methods** of problem solving that have worked in the past.

Introducing **new mechanics** mid-game may inhibit Flow.

- Sometimes this is necessary and leads to increasingly fun and dynamic game-play.
- When this happens care should be taken to train the player on new skills

- **Concrete goals with manageable rules are achievable**

- ▣ **Goal-achievement-reward cycle** can keep gamers glued to a game and facilitates Flow states.

The **completion of small goals** (e.g., clearing a field of boars) **links to larger goals** (e.g., getting enough XP to level up), which in turn **link to even larger goals** (e.g., getting access to level-specific gear).



Illustration by Joseph Grubb

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

- *What does my game judge about the players?*
- *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?*

The Lens of Judgment

2- Games should only demand actions that fit within a player's capabilities

38

- **Stress and performance affect Flow:**
 - ▣ Stress-provoking *drops in performance*
 - ▣ Drives down the overall enjoyment of the gaming *experience*.

- **Goal difficulty and player perseverance:**
 - ▣ If goals become increasingly difficult to accomplish (in relation to player skill), commitment to accomplishing these goals diminishes.

Yerkes–Dodson law

39

- Robert Yerkes contributed greatly to the field of comparative psychology.
- He founded the first primate research laboratory in the United States and served as its director from 1929 until 1941.



ROBERT MEARN YERKES

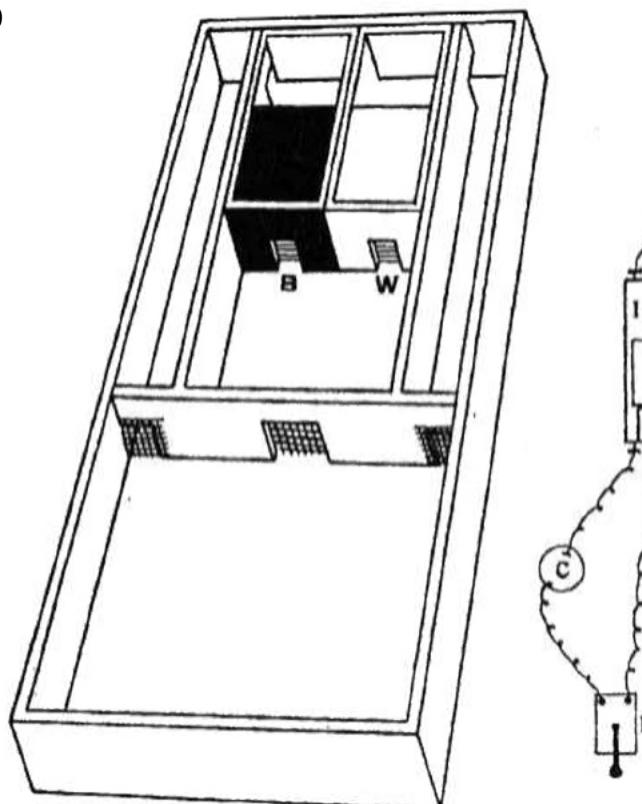


FIG. 1.

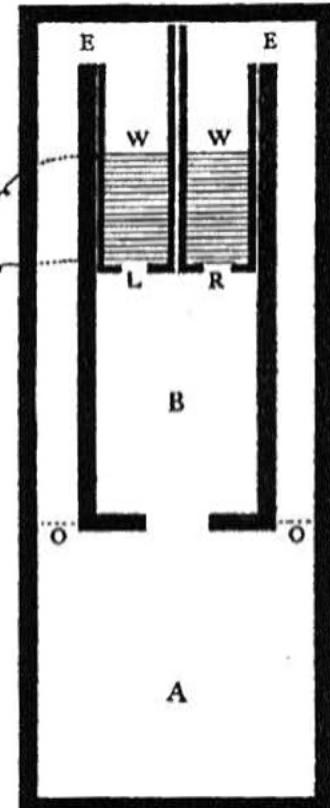


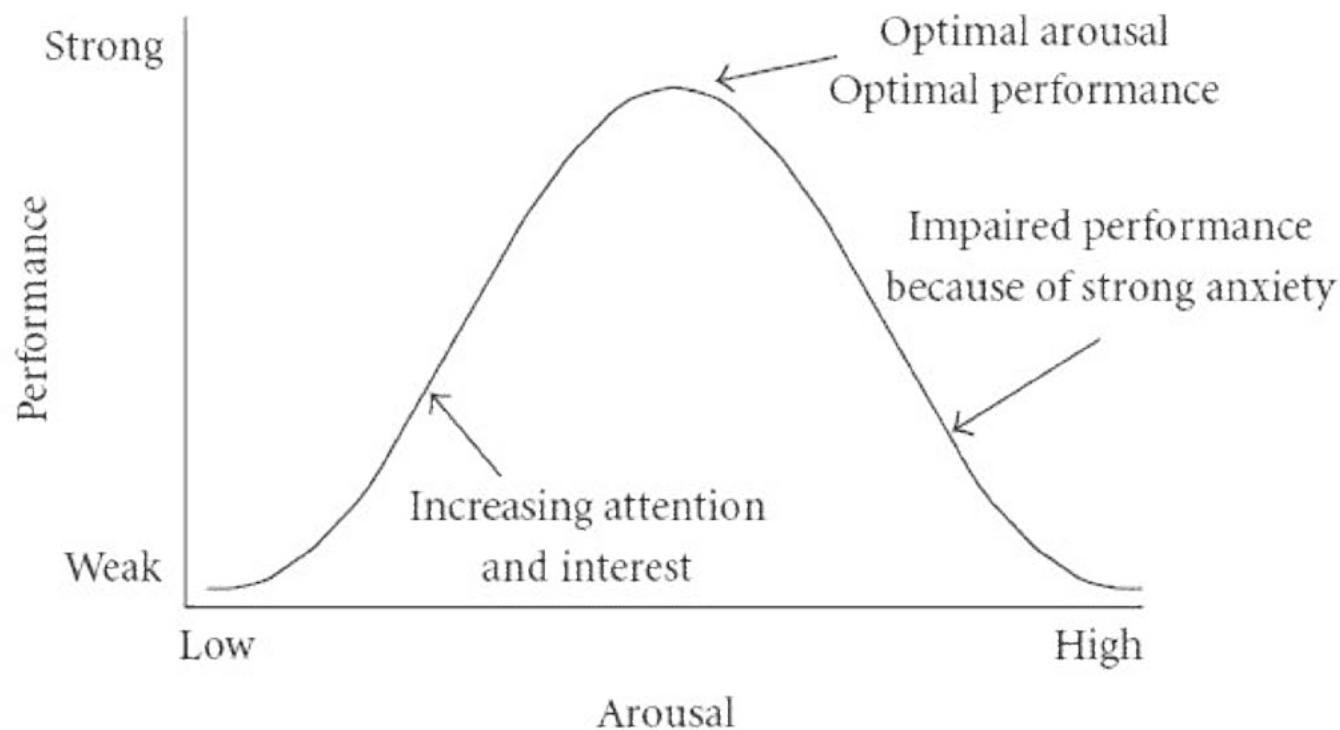
FIG. 2.

* Yerkes & Dodson , 1908

Yerkes–Dodson law

40

Originally developed by psychologists Robert M. Yerkes and John Dillingham Dodson in 1908



2- Games should only demand actions that fit within a player's capabilities

41

- Each gamer has a unique performance-stress curve → **coarse gradations** of game difficulty (e.g., Easy, Normal, Hard) may not lead to an optimal experience for many gamers.

Include **AI** that are able to dynamically adjust the in-game conditions affecting difficulty, thus positively affecting player performance.

- Some players may perform extremely well when dynamic difficulty is increased; however, they **may not enjoy** → quits

Certain **game-specific skills** must be slowly taught to players.

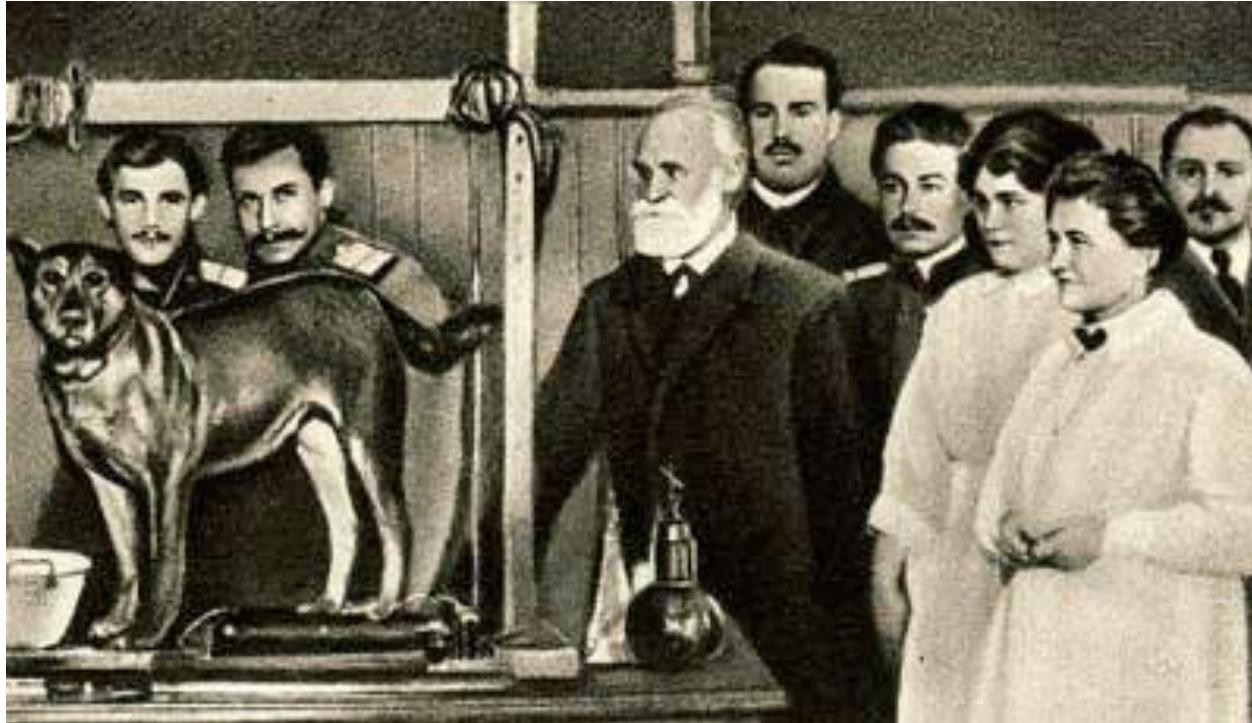
3- Games should give clear and timely feedback on player performance

42

- **Feedback == learning mechanism**

Pavlov's classical conditioning

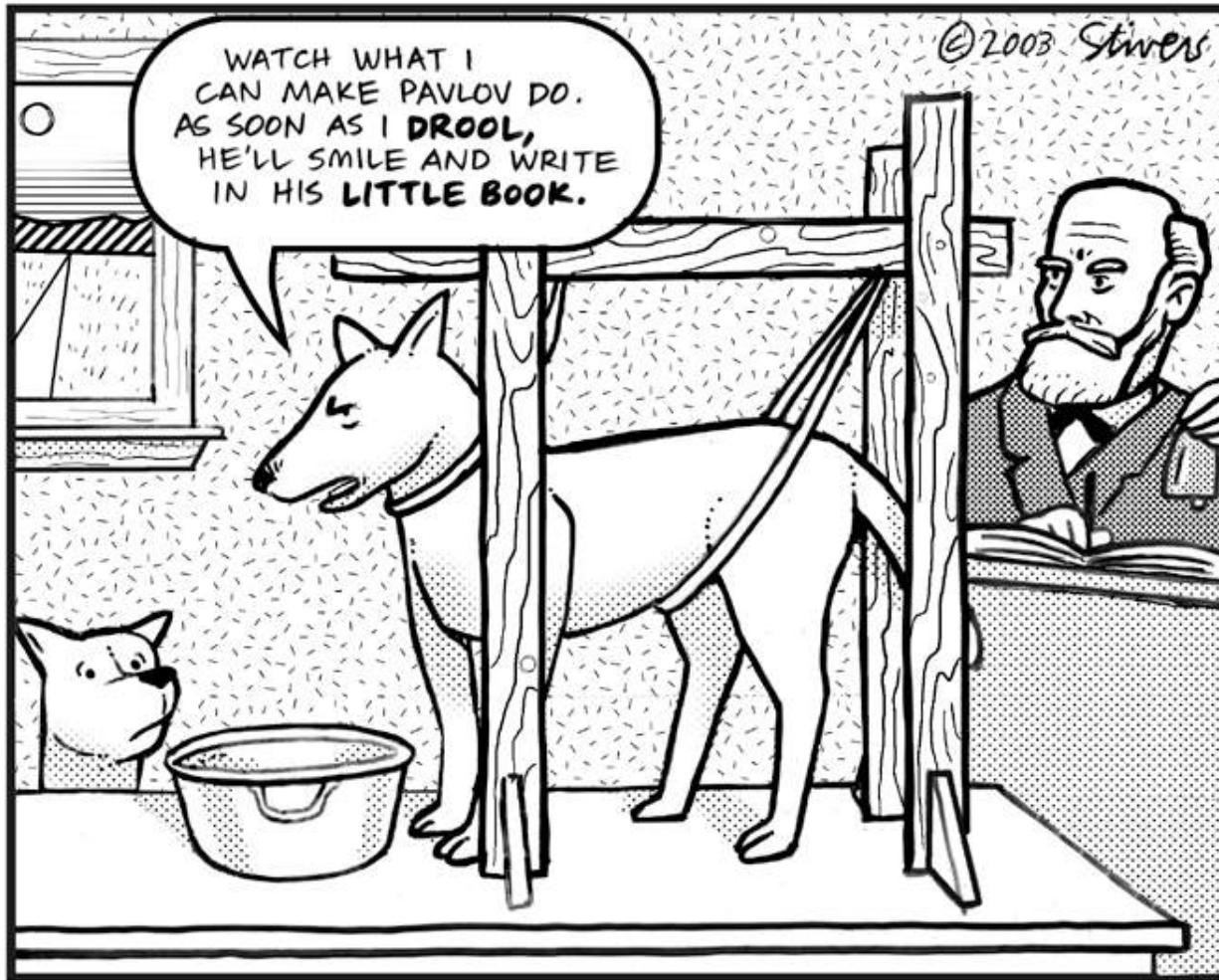
43



- In 1900, **Ivan Pavlov**, a Russian biologist, performed experiments with dogs that proved their reflexes could be conditioned by external stimuli.

Pavlov's classical conditioning

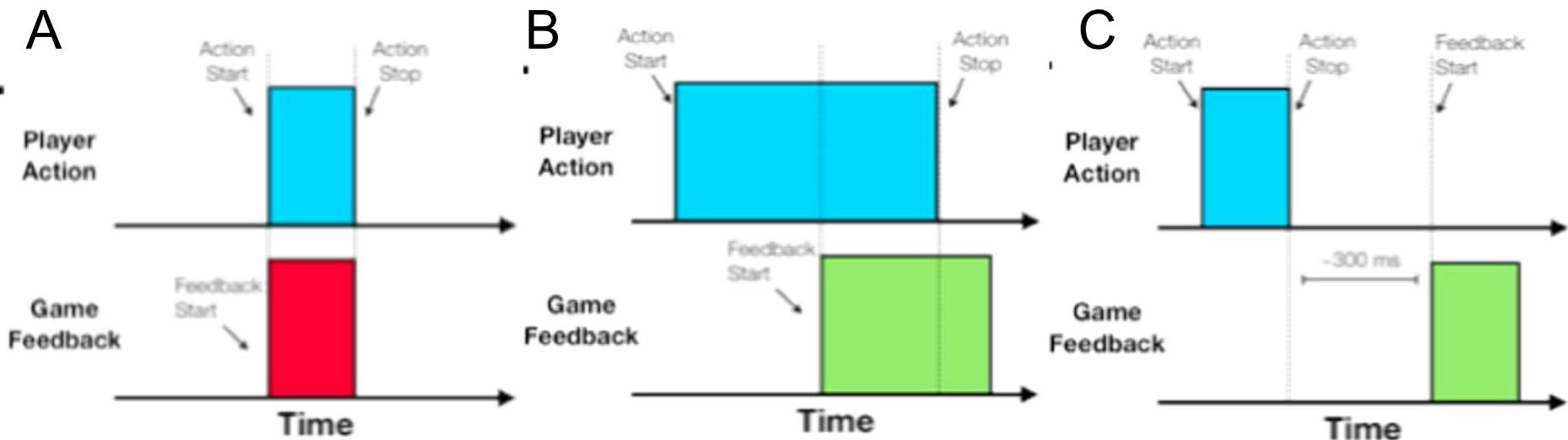
44



3- Games should give clear and timely feedback on player performance

45

- Feedback == learning mechanism
- For medium and long-term goals (completing a level, or the game) **feedback on progress can drive further engagement** and eventual accomplishment.



3- Games should give clear and timely feedback on player performance

46

- **Feedback == Sound, experience bar, points, flash, red vision, etc...**
- **Our innate learning and conditioning mechanisms.**

Feedback that occurs directly after (200 to 400 milliseconds) or midway through the completion of an action leads to the formation of the **strongest associations** between action and outcome.

3- Games should give clear and timely feedback on player performance

47

- If there is a critical ***disconnect*** between an action and an outcome the gamer will fail to understand how their action affected their in-game performance.

Establish mechanisms and displays of ***both long-term and short-term goal accomplishment.***

4- Games should remove any extraneous information that inhibits concentration

48

- We are ***limited*** in how much information we can process.

Cluttered visual fields ***disrupt*** information processing.

- Disruptions can then negatively affect goal ***comprehension*** and rule ***learning***

Game skills or options should only be included if they are ***relevant*** to the story

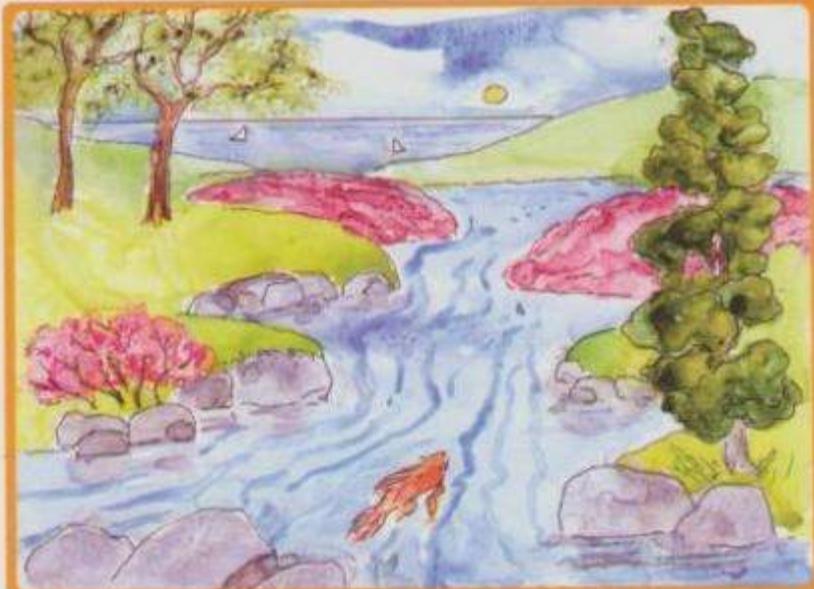


Illustration by Diana Patton

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

Ask yourself these questions:

- Does my game have clear goals? If not, how can I fix that?
- Are the goals of the player the same goals I intended?
- Do parts of the game distract players so they forget their goal? If so, can these distractions be reduced, or tied into the game goals?
- Does my game provide a steady stream of gradually increasing challenges?
- Are the player's skills improving as expected? If not, how can I change that?

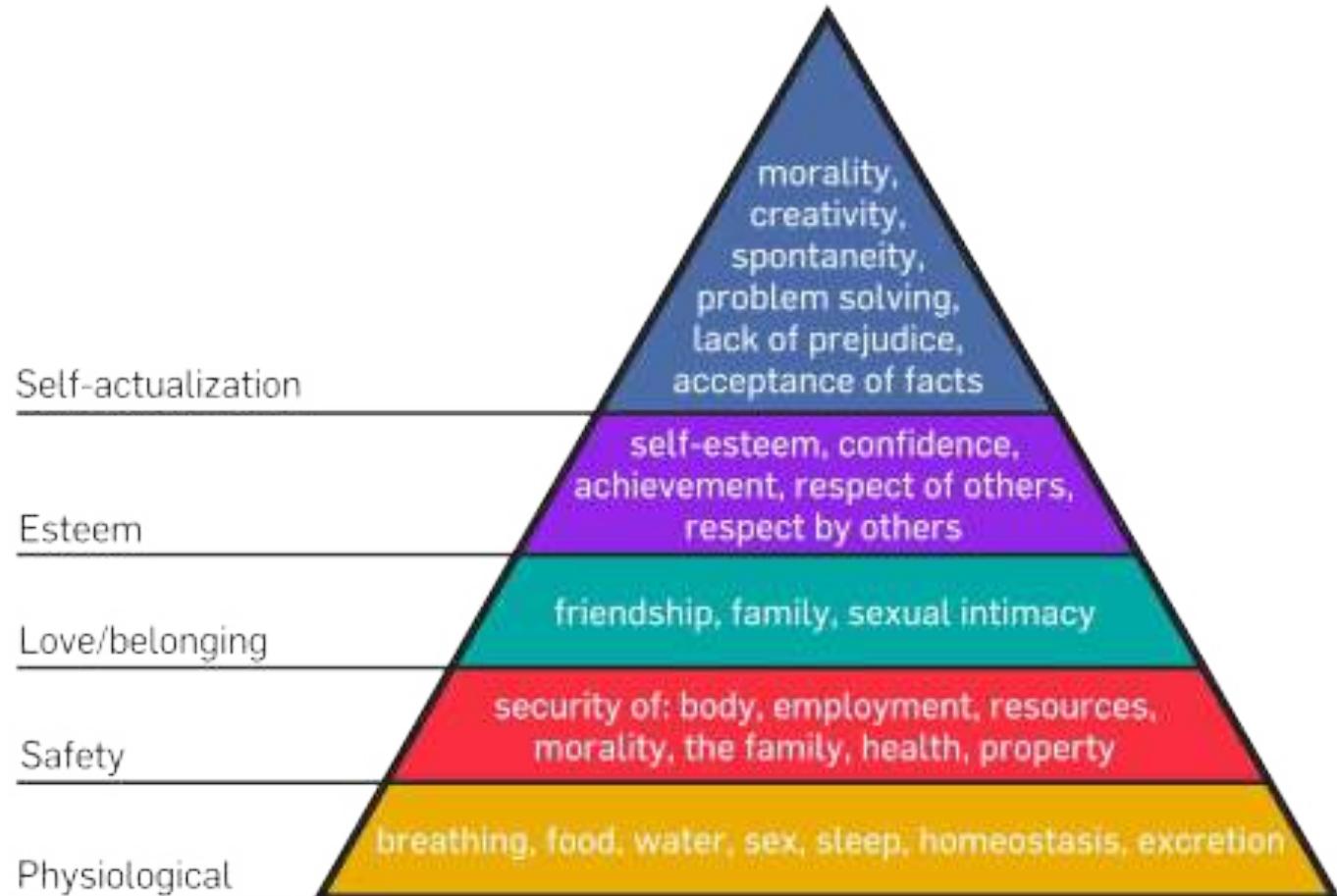
The Lens of Flow

Maslow's Hierarchy of Needs

50



Abraham Maslow
in 1943 proposed
the hierarchy of
needs



Application to rewards

51

immersive world/gameplay, highly customisable player experience, strong sense of community and competition.

The Lens of Needs

52

19

The Lens of Needs

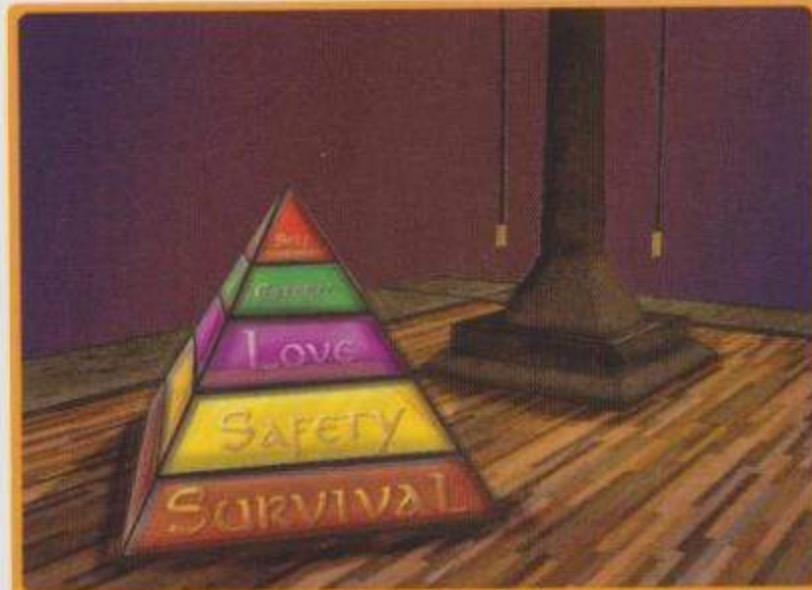


Illustration by Chuck Hoover

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

- On which levels of Maslow's hierarchy is my game operating?
- How can I make my game fulfill more basic needs than it already is?
- On the levels my game is currently operating, how can it fulfill those needs even better?

So, why do we play games??

53





Want to read more about psychology and games?

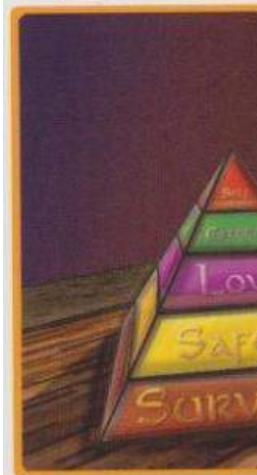
55

- PENS: www.immersyve.com
- Interesting Blog:
<http://www.psychologyofgames.com/>
- Book: *Playing Video Games: Motives, Responses and Consequences* edited by Peter Vorderer
- Personality And Play Styles: A Unified Model:
http://www.gamasutra.com/view/feature/6474/personality_and_play_styles_a_.php
- Sources:
 - *Cognitive Flow: The Psychology of Great Game Design* by Sean Baron
 - *Personality And Play Styles: A Unified Model By Bart Stewart*

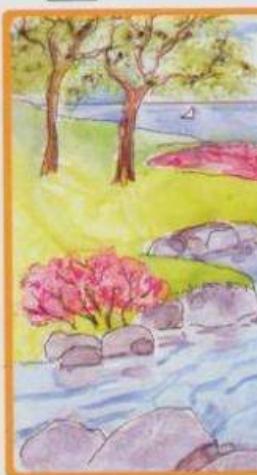


Lens Review: 5 new lenses!

19



Th 18



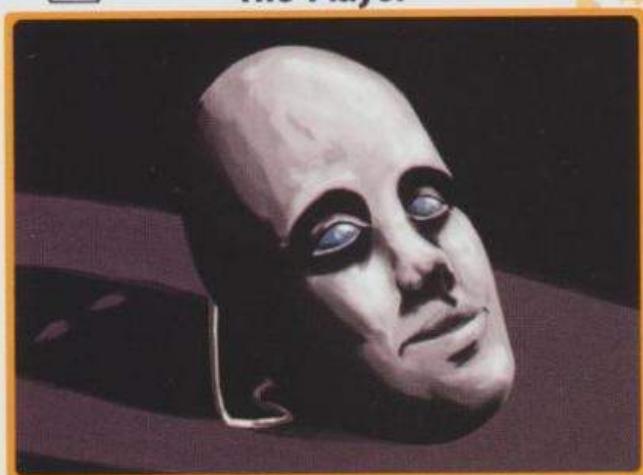
Th 20



The Jud



The Len
Pleas



The Lens of
The Player

Illustration by Nick Daniel

To use this lens,
and start thinking
it fulfills. Ask
yourself:

- Does my game have a purpose?

- Are the goals of the game clear?

- On which levels of my game are the goals operating?

- How can I make my game more challenging than it already is?

- On the levels my game is operating, are there ways to fulfill those needs even better?

To use this lens,
you need to think
about your players.
Ask yourself:

- To decide if your game fulfills its purpose, ask yourself:

To use this lens, think about what pleasure your game does for your players. Ask yourself the following questions:

To use this lens, stop thinking about your game, and start thinking about your player. Ask yourself these questions about the people who will play your game:

- Does my game have a purpose?
- Are the goals of the game clear?
- Do parts of the game fulfill the main goal? If so, can these parts be removed without changing the main game goals?
- Does my game provide increasing challenges for the players?
- Are the player's skills developed through the game? If so, can I change that?

- What does my game judge?
- How does it communicate its rules?

- Do players feel the judgment is fair?
- Why? Can they be added?

- Does the judgment make sense?

- In general, what do they like?

- What don't they like? Why?

- What do they expect to see in a game?

- If I were in their place, what would I want to see in a game?

- What will they like or dislike about my game in particular?

Questions??

57



For more information contact:

mary.barreto@staff.uma.pt



“

Game Design: Lecture 6 - Story

”



UNIVERSIDADE da MADEIRA

MDMi Master of
Interactive
Media Design

Sergi Bermúdez i Badia
<sergi.bermudez@uma.pt>

Exercise 2: Casual Game in Unity

Due via moodle, Friday April 22th,
11:00



Individually you will work on the creation of a casual game in Unity. On the 26th you will present your exercise in class in max 10 minutes (with slides) and we will play them. For this assignment, you will create a casual game based on simple game mechanics and document the process as you go.

Goal:

The main idea here will be that you will implement a single-player game that follows the **Flow theory**, increasing the level of challenge with the level of skill of the player. Similar to what Tetris does. You will need to **combine skill with chance** (random events in your game).

Part I: Creative process & Iterations

- 1) Brainstorm (document and show it to me in the presentation) at least 20 different game mechanics and select your game candidate.
- 2) For the selected game, make a list of risks (according to what we learned in the lectures), and build your prototype to test them.
- 3) Keep on iterating until your game is satisfactory. You will need to iterate and test at least 3 game versions.

Part II: Unity requirements

- 1) Your game needs to have a 3D game scenario and terrain created by yourself
- 2) You will need to develop your game around the provided assets
- 3) You will have a GUI with a total score
- 4) You will create and use prefabs
- 5) The game logic will be implemented exclusively in **PlayMaker**
- 6) You will use animations
- 7) You will use sounds

You will submit through moodle your slide **presentation** as well as a **build of your game for x64 windows Operating System**.

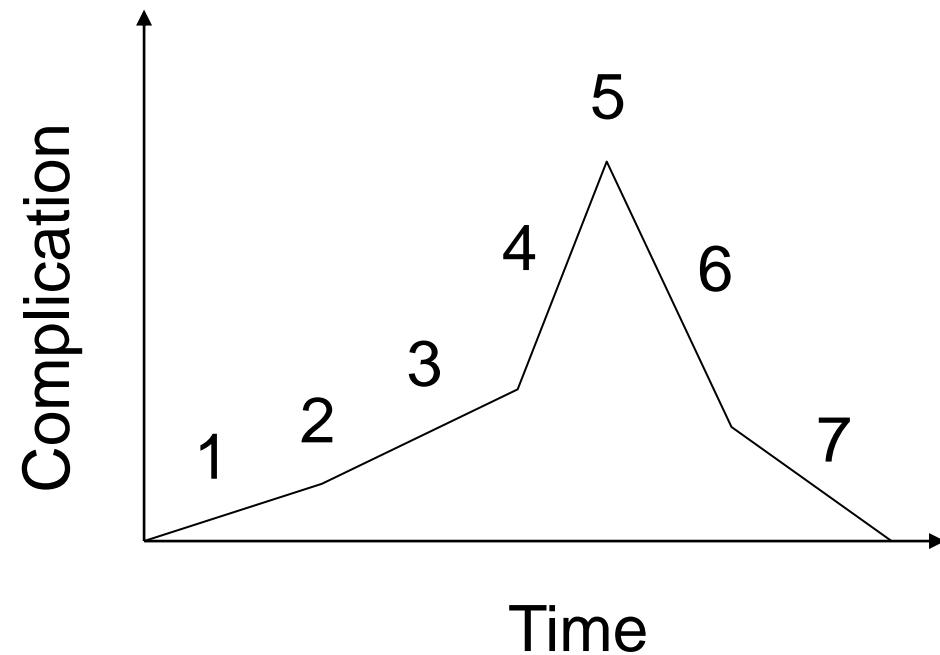
How I will grade (therefore I need irrefutable evidence on):

- 20% Presentation
- 30% Creative process & Iterations
- 50% Implementation

The Myth of Passive Entertainment



Dramatic arc



1. Exposition
2. Inciting incident
3. Rising action
4. Crisis
5. Climax
6. Falling action
7. Denouement

Why Put Stories in Games?



Stories add entertainment



Stories attract a wider audience



Stories maintain players' interest in long games



Stories help sell the game

Why Put Stories in Games? (Cont.)

- ▶ Story should **not** be more important than gameplay
- ▶ Factors when considering how much story to include:
 - ▶ Length of the game
 - ▶ Focus on individual characters
 - ▶ Degree of realism
 - ▶ Emotional richness
- ▶ * by Ernest Adams



Story



A story is an account of a series of events



Requirements of good stories:

A good story must be credible, coherent, and dramatically meaningful



An interactive story includes three kinds of events:

Player events
In-game events
Narrative events

Narrative

Narrative is the part of the story told to the player by the designer

Primary function of narrative is to present events over which the player has no control

- Narrative may be in the form of a movie, cut-scenes, scrolling text, or voiceover
- Narrative must be interruptible
- Balance narrative with action to keep players interested

Agency is the player's power to change the future of the story. Also called **dramatic freedom**.

Dramatic tension and gameplay tension

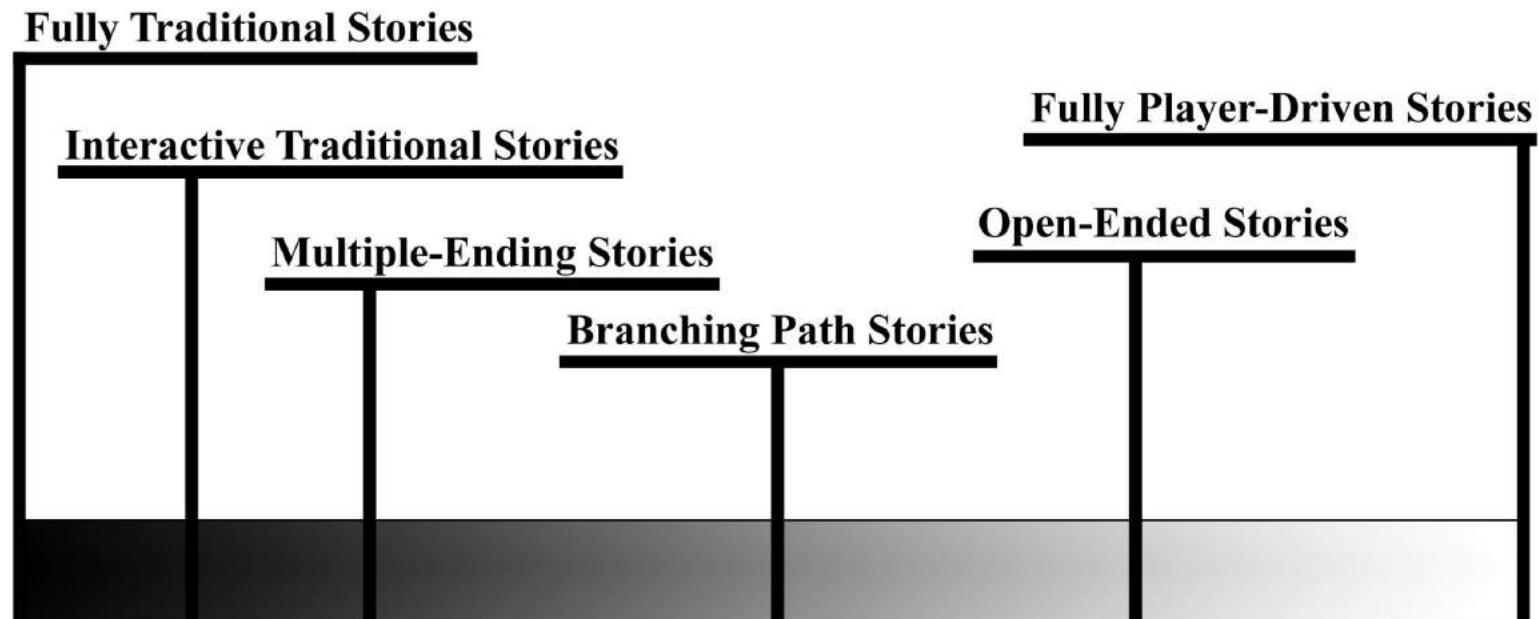
Dramatic tension

- Something important is at stake. What will happen?
- Dramatic tension comes from the plot
- Fades in the presence of randomness and repetition

Gameplay tension

- Something important is at stake. What will happen?
- Gameplay tension comes from the challenges (gameplay)
- Tolerates randomness and repetition for much longer

The Interactive Storytelling Spectrum



* by Josiah Lebowitz

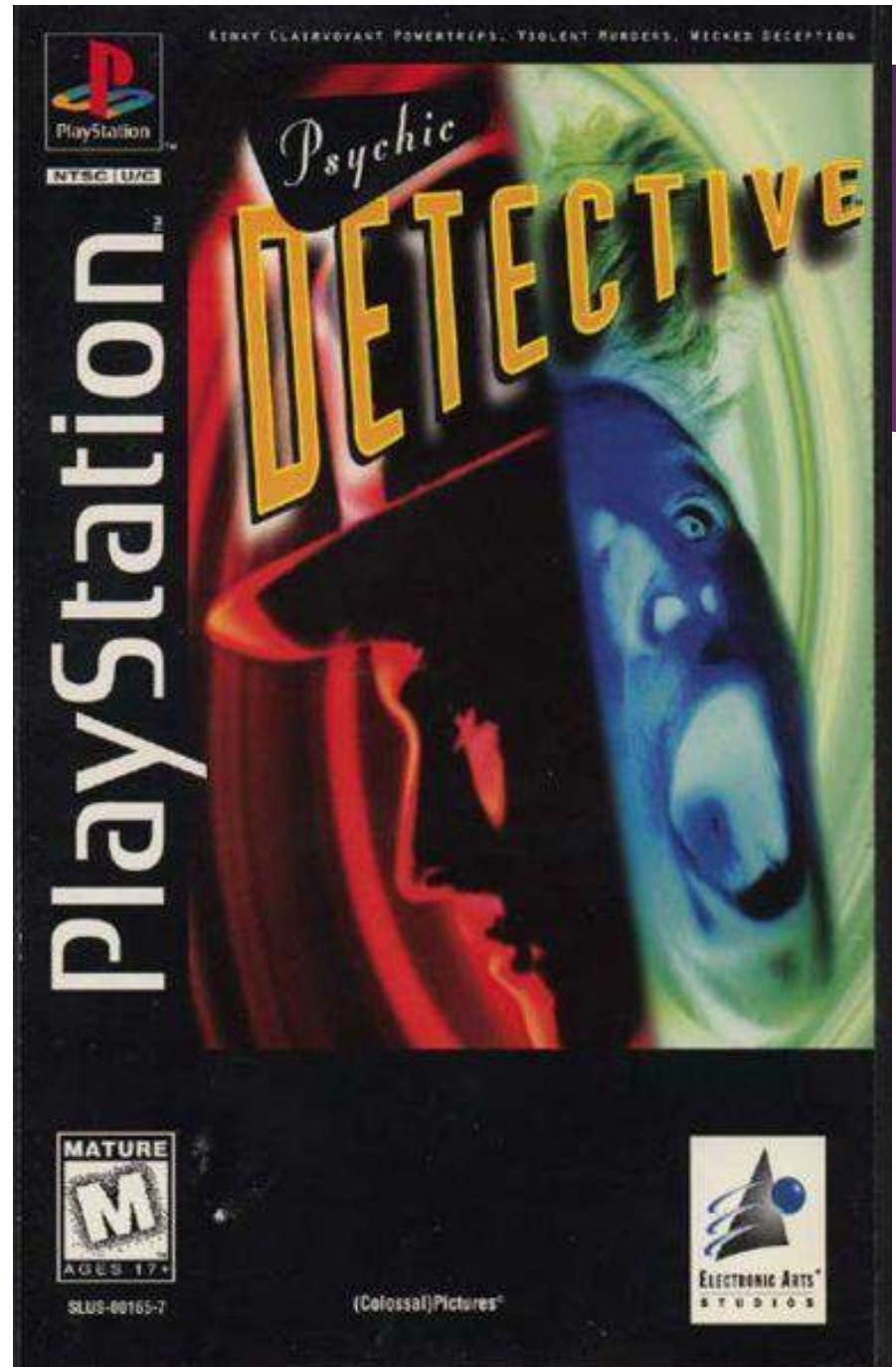
Chris Klug

Fully Traditional Stories

- ▶ The most traditional and classic form of storytelling.
- ▶ Remains exactly the same no matter how many times it's watched, read, or played.
- ▶ Not well suited for video games due to its complete lack of interactivity.
- ▶ **Examples: Harry Potter books, Star Wars movies, etc...**

Interactive Traditional Stories

- ▶ Interactive but not player-driven.
- ▶ The player can interact with the story but cannot significantly change the main plot in any way.
- ▶ Very popular in video games.
- ▶ **Example Games: FINAL FANTASY XIII, Metal Gear Solid 3, Lunar Silver Star Harmony**



Multiple-Ending Stories

- ▶ The simplest type of player-driven story.
- ▶ Very similar to interactive traditional stories.
- ▶ The player is allowed to choose between two or more endings.
- ▶ This choice may be a conscious decision or be made automatically based on the player's actions during the game.
- ▶ **Example Games: CHRONO TRIGGER, Castlevania: Dawn of Sorrow, Bioshock**

Branching Path Stories

- ▶ Allow the player to make a series of choices throughout the course of the game.
- ▶ While some choices only change the story slightly, others can have an enormous impact.
- ▶ The style was popularized in the Choose Your Own Adventure books.
- ▶ **Example Games: Heavy Rain, Fate/Stay Night, Front Mission 3**



Look at Professor Sternhart



Open-Ended Stories

- ▶ Sort of like highly complex branching path stories.
- ▶ The story's progression is often determined more by the player's actions than his response to specific prompts.
- ▶ The main plot is usually short and simple and the primary focus is on creating an interesting world for the player to explore.
- ▶ **Example Games: *Fable II*, *Fallout 3*, *The Elder Scrolls III: Morrowind***

Façade – Mateas & Stern



Fully Player-Driven Stories

- ▶ Gives the player total or near total control of his actions.
- ▶ There is little if any main plot, though there might be various optional sub-plots.
- ▶ The “story” is comprised primarily of the player’s actions in the game world.
- ▶ **Example Games: *The Sims*, *Animal Crossing*, *World of Warcraft***



The Sims

70

The Lens of Story

21

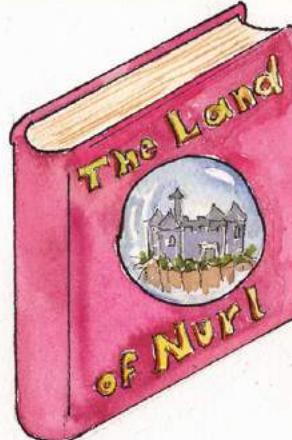


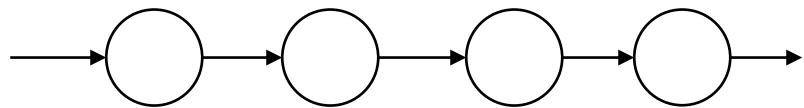
Illustration by Diana Patton

To be sure the story in your game is as good as it can be, ask yourself these questions:

- Does my game really need a story? Why?
- Why will players be interested in this story?
- How does the story support the other parts of the tetrad (aesthetics, technology, mechanics)? Can it do a better job?
- How do the other parts of the tetrad support the story? Can they do a better job?
- How can my story be better?

Traditional Interactive Story Methods

- ▶ Method #1: The String of Pearls



- ▶ Method #2: The Story Machine
 - ▶ Examples?
 - ▶ Beware of the Story Machine problems!!

Surely, MVI is the answer

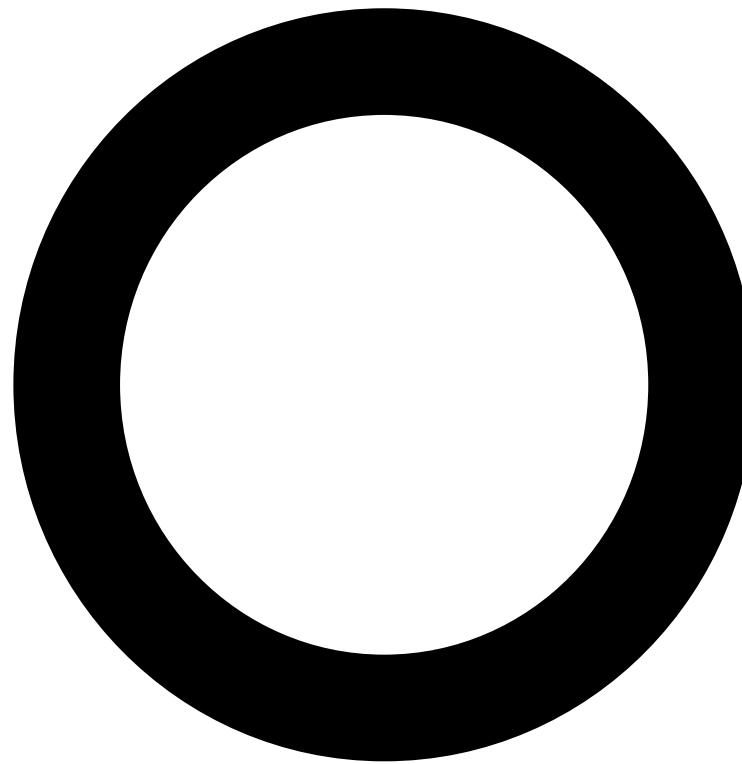
M
y
V
ast
I
ntellect



Five Key Challenges of Interactive Storytelling

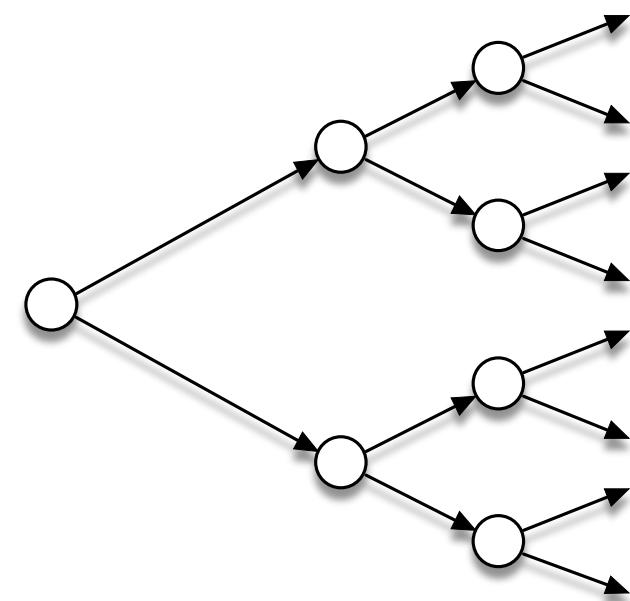


Challenge #1: Good stories have unity



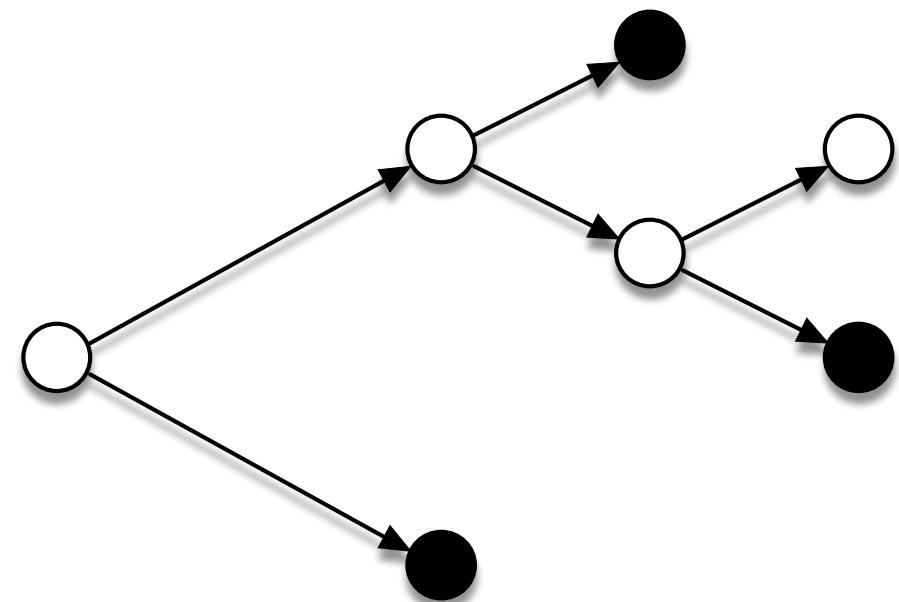
Challenge #2: *The Combinatorial Explosion*

- ▶ Infinite choices
- ▶ Quickly become unmanageable



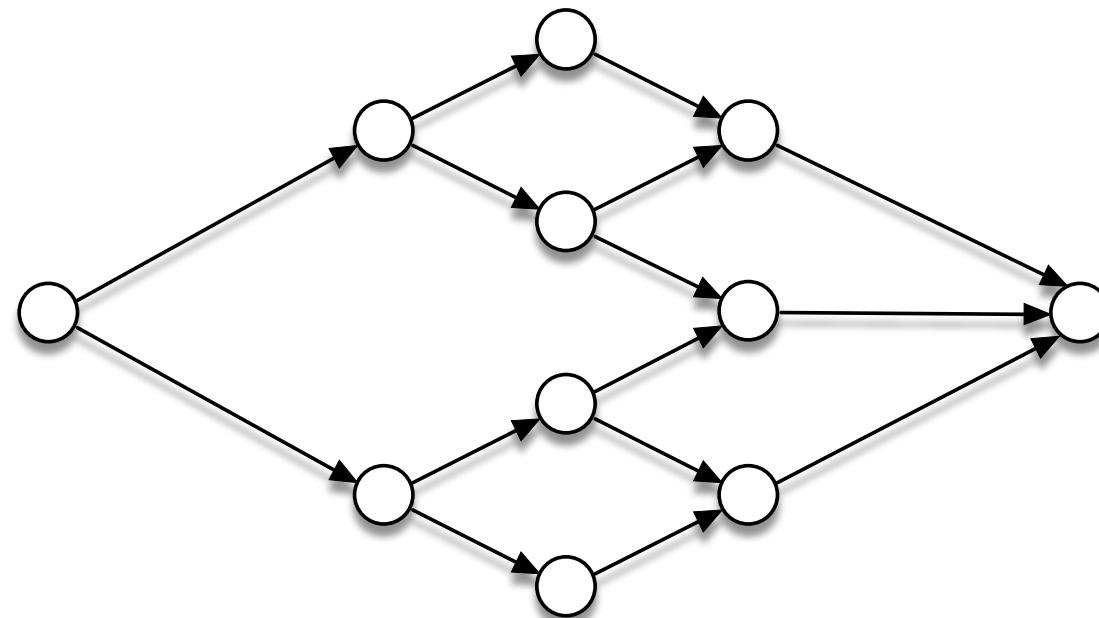
Challenge #2: *The Combinatorial Explosion*

- ▶ Choose wisely
- ▶ Kill off player with any wrong choice
- ▶ Better but frustrating (*Dragon's Lair*)



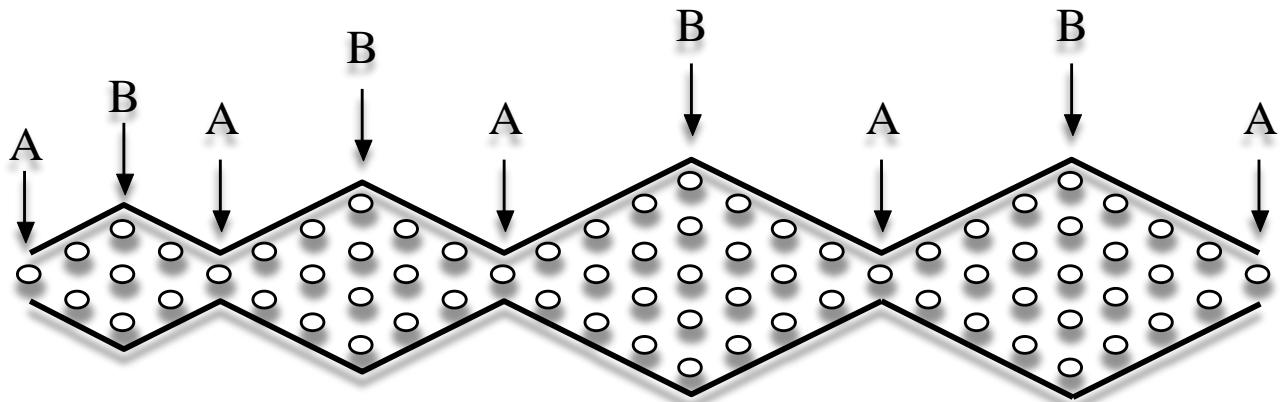
Challenge #2: The Combinatorial Explosion

- ▶ A convexity
- ▶ Starts with a single choice, widens to many choices, returns to a single choice



Challenge #2: The Combinatorial Explosion

- ▶ Give the player choice but not an infinitely expanding set of choices
- ▶ Mix of some “any order” choices (B) and some in fixed order (A), blending freedom with linear storytelling
- ▶ Can be structured so players see most of the game, minimizing waste
- ▶ Can have difficulty go up in new levels



65

The Lens of The Story Machine

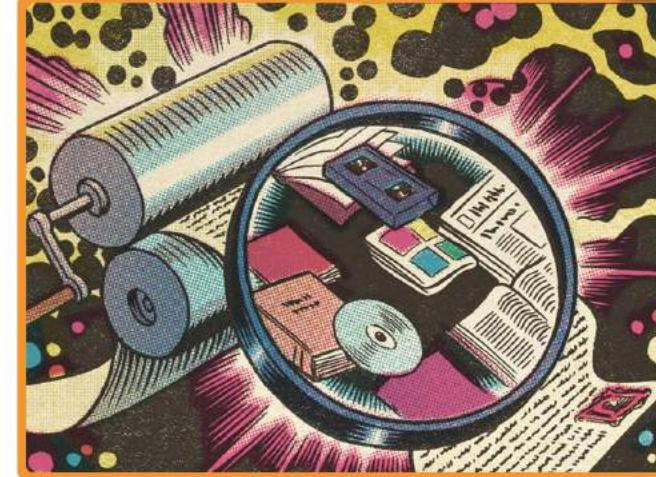


Illustration by Jim Rugg

A good game is a machine that generates stories when people play it. To make sure your story machine is as productive as possible, ask yourself these questions:

- When players have different choices about how to achieve goals, new and different stories can arise. How can I add more of these choices?
- Different conflicts lead to different stories. How can I allow more types of conflict to arise from my game?
- When players can personalize the character and setting, they will care more about story outcomes. How can I let players personalize the story?

Challenge #3: Multiple Endings Disappoint

- ▶ Is this the real ending?
- ▶ Do I have to play this whole thing again to see another ending?



Challenge #4: Not enough verbs



- ▶ **Videogame Verbs:**
run, shoot, jump, climb, throw, cast,
punch, fly
- ▶ **Movie Verbs:**
talk, ask, negotiate, convince, argue,
shout, plead, complain

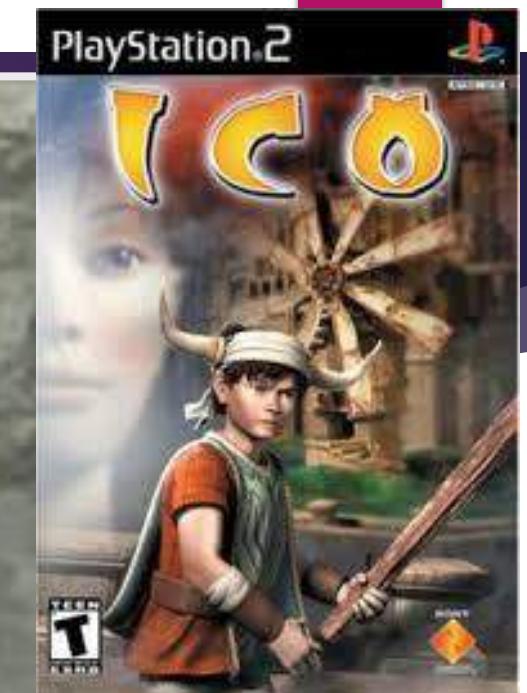
Challenge #5: *Time Travel Makes Tragedy Obsolete*

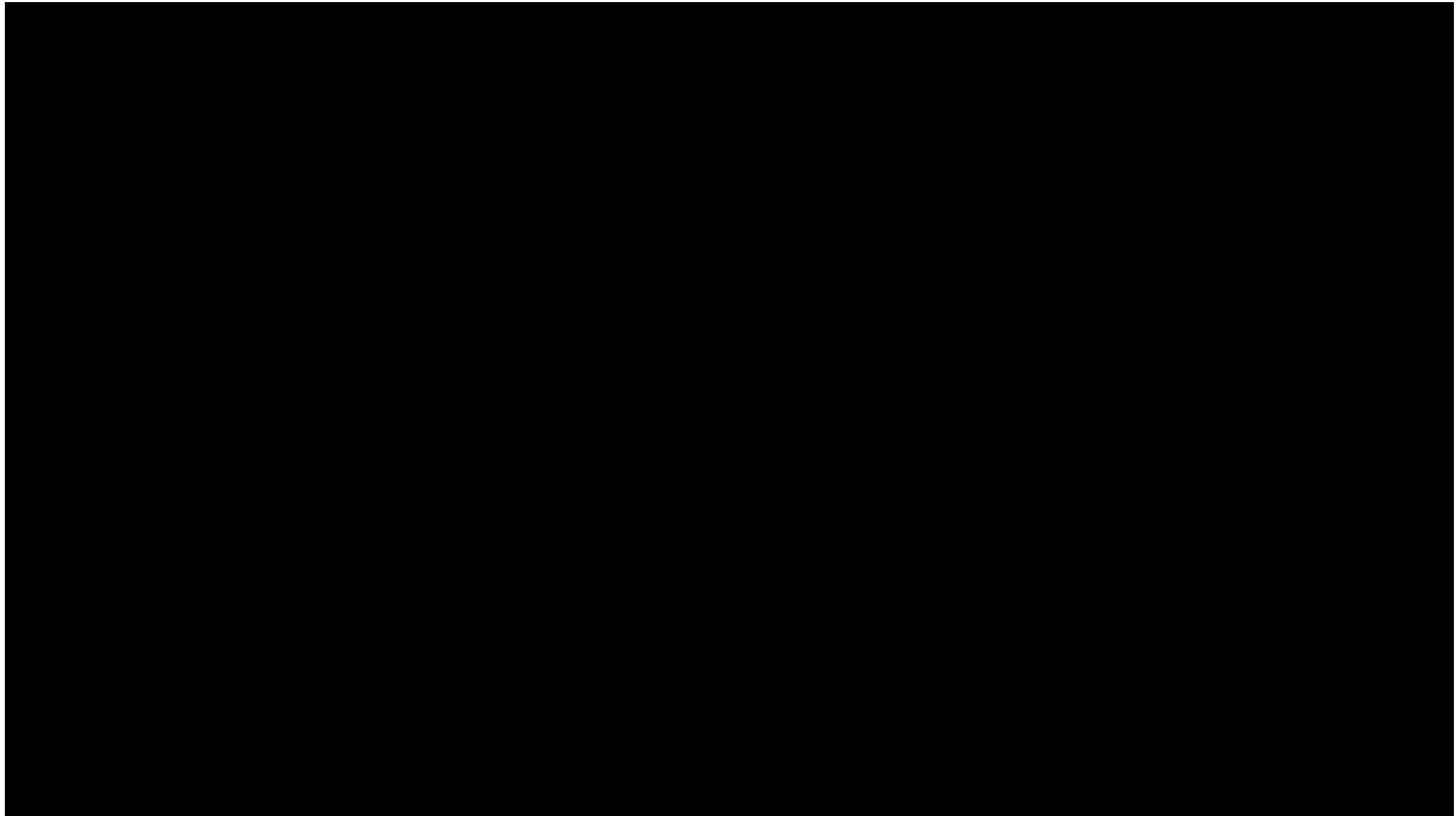


Story Tip #1: *Create Goals, Obstacles, and Conflicts*

- ▶ It is an old maxim of Hollywood screenwriting that the main ingredients for a story are:
 - ▶ A character with a goal
 - ▶ Obstacles that keep him from reaching that goal
- ▶ Goal + Obstacle = Conflict
- ▶ Conflicts are interesting.
- ▶ Keep it simple.

PlayStation.2







Story Tip #2: Use Simplicity and Transcendence!



Medieval



Futuristic

War

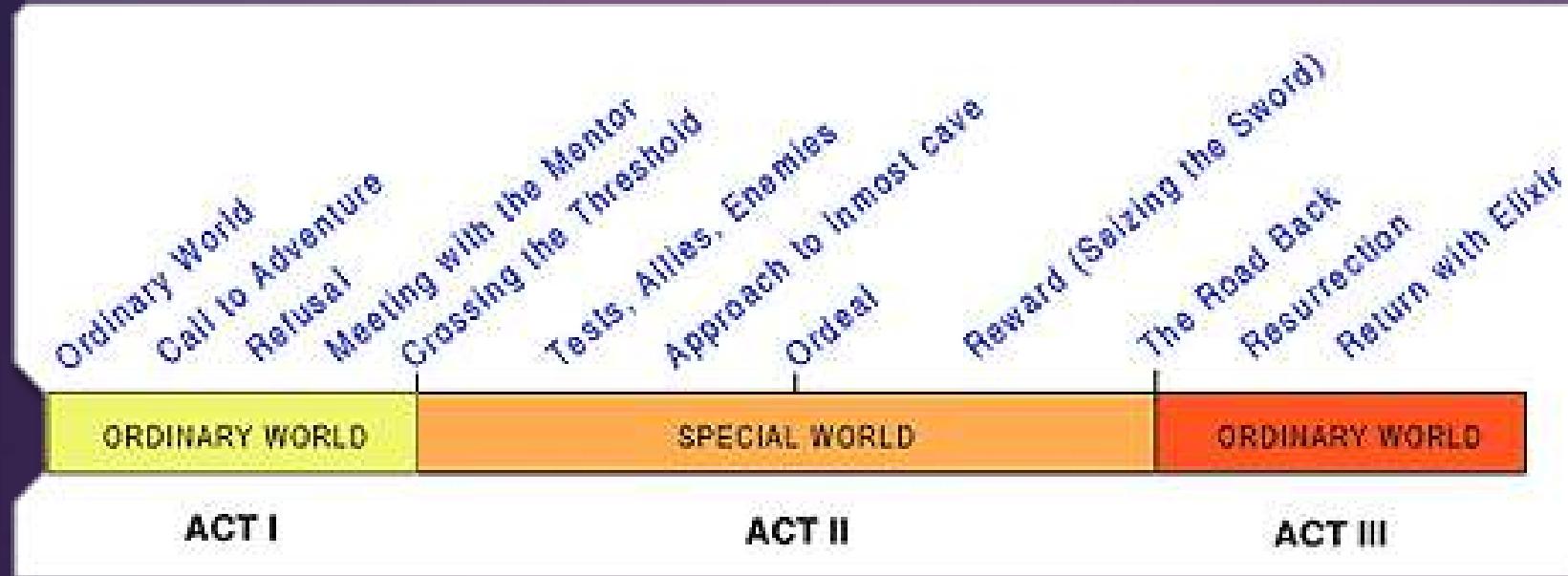
Modern



Illustration by Nick Daniel

To make sure you have the right mix of simplicity and transcendence, ask yourself these questions:

- How is my world simpler than the real world? Can it be simpler in other ways?
- What kind of transcendent power do I give to the player? How can I give them even more without removing challenge from the game?
- Is my contribution of simplicity and transcendence contrived, or does it provide my players with a special kind of wish fulfillment?

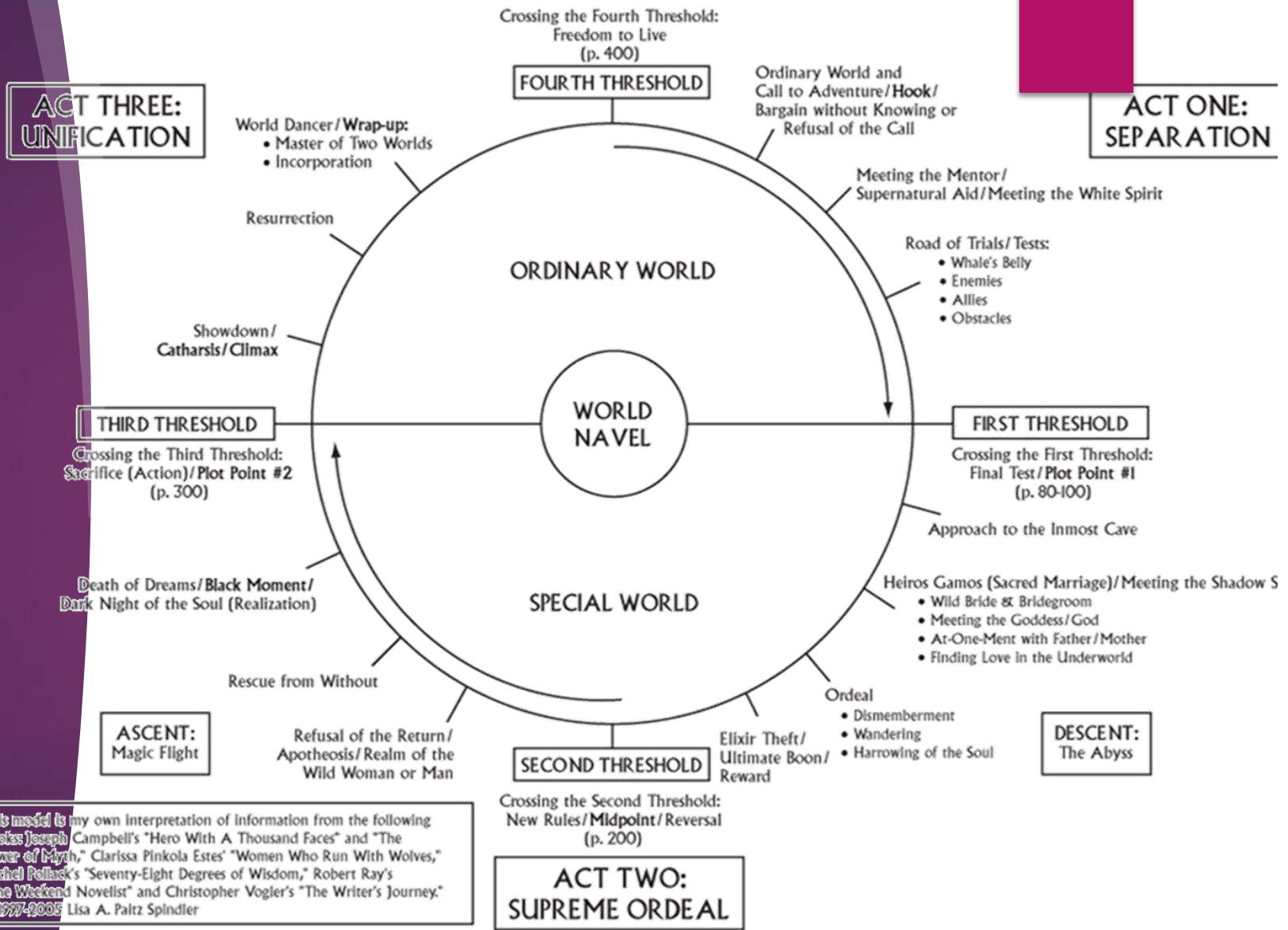


Story Tip #3:
Consider the Hero's Journey

Story Tip #3: Consider the Hero's Journey

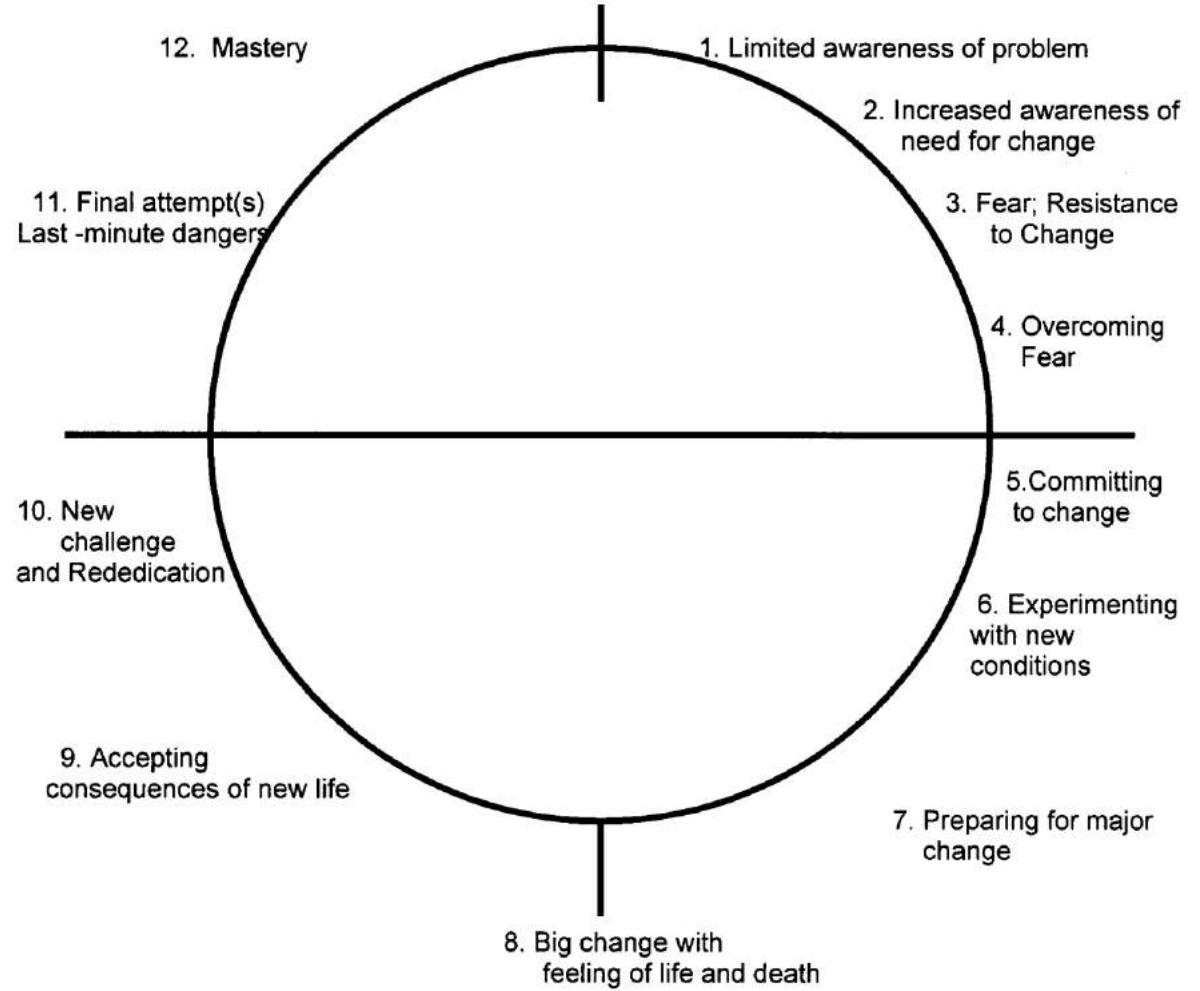
1. **The Ordinary World** — Establishing scenes that show our hero is a regular person leading an ordinary life.
2. **The Call to Adventure** — The hero is presented with a challenge that disrupts their ordinary life.
3. **Refusal of the Call** — The hero makes excuses about why he can't go on the adventure.
4. **Meeting with the Mentor** — Some wise figure gives advice, training, or aid.
5. **Crossing the Threshold** — The hero leaves the ordinary world (often under pressure) and enters the adventure world.
6. **Tests, Allies, Enemies** — The hero faces minor challenges, makes allies, confronts enemies, and learns the workings of the adventure world.
7. **Approaching the Cave** — The hero encounters setbacks and needs to try something new.
8. **The Ordeal** — The hero faces a peak life or death crisis.
9. **The Reward** — The hero survives, overcomes their fear, and gets the reward.
10. **The Road Back** — The hero returns to the ordinary world, but the problems still aren't all solved.
11. **Resurrection** — The hero faces a still greater crisis, and has to use everything he has learned.
12. **Returning with the Elixir** — The journey is now well and truly complete, and the hero's success has improved the lives of everyone in the ordinary world.

As you model
your story...

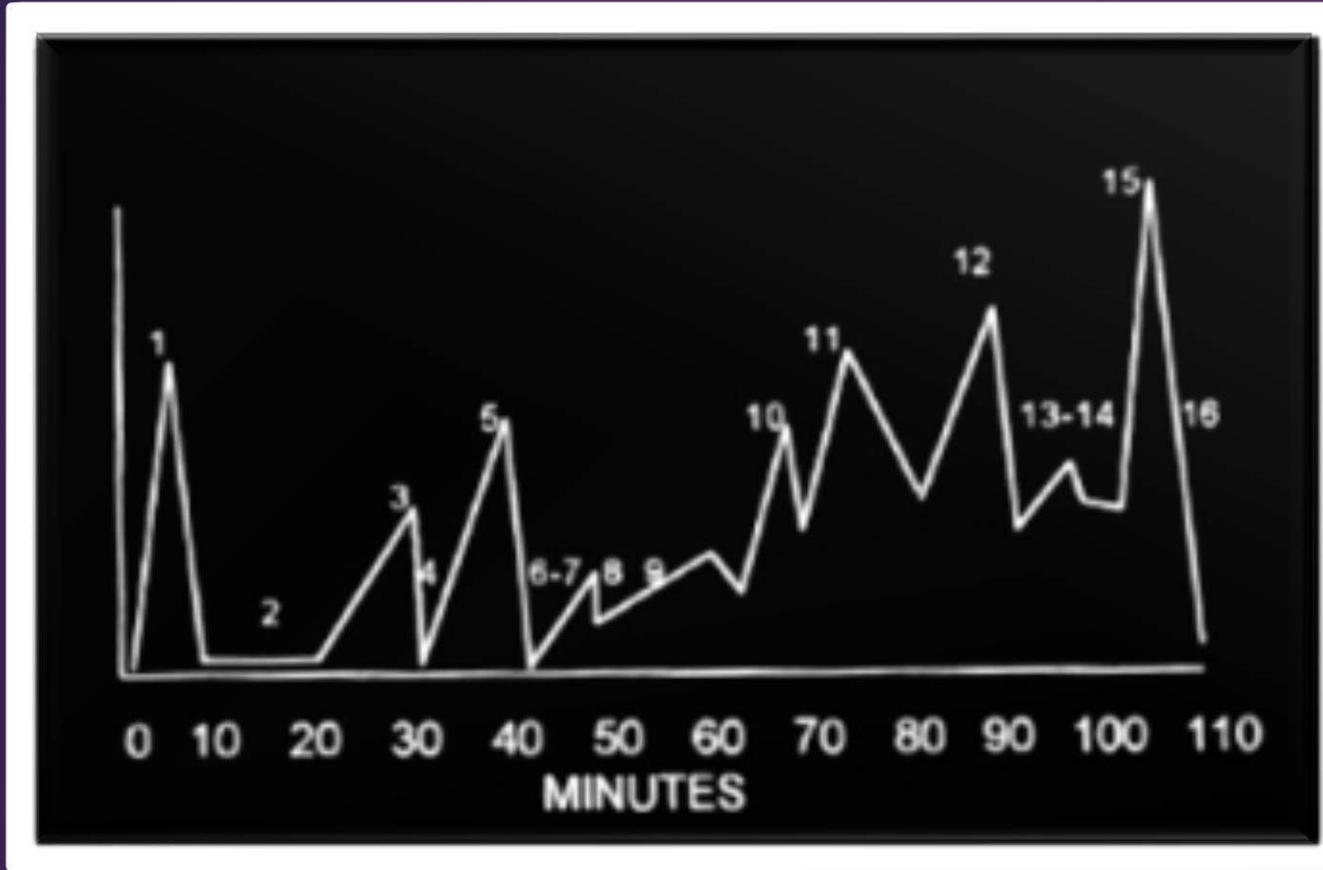


... you model
your character

THE HERO'S INNER JOURNEY



The Hero's
Journey
makes it
interesting



"Raiders of the Lost Ark"

Harry Potter and the Philosopher's Stone.
Star Wars A New Hope; synopsis

Harry Potter

Luke Skywalker is an orphan living with his uncle and aunt on the remote wilderness of Tatooine:

— suburbia flagrid

He is resucued from ~~alters~~ by wise, bearded Ben Kenobi, who turns out to be a Jedi Knight:

Hagrid *wizard* Harry *Harry* Ben *wizard*
Ben reveals to Luke that Luke's father was also a Jedi Knight, and
was the best pilot he had ever seen.

Harry Quidditch player a magic wand
Luke is also instructed in how to use the Jedi-light-sabre as he too trains to become a Jedi.

Harry *Wizard* *Hogwarts*
Luke has many adventures in the galaxy
such as *Han Solo* and *Princess Leia*.
Ron *Hermione*

In the course of these adventures he distinguishes himself as a top X-wing pilot in the battle of the Death Star, making the direct hit that secures the Rebels victory against the forces of evil, *Slytherin*.

Harry Gryffindor *Lord Voldemort*
Luke also sees off the threat of *Darth-Vader*, who
murdered his uncle and aunt.
Poison

In the finale, Luke and his new friends receive medals of valour.

Harry win the House Cup.

All of this will be set to an orchestral score composed by John Williams.

LORD OF THE RINGS (FELLOWSHIP O/T RING) (2001)

HOW TO WRITE A CLASSIC FANTASY: WIZARD OF OZ (1939);
(synopsis)

Gandalf rides Shire Frodo Sam
Bereothy runs along the road and to the farm. There she meets friends like Hunk, Zeke and Hickory and a father figure like Uncle Henry.
Merry Pippin Bilbo

The Ring Galdalf the Citidel Bilbo
Elmira-Gulch forces Bereothy to run to Professor-Marvel. Professor-Marvel is going away to see-the-Crown-Heads-of-Europe.
write a book

Gandalf's Shire Frodo Sam
On her return to the farm, Bereothy is forced to go away with Toto to somewhere she has never been before – the strange land of Oz, where she meets the they have outside the Shire they

Innspeople Aragorn them
strange Munchkins and Glinda-the-Good-Witch, who protects her from the Wicked Witch-of-the-West.
ringwraiths

Arwen Frodo Rivendell Bilbo
The Munchkins shows Bereothy the way to the Yellow Brick Road, where Glinda gives Bereothy the magic slippers and from where the journey to the Emerald City
Frodo vest Mount Doom

begins with friends like Scarecrow, Tin Man and Lion.
Legolas, Gimli, Boromir

mountainside, Saruman Frodo
From the snowy field, the Wicked Witch tries to make Bereothy turn back. The only way forward is through the Wizard-of-Oz's-chamber, but first they have to mines

tentacled beast Moria book
get past the doorman at the City gate; the Wizard leads them into battle with the Witch-and-castle-guards. Surviving the Witch's-domain, Glinda sees Bereothy gets Balrog and goblins mines, Galadriel Frodo

continues, he the power of the ring
back-to-Kansas, where she finally appreciates home.

68

The Lens of the The Hero's Journey



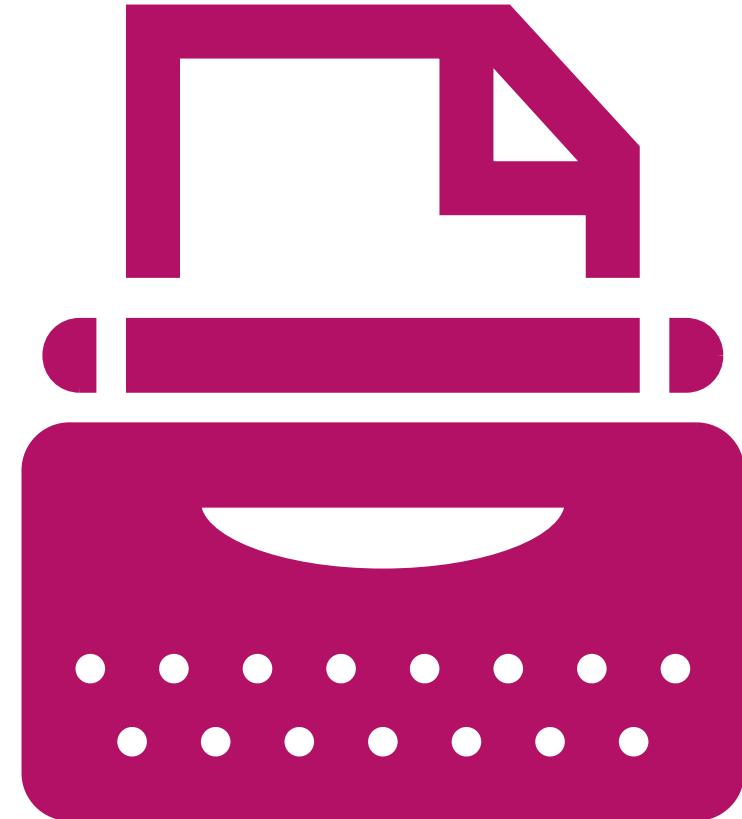
Illustration by Chris Daniel

Many heroic stories have similar structure. Use this lens to make sure you haven't missed out on any elements that might improve your story. Ask yourself these questions:

- Does my story have elements that qualify it as a heroic story?
- If so, how does it match up with the structure of the Hero's Journey?
- Would my story be improved by including more archetypical elements?
- Does my story match this form so closely that it feels hackneyed?

Story Tip #4: *Put the story to work!*

- ▶ Shape it to meet your needs! Story is more flexible than gameplay.



69

The Lens of the The Weirdest Thing



Illustration by Reagan Heller

 Having weird things in your story can help give meaning to unusual game mechanics, capture the interest of the player, and make your world seem special. Too much weirdness, though, will render your story puzzling and inaccessible. To make sure your story is the good kind of weird, ask yourself these questions:

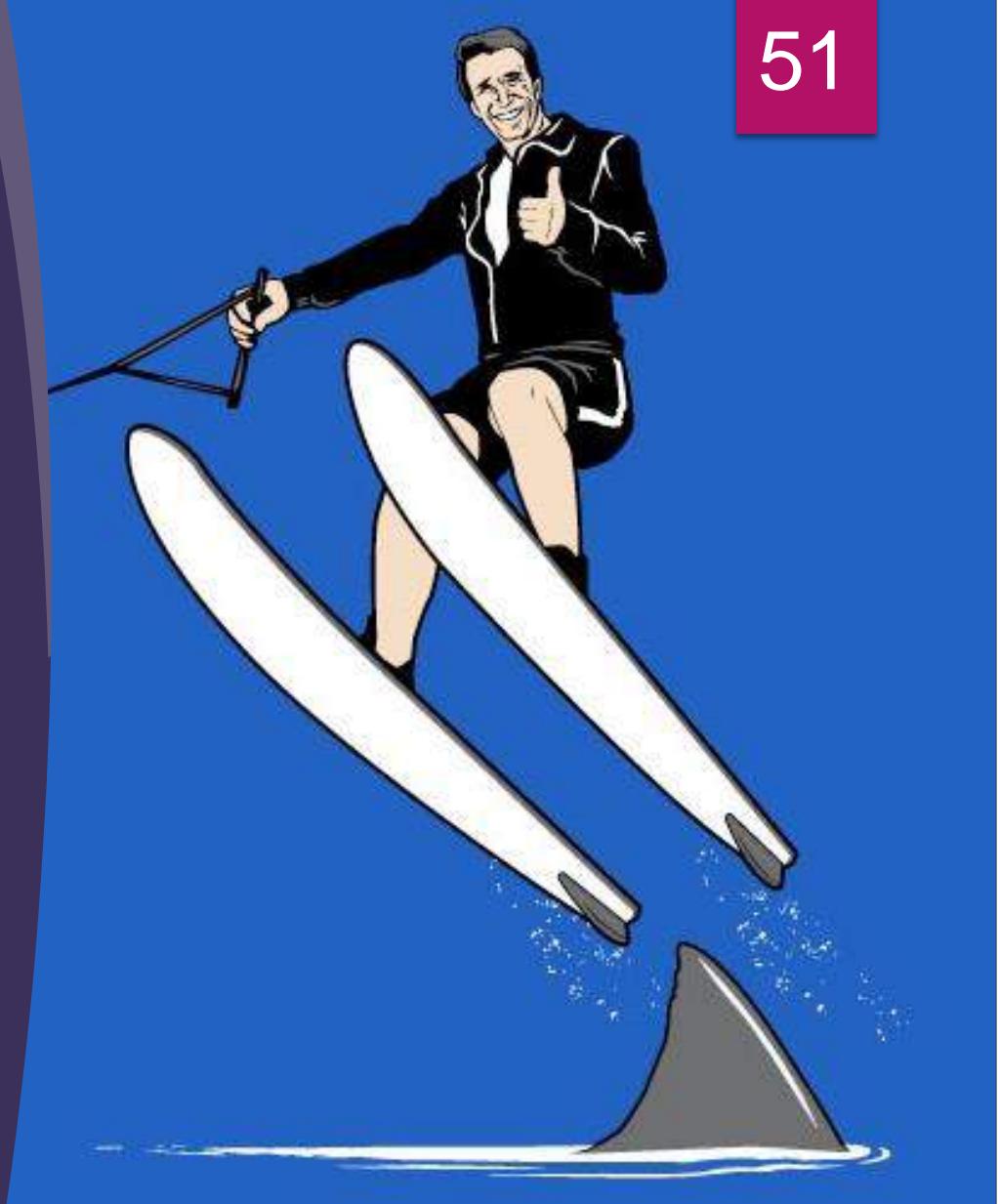
- *What's the weirdest thing in my story?*
- *How can I make sure that the weirdest thing doesn't confuse or alienate the player?*
- *If there are multiple weird things, should I maybe get rid of, or coalesce some of them?*
- *If there is nothing weird in my story, is the story still interesting?*

Story Tip #5:
*Keep your story world
consistent!*

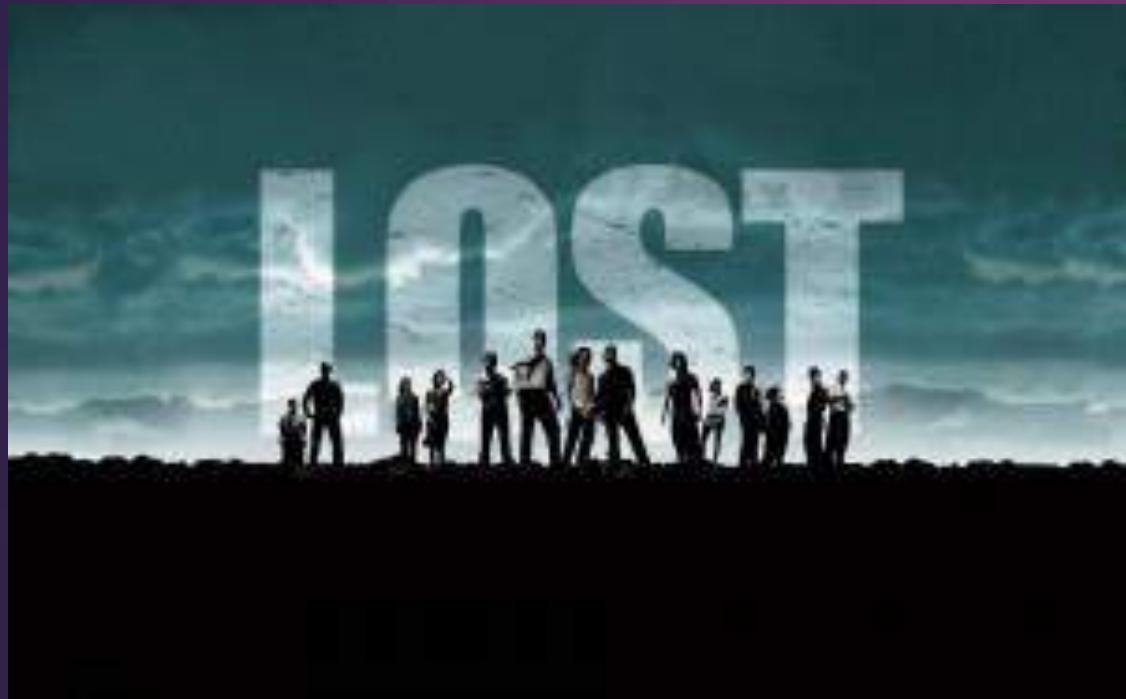


Story Tip #5: *Keep your story world consistent!*

Jumping the shark is an idiom used to describe the moment in the evolution of a television show when it begins a **decline in quality that is beyond recovery**, which is usually a particular scene, episode, or aspect of a show in a desperate attempt to keep viewers' interest.



Story Tip #5: Keep your story world consistent!



When did Lost Jump the Shark ?

After first season (11 votes)

Never jumped (9 votes)

Unanswered questions (7 votes)

The island goes back in time (5 votes)

The 'Others' appear (4 votes)

Season 6 (3 votes)

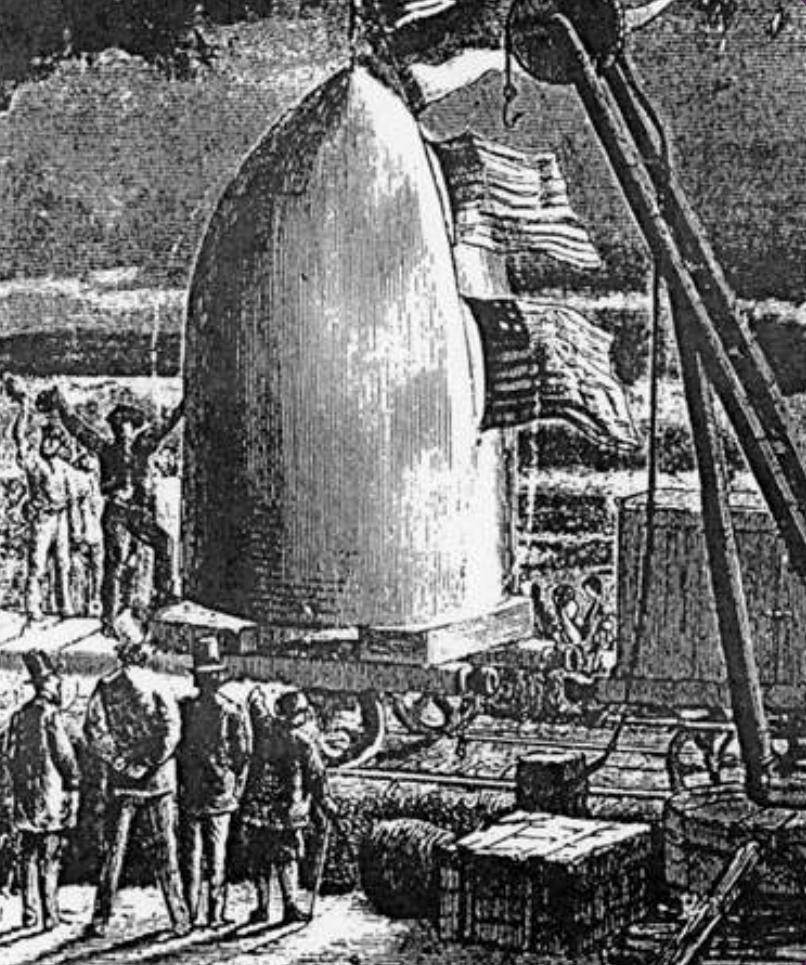
Hurley doesn't lose weight (3 votes)

Too many flashbacks (2 votes)

Final episode (1 votes)

A close-up photograph of a person's hands holding a small, colorful globe. The globe shows the outlines of continents and some political boundaries. The hands are positioned as if presenting or examining the globe. The background is dark and out of focus.

Story Tip #6: Make your
story world accessible!



Jules Verne
From the
Earth to the
Moon
1865

Rockets vs. Artillery in 1865

- ▶ William Congreve's Rockets (1812):
6.5" diameter, 42 pounds, 2 miles
- ▶ William Hale's Rockets(1840):
Same size, slightly more accurate
- ▶ Dahlgren's Gun (1855):
100 pound shell, three miles
- ▶ Rodman's Columbiad (1860):
1000 pound shell, six miles

Floor





Story Tip #7: Use Clichés Judiciously

- ▶ Dragons
- ▶ Zombies
- ▶ Princesses
- ▶ Robots
- ▶ Ninjas
- ▶ Dungeons
- ▶ Superheroes
- ▶ ...





Story Tip #8:
Sometimes
a map
brings a
story to life

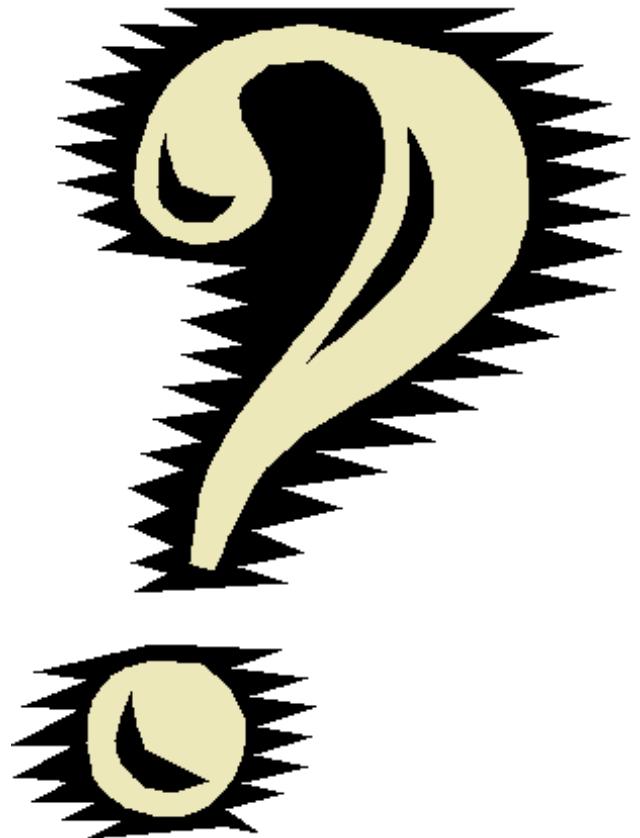
Story Tip #8: *Sometimes a map brings a story to life*

- ▶ “...as I paused upon my map of '**Treasure Island**', the future character of the book began to appear there visibly among imaginary woods; and their brown faces and bright weapons peeped out upon me from unexpected quarters, as they passed to and fro, fighting and hunting treasure, on these few square inches of a flat projection. The next thing I knew I had some papers before me and was writing out a list of chapters.”

-- Robert Louis Stevenson

Story Tips Summary

- 1) Use Goals, Obstacles, and Conflicts
- 2) Simplicity and Transcendence
- 3) Consider the Hero's Journey
- 4) Put your story to work!
- 5) Keep your story world consistent.
- 6) Make your story world accessible
- 7) Use clichés judiciously
- 8) Sometimes a map brings a story to life



Questions??

FOR MORE INFORMATION CONTACT:

SERGI.BERMUDEZ@UMA.PT

“

Game Design: Lecture 9 - Balancing ,”



UNIVERSIDADE da MADEIRA

MDMi Master of
Interactive
Media Design

Sergi Bermúdez i Badia
<sergi.bermudez@uma.pt>

Readings for next theory class!

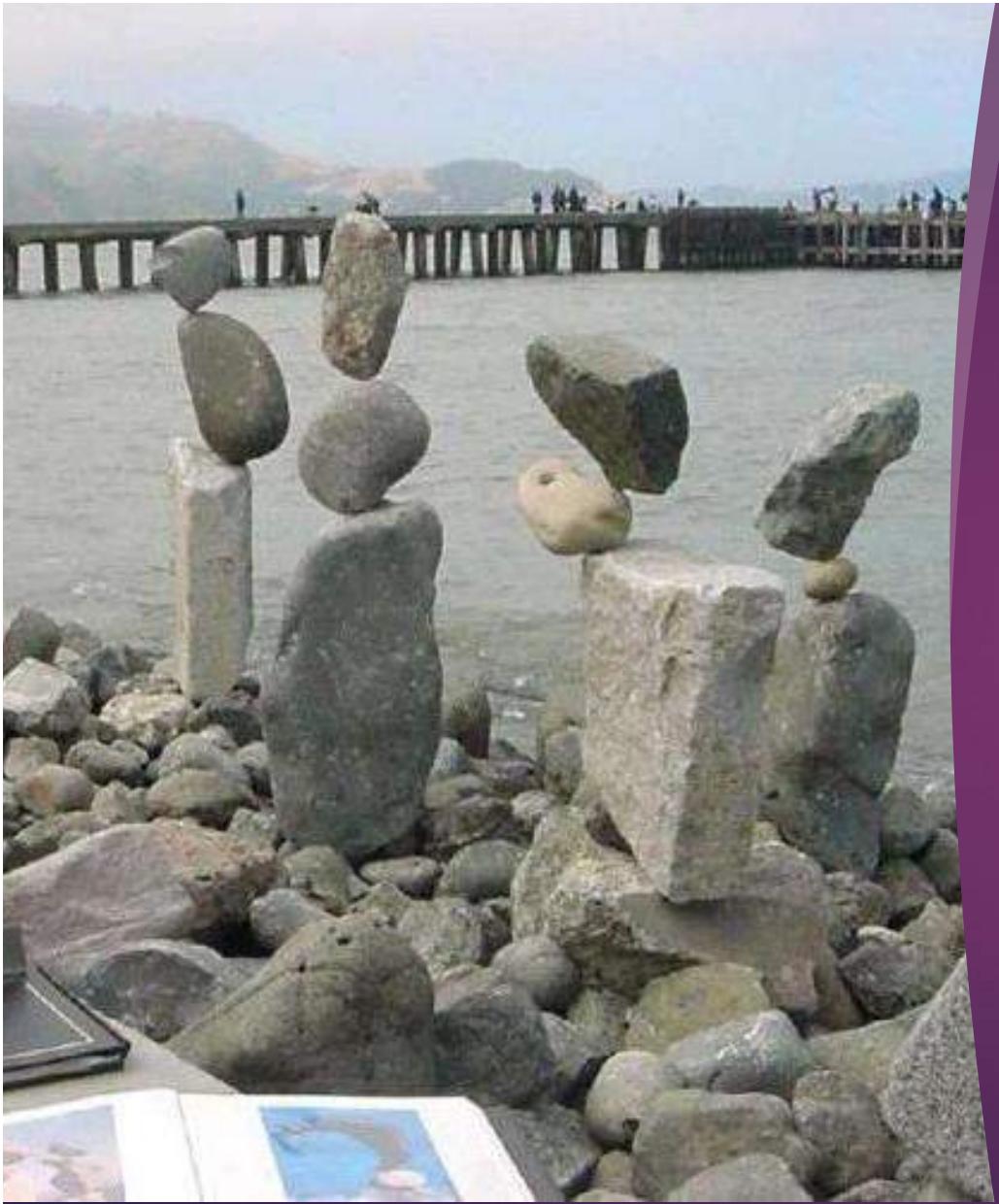
- ▶ “The Making of Magic the Gathering” – Richard Garfield



The Elemental Tetrad:

MECHANICS – BALANCING!!

A false
balance is an
abomination to
the Lord



Twelve Most Common Types of Balancing



Balance

Type #1: Fairness





How? Symmetrical Games

Then, why making
asymmetrical Games?



Cthulhu Wars



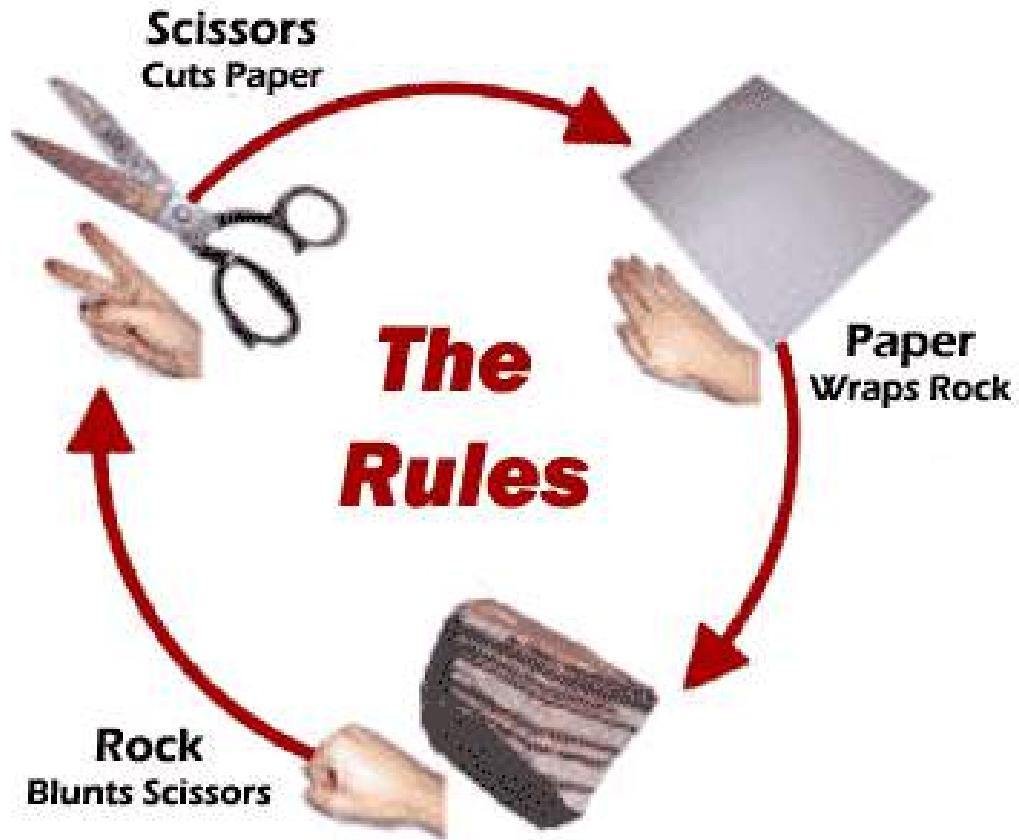
Warcraft 3: Reforged

Reasons you might want an asymmetrical game

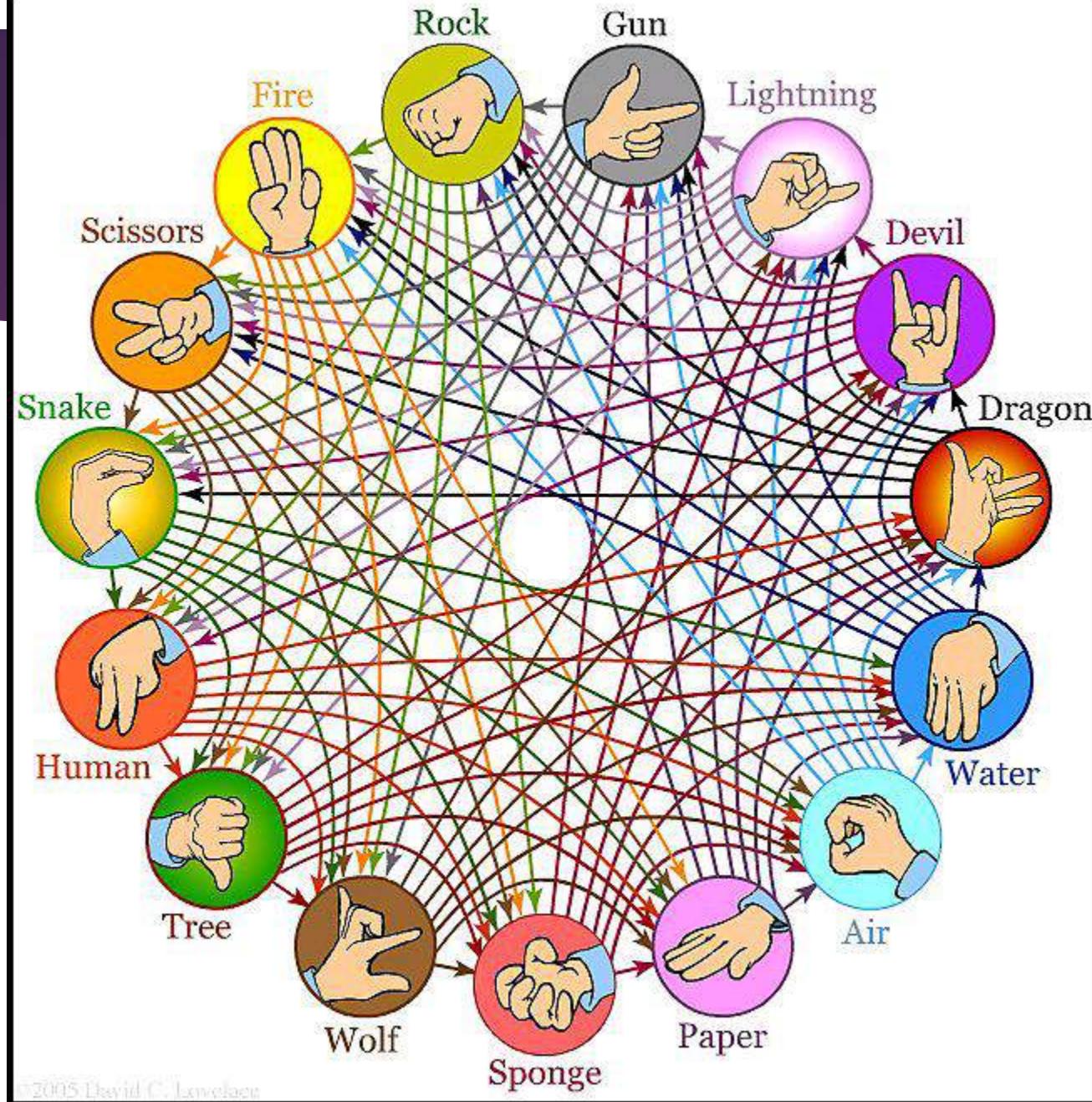
- To simulate a real-world situation
- To give players another way to explore the gamespace
- Personalization (Magic)
- To level the playing field
- To create interesting situations

Player vs. Player skill levels





Rock, Paper,
Scissors: keeping
asymmetry in
balance



The Lens of Fairness



Illustration by Nick Daniel



To use this lens, evaluate the game from each player's point of view and skill level. Find a way to give each player a chance of winning that each will consider to be fair.
Ask yourself these questions:

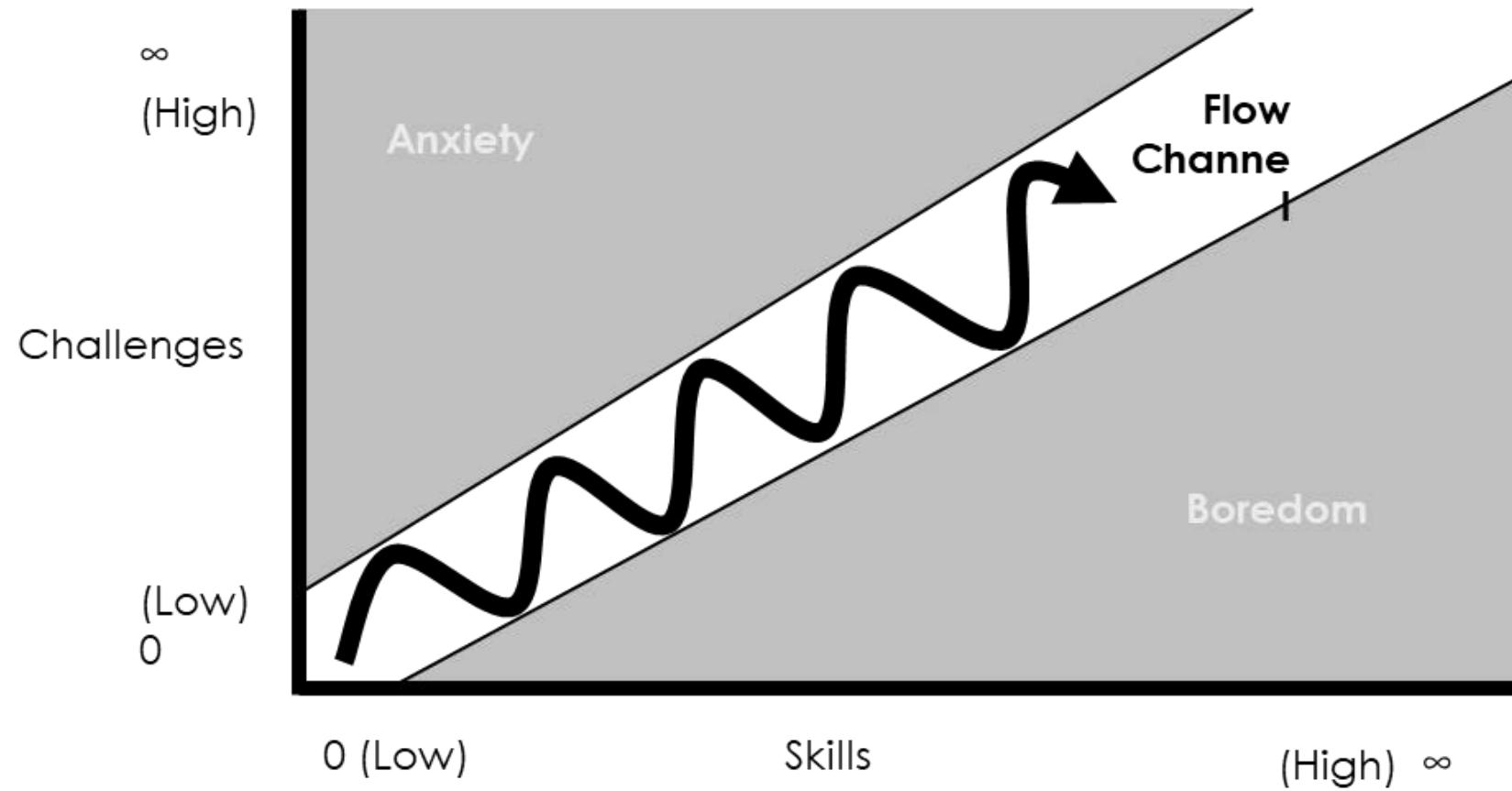
- Should my game be symmetrical? Why?
- Should my game be asymmetrical? Why?
- Which is more important: that my game is a reliable measure of who has the most skill, or that it provide an interesting challenge to all players?
- If I want players of different skill levels to play together, what means will I use to make the game interesting and challenging for everyone?

The Lens of Fairness



Balance

Type #2: Challenge vs. Success



Ways to balance challenge vs. success:

- ▶ Increase difficulty with each success
 - ▶ In the beginning, just understanding the rules is a challenge!
- ▶ Let players get through easy parts fast
- ▶ Create “layers of challenge”
- ▶ Let players choose the difficulty level
- ▶ Playtest with a variety of player skill levels

Ways to balance challenge vs. success:

LEVEL	PAC-MAN SPEED			GHOST SPEED		
	NORM	NORM DOTS	FRIGHT	FRIGHT DOTS	NORM	FRIGHT
1	80%	~71%	90%	~79%	75%	50%
2 – 4	90%	~79%	95%	~83%	85%	55%
5 – 20	100%	~87%	100%	~87%	95%	60%
21+	90%	~79%	–	–	95%	–

* A side-by-side comparison of progression for Pac-Man and Ghost speed. Source: Pittman, Jamey. The Pac-Man Dossier. Version 1.0.26. 16 Jun. 2011. Web. 6 Apr. 2012.



Balance Type #3: Meaningful Choices

Balance Type #3: Meaningful Choices

- ▶ A good game gives meaningful choices.
 - ▶ **Bruce Shelley*** says a good game is: “interesting decisions, a competitive environment, and a satisfying conclusion.”
- ▶ When one choice is always better than the rest, this is called...?

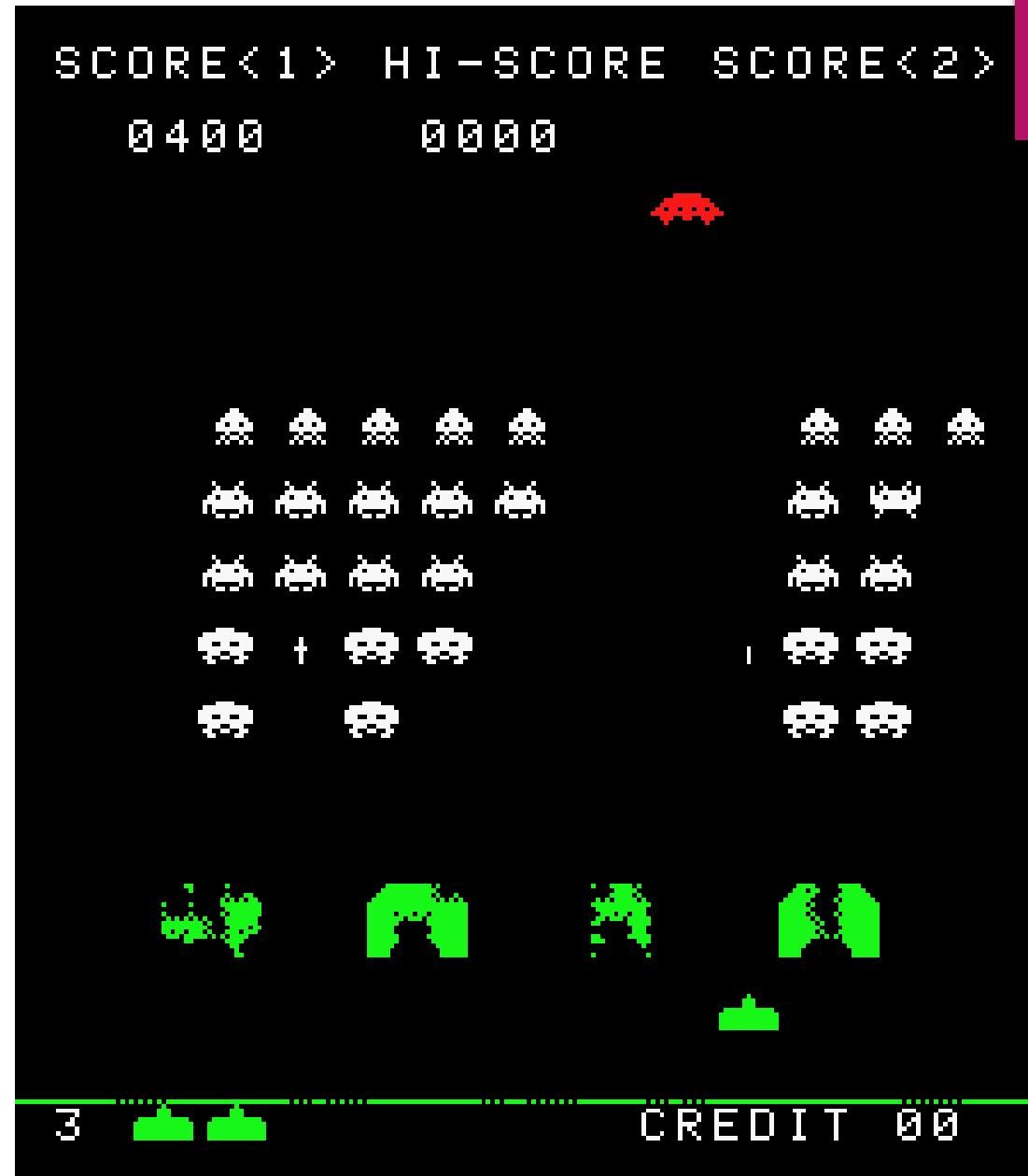
* Bruce Campbell Shelley is a board and video game designer. He is primarily associated as the co-designer of the video games **Railroad Tycoon** and **Civilization** with Sid Meier, and later the **Age of Empires** series.

More about Meaningful Choices

- ▶ Michael Mateas (in his Façade paper) points out:
 - ▶ Choices > Desires → overwhelmed
 - ▶ Choices < Desires → frustrated
 - ▶ Choices = Desires → feeling of freedom and mastery
- ▶ Me:
 - ▶ Increase choices with skill!! (Your Unity casual game exercise)

Triangularity

- ▶ Creating “balanced asymmetric risks” makes for challenging decision making.
- ▶ Low risk = Low reward
- ▶ High risk = High reward



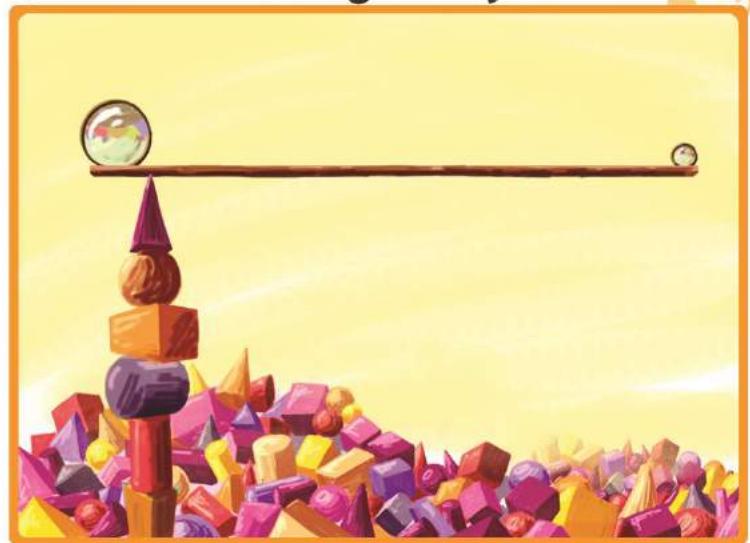


Illustration by Nick Daniel

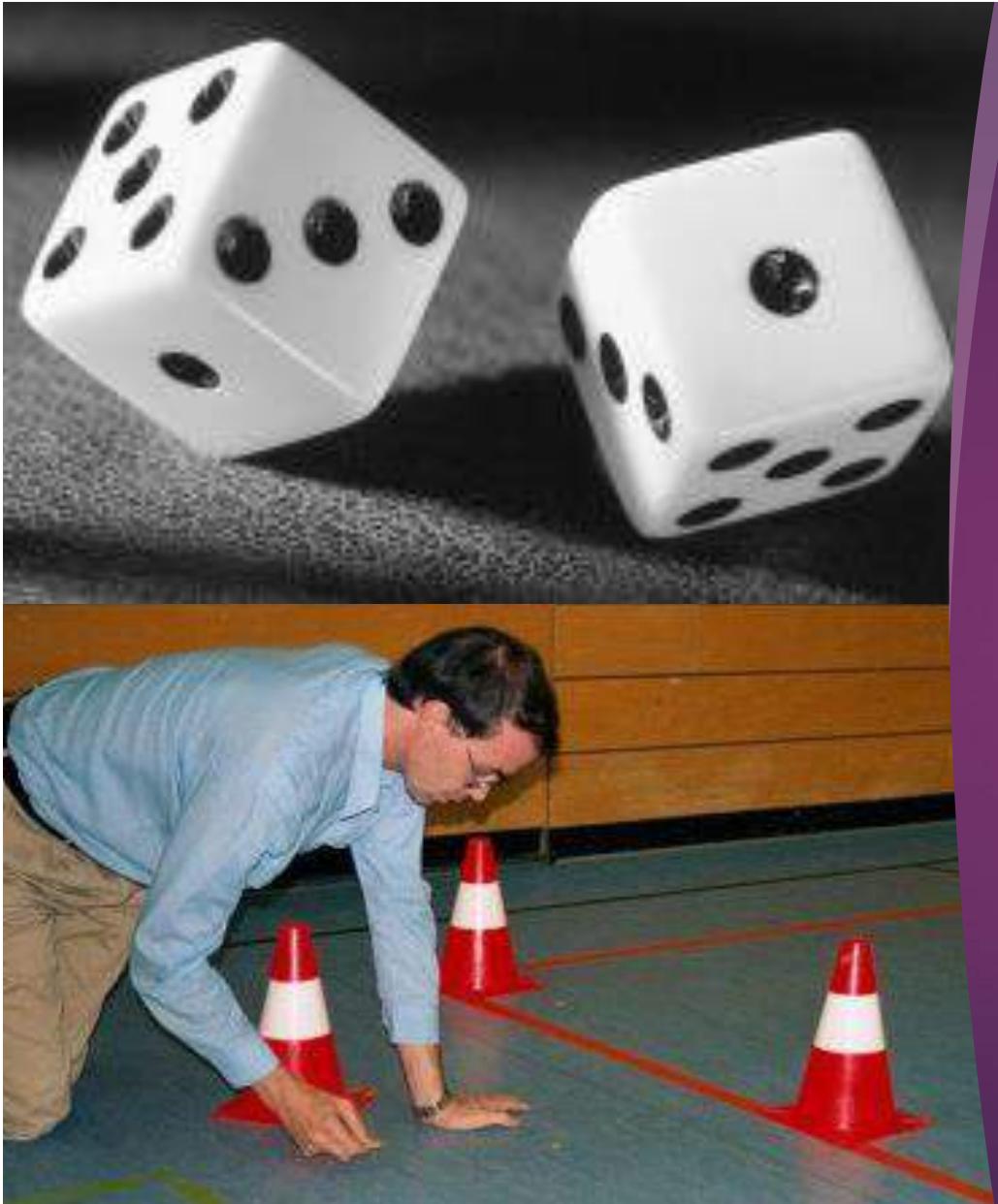


Giving a player the choice to play it safe for a low reward, or to take a risk for a big reward is a great way to make your game interesting and exciting. To use this lens, ask yourself these questions:

- Do I have triangularity now? If not, how can I get it?
- Is my attempt at triangularity balanced? That is, are the rewards commensurate with the risks?

The Lens of Triangularity

Balance Type #4: Skill vs. Chance



Balance Type #4: Skill vs. Chance

	Skill		Chance	
Mental Calculation	Go Chess	Civilization Warcraft Starcraft	Poker Blackjack	Backgammon Chutes and Ladders
Physical Dexterity	Unreal Halo Basketball Football	Devil Dice	Operation Pin the tail on the Donkey Whack-A-Mole Tag	Kerplunk Twister

The Play Matrix

The Lens of Skill



Illustration by Emma Backer

To use this lens, stop looking at your game, and start looking at the skills you are asking of the players.
Ask yourself these questions:

- What skills does my game require from the player?
- Are there categories of skill that this game is missing?
- Which skills are dominant?
- Are these skills creating the experience I want?
- Are some players much better at these skills than others?
- Does this make the game feel unfair?
- Can players improve their skills with practice?
- Does this game demand the right level of skill?

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:

- 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?

Skill and Chance

Types of Skill?

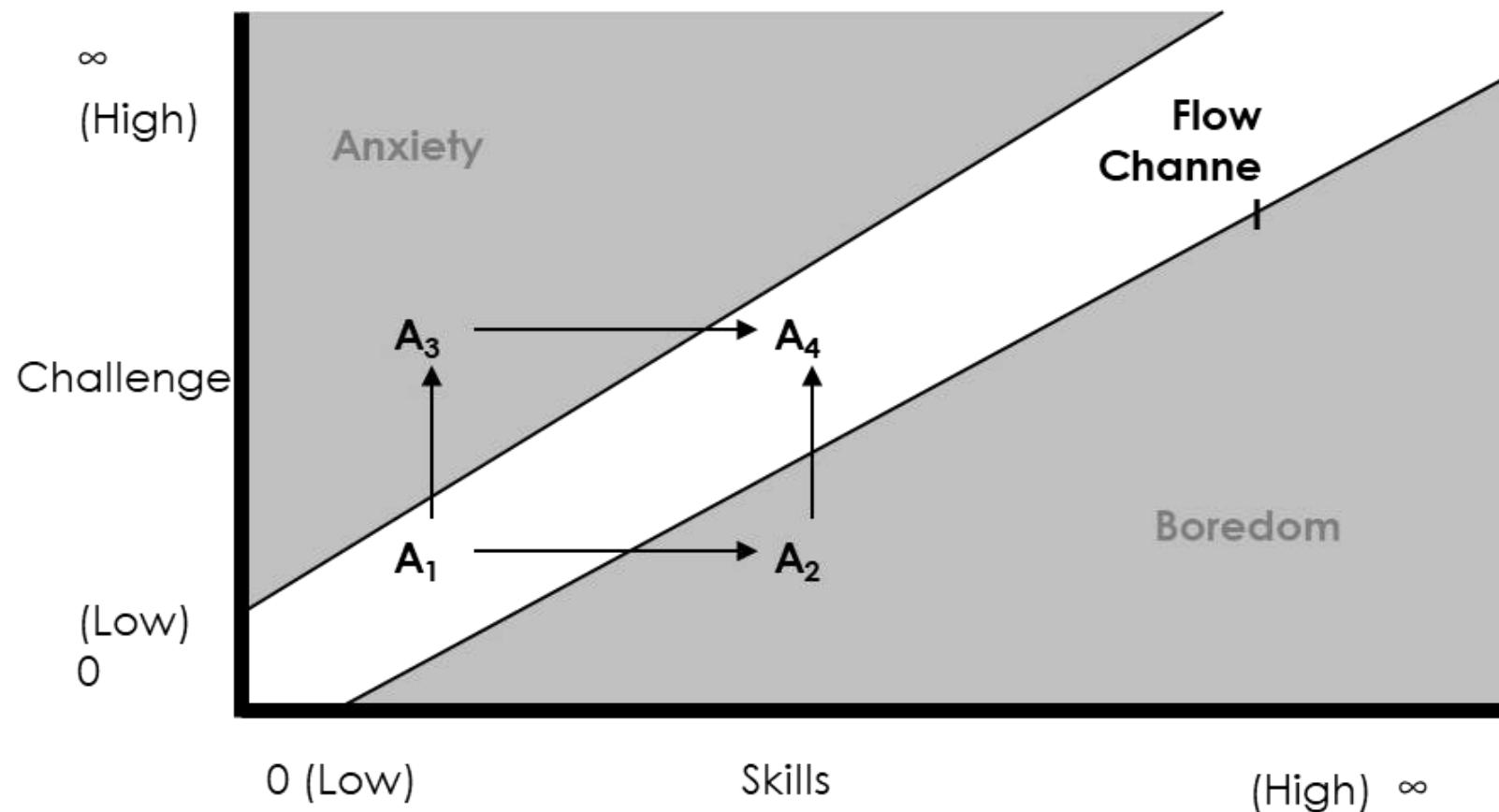
Types of Skill?

- "TWITCH" SKILL
- PREDICTING BEHAVIOR
- MOTOR SKILL
- NOTICING SKILL
- HAND-EYE COORDINATION
& REFLEXES
- SITUATIONAL AWARENESS
- MEMORIZING
- MULTITASKING
- ANALYSIS
- PLANNING
- TELESCOPING

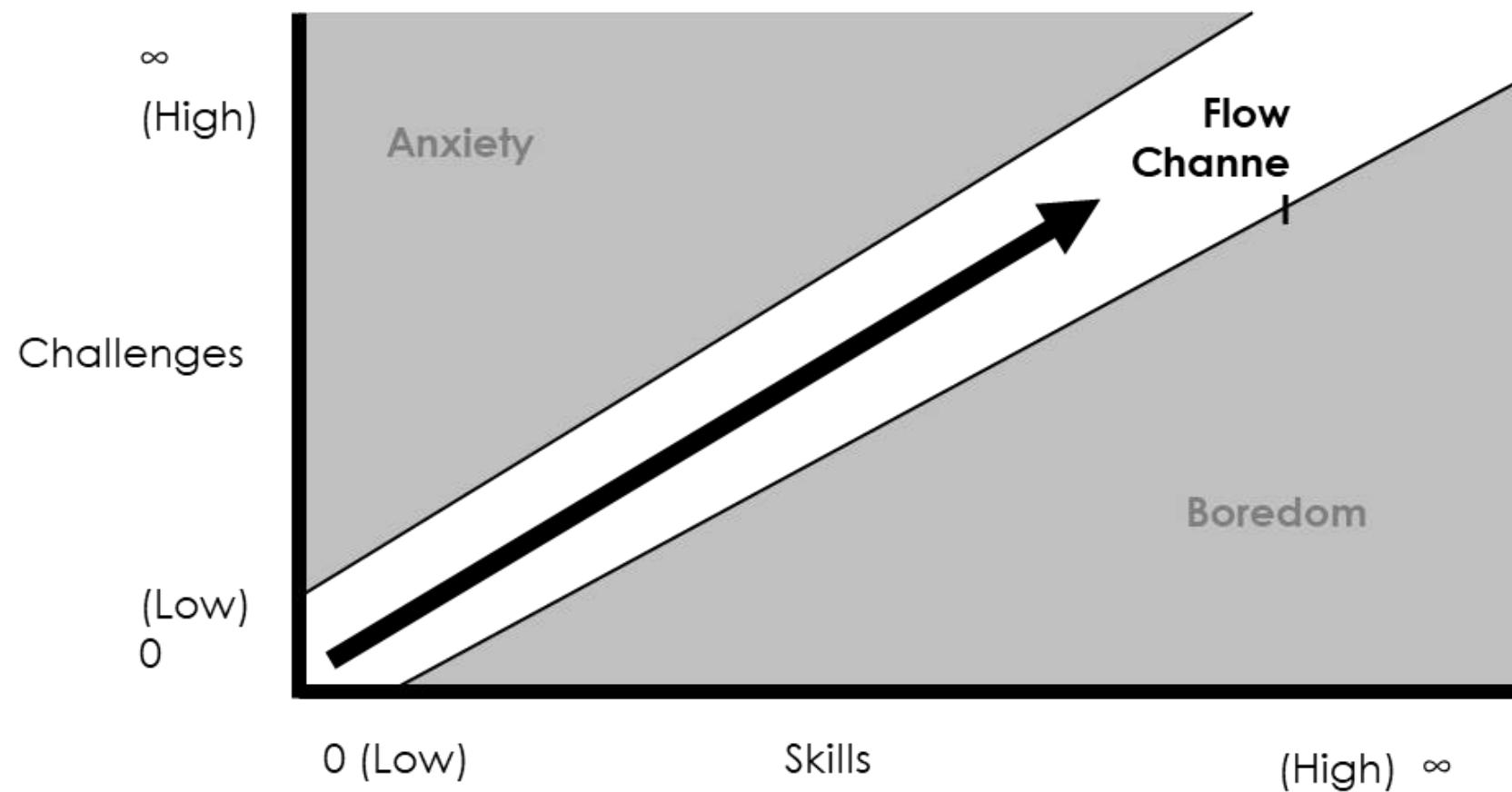
Skill Taxonomy

- Physical
 - Strength
 - Dexterity
 - Coordination
- Mental
 - Memory
 - Strategy/Puzzle Solving
 - Observation
 - Discipline
 - Negotiation
- Social
 - Reading an opponent
 - Fooling an opponent
 - Team communication
 - Cheating?!

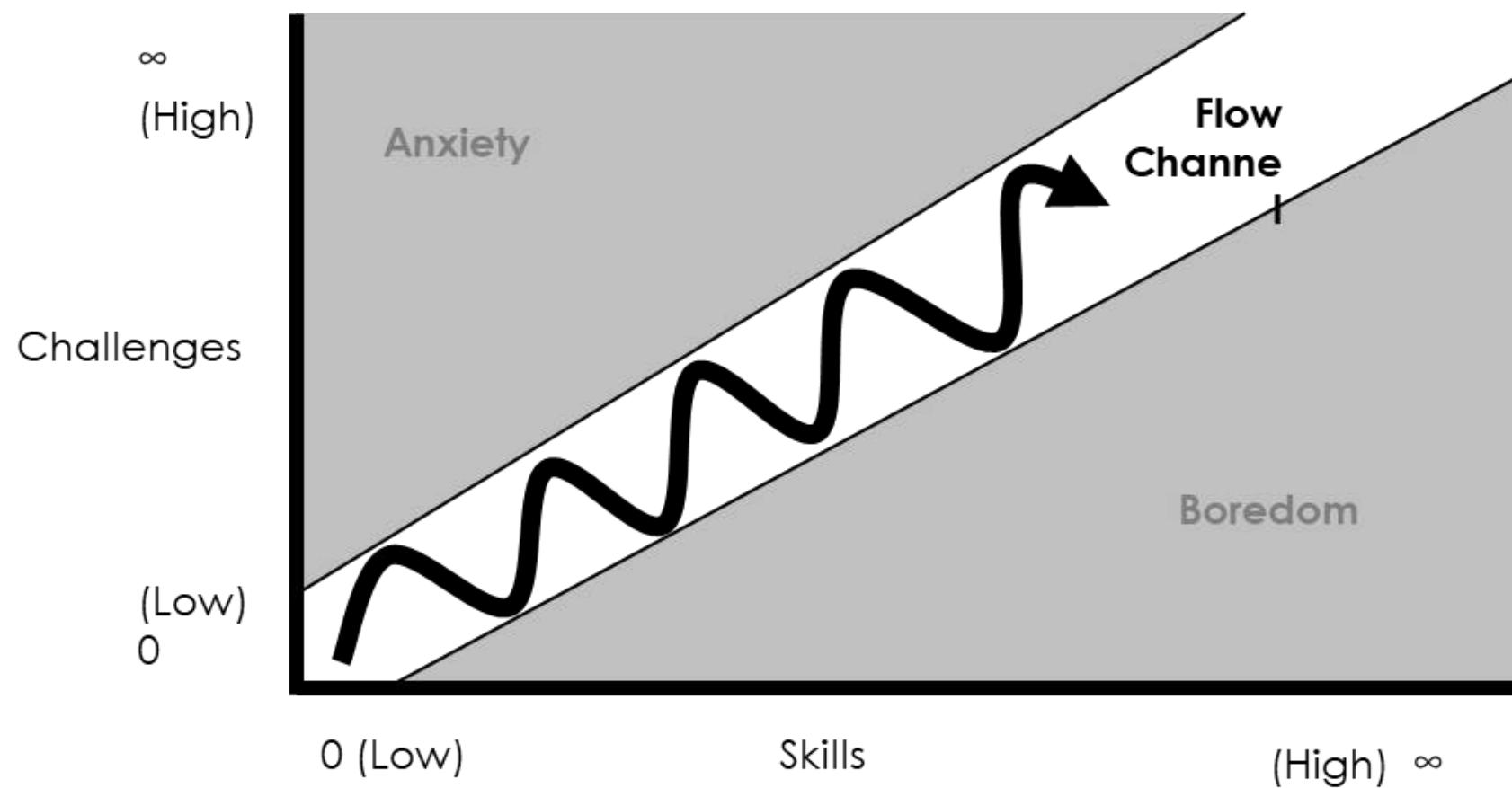
Flow



Good



Better: Can we use chance?!



Antoine Gombauld, Chevalier de Méré

- ▶ “Il est très bon esprit, mais quel dommage, il n'est pas géomètre.” – Pascal to Fermat regarding the Chevalier de Méré

Invention of Probability

- It was 1654, and the Chevalier de Mere had a problem:

Game 1: 1 x die, Four rolls, one six

Game 1 Analysis: The Chevalier believed his chance of winning in the first game to be:
 $1/6 + 1/6 + 1/6 + 1/6 = 2/3 = 66\%$

Game 2: 2 x dice, Twenty-four rolls, one twelve

Game 2 Analysis: The Chevalier believed his chance of winning the second game to be:
 $24 \times (1/36) = 24/36 = 2/3 = 66\%$

Invention of Probability

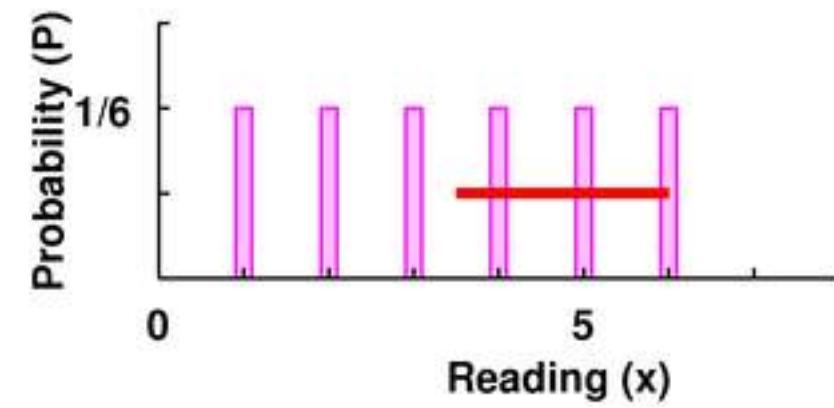
- What is the **right** answer?!

Ten Rules of Probability

- 1) Fractions are Decimals are Percents
- 2) Zero to One – and that's it!
- 3) “Looked for” divided by “possible outcomes” equals probability
- 4) Enumerate!
- 5) In certain cases, OR means add
- 6) In certain cases, AND means multiply
- 7) One minus “does” = “doesn't”
- 8) The sum of multiple uniform random selections is NOT a uniform random selection!

One Die

1	
2	
3	
4	
5	
6	

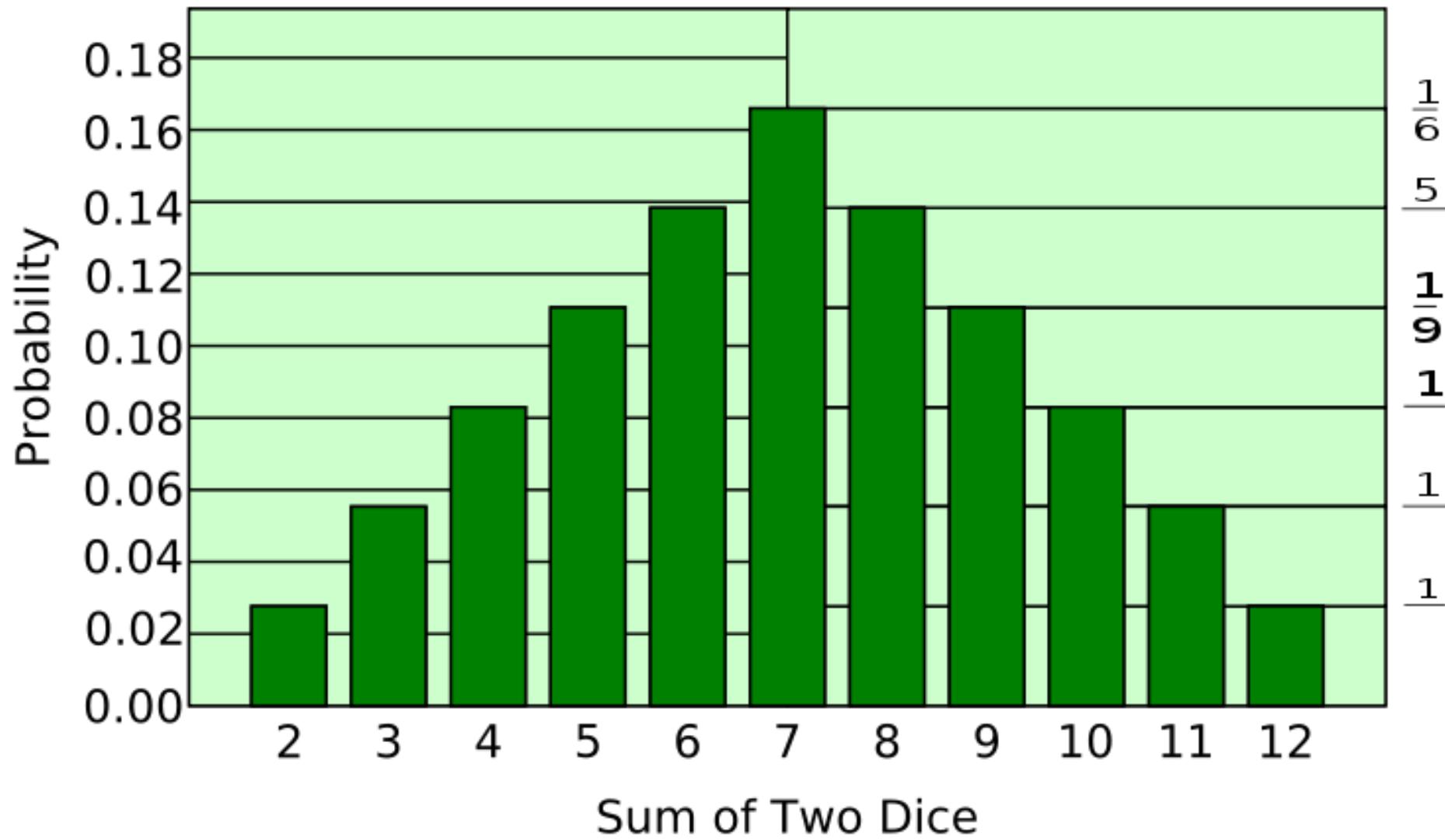


Two Dice

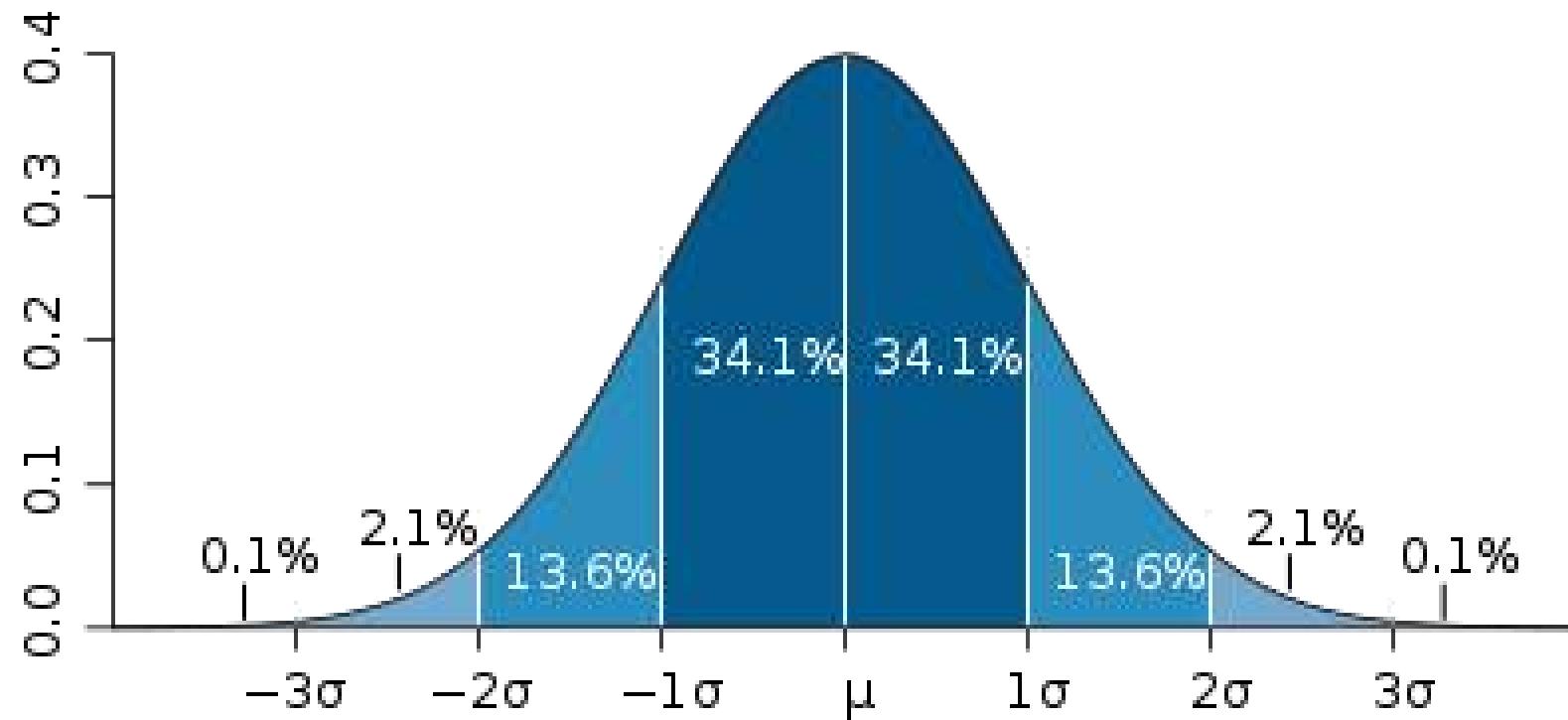
	1	2	3	4	5	6
1						
2						
3						
4						
5						
6						

Two Dice

	1	2	3	4	5	6
1	2	3	4	5	6	7
2	3	4	5	6	7	8
3	4	5	6	7	8	9
4	5	6	7	8	9	10
5	6	7	8	9	10	11
6	7	8	9	10	11	12



Infinite Dice



What if we mix n-sided dice?

Ten Rules of Probability

- 1) Fractions are Decimals are Percents
- 2) Zero to One – and that's it!
- 3) “Looked for” divided by “possible outcomes” equals probability
- 4) Enumerate!
- 5) In certain cases, OR means add
- 6) In certain cases, AND means multiply
- 7) One minus “does” = “doesn't”
- 8) The sum of multiple uniform random selections is NOT a uniform random selection!
- 9) Roll the dice
- 10) Gombauld's Law: Geeks love showing off

Solving Antoine's Problems?

The Answers

- ▶ In actuality, his chance of winning Game 1 was:

$$\frac{1}{6} + \frac{5}{6} \cdot \frac{1}{6} + \frac{5}{6} \cdot \frac{5}{6} \cdot \frac{1}{6} + \frac{5}{6} \cdot \frac{5}{6} \cdot \frac{5}{6} \cdot \frac{1}{6} = 51.77\%$$

- ▶ Chevalier's actual chance of winning Game 2 was:

$$1 - \left(\frac{35}{36}\right)^{24} = 49.1\%$$

Expected Value

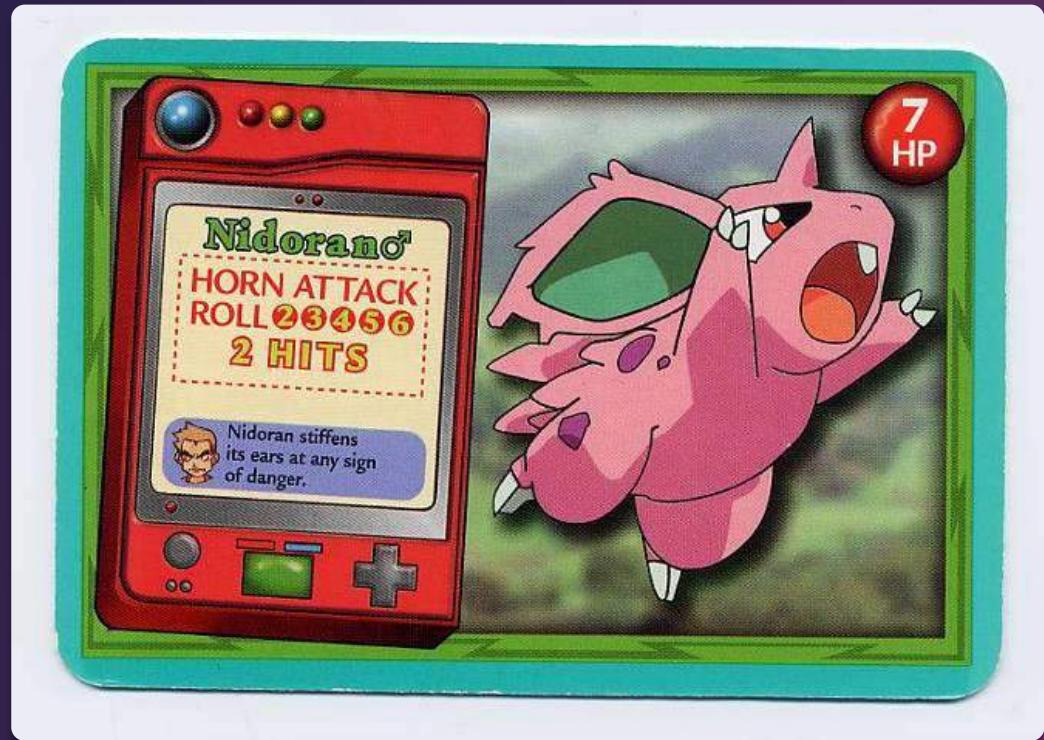
- The average net gain or loss over all possible situations

or

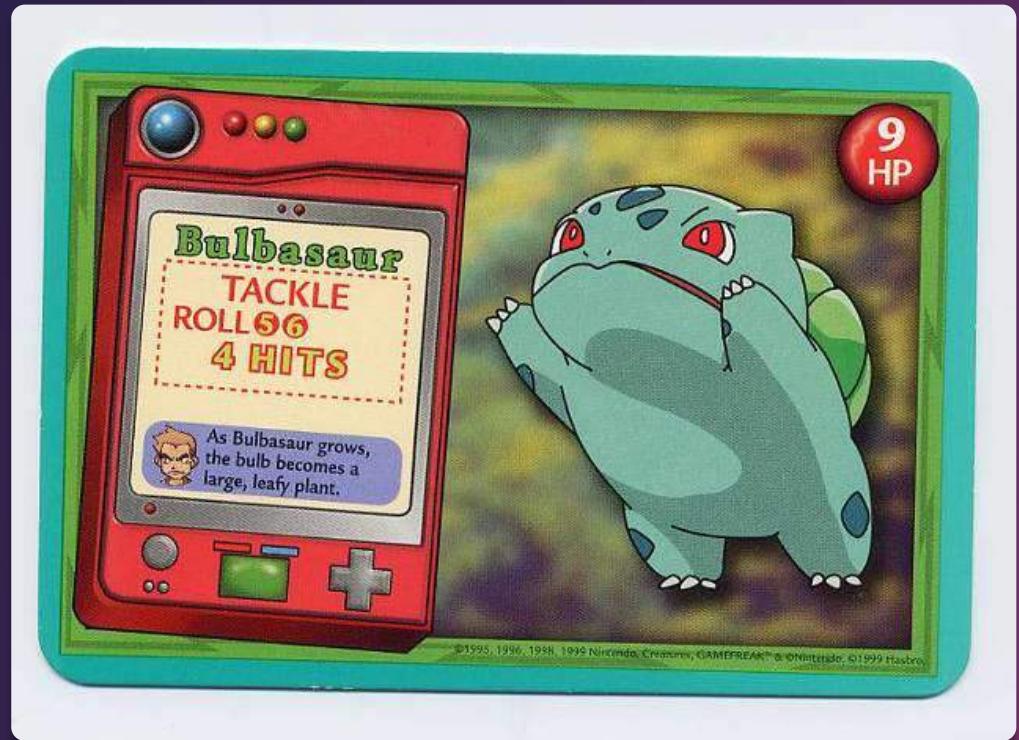
- The long-run average value over many independent repetitions

Expected Value

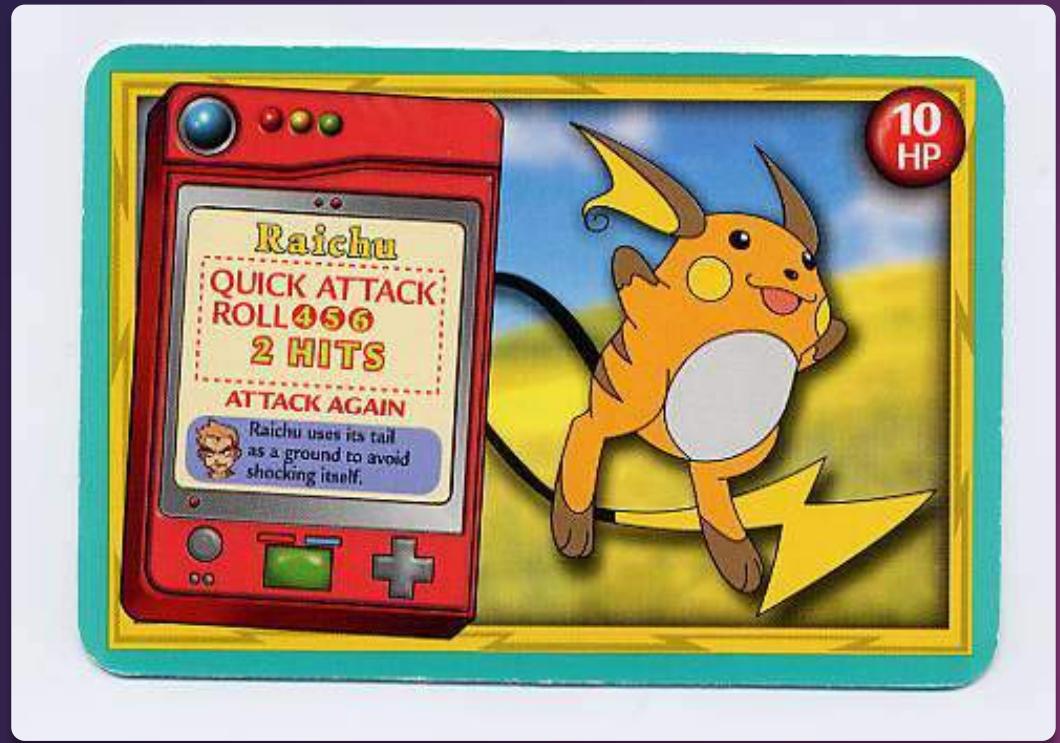
- Roll one die:
 - Get a six, and win \$4.
 - Anything else, lose \$1.
 - What is the expected value?
- Roll one die:
 - Get 1-5, get that many \$.
 - Get a 6, lose how many for a fair game?



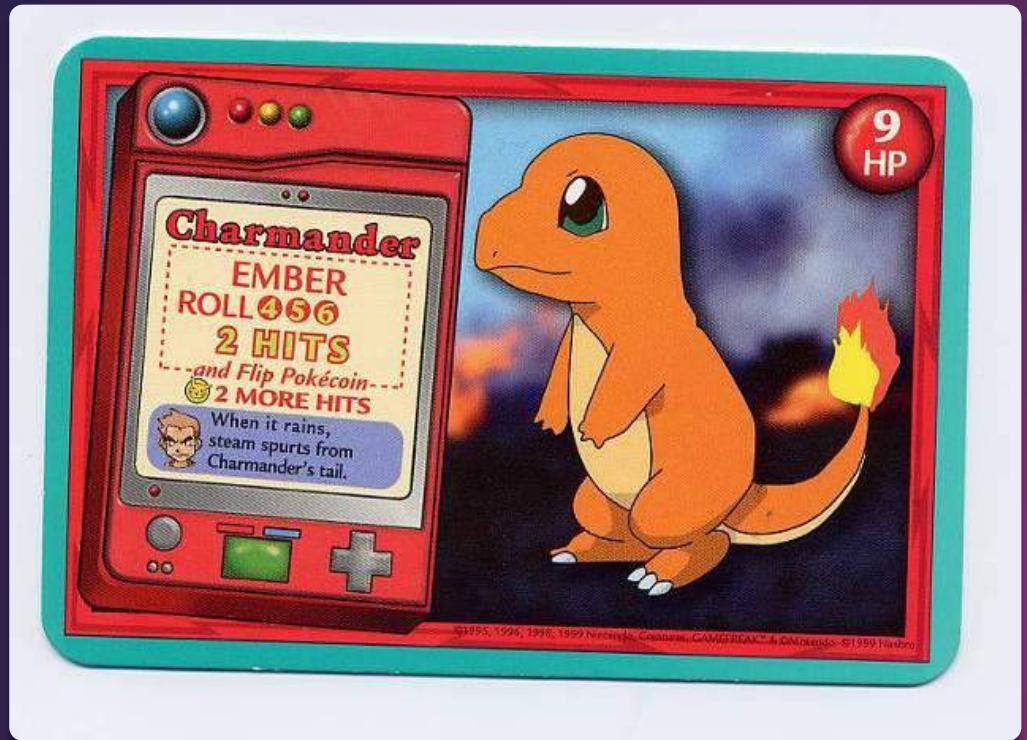
Pokemon Jr.



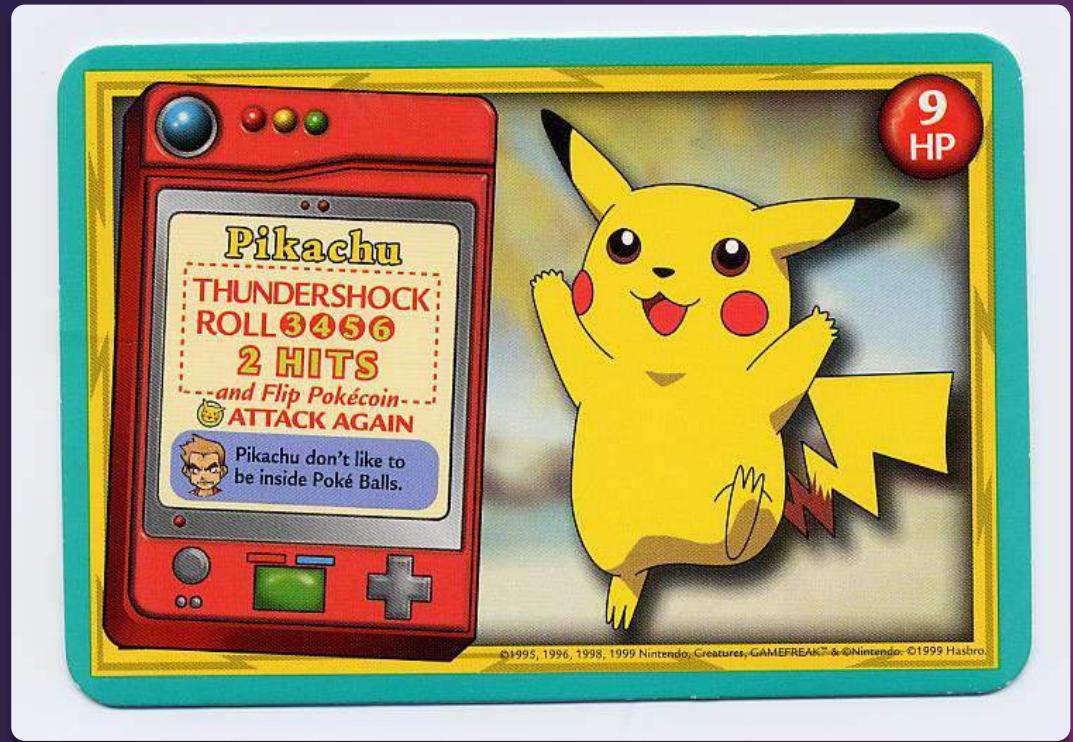
Pokemon Jr.



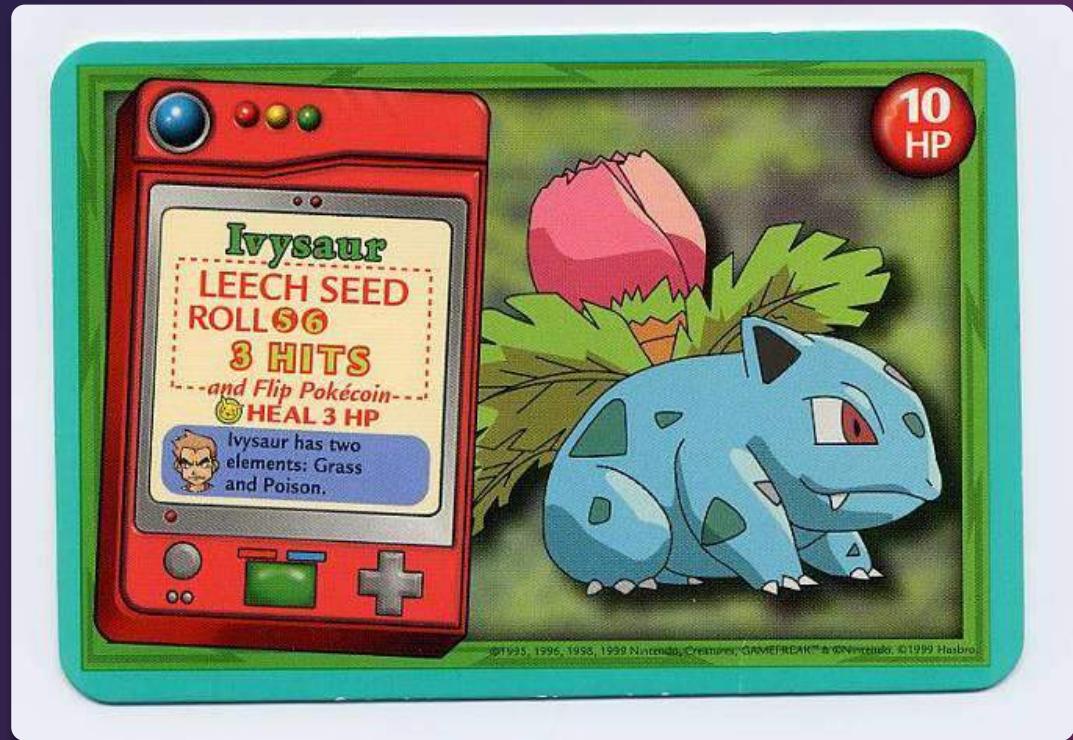
Pokemon Jr.



Pokemon Jr.



Pokemon Jr.



Pokemon Jr.

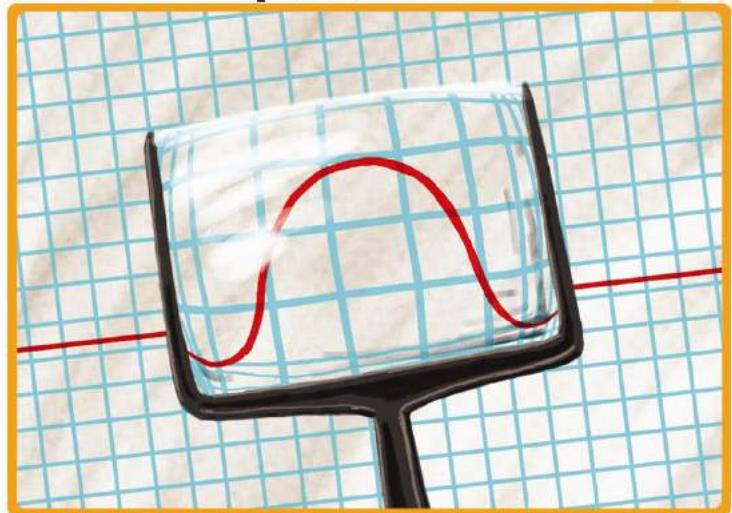


Illustration by Nick Daniel



To use this lens, think about the chance of different events occurring in your game, and what those mean to your player.
Ask yourself these questions:

- What is the actual chance of a certain event occurring?
- What is the perceived chance?
- What value does the outcome of that event have? Can the value be quantified? Are there intangible aspects of value that I am not considering?
- Each action a player can take has a different expected value. Am I happy with these values? Do they give the player interesting choices? Are they too rewarding, or too punishing?

Which one is the best card?

Chance & Skill Get Tangled

- ▶ Some chance is easily quantified
 - ▶ Die rolls, drawn cards, etc.
- ▶ Some chance is not easily quantified
 - ▶ Chance that my skill will succeed
- ▶ Estimating chance is a skill
 - ▶ Blackjack
- ▶ Skills have a probability of success
- ▶ Estimating opponent's skill is a skill
- ▶ Predicting pure chance is an imagined skill
 - ▶ Lucky streaks
 - ▶ Gambler's Fallacy
- ▶ Controlling pure chance is an imagined skill
 - ▶ Lucky charms



Illustration by Nathan Mazur



To help determine how to balance skill and chance in your game, ask yourself these questions:

- Are my players here to be judged (skill), or to take risks (chance)?
- Skill tends to be more serious than chance: Is my game serious or casual?
- Are parts of my game tedious? If so, will adding elements of chance enliven them?
- Do parts of my game feel too random? If so, will replacing elements of chance with elements of skill and strategy make the players feel more in control?

The Lens of Skill vs. Chance

Balance Type #5: Head vs. Hands

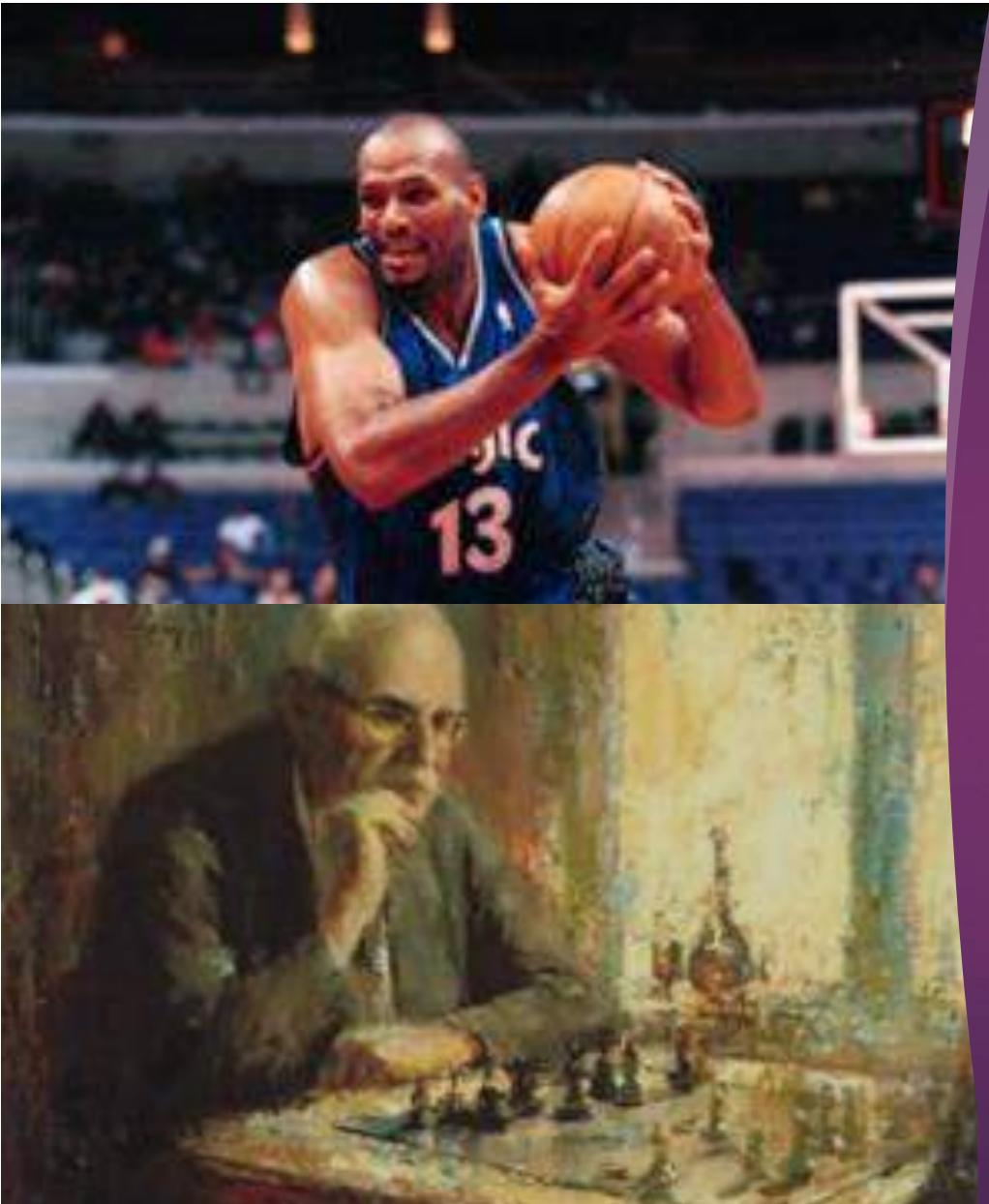






Illustration by Lisa Brown



To make sure your game has a good balance of mental and physical elements, use this lens. Ask yourself these questions:

- Are my players looking for mindless action, or an intellectual challenge?
- Would adding more places that involve puzzle-solving in my game make it more interesting?
- Are there places where the player can relax their brain, and just play the game without thinking?
- Can I give the player a choice - either succeed by exercising a high level of dexterity, or by finding a clever strategy that works with a minimum of physical skill?
- If "1" means all physical, and "10" means all mental, what number would my game get?

The Lens of Head and Hands

Balance Type #6: Competition vs. Cooperation



Competition vs. Cooperation



Illustration by Diana Patton



Balancing competition and cooperation can be done in many interesting ways. Use this lens to decide whether they are balanced properly in your game. Ask yourself these questions:

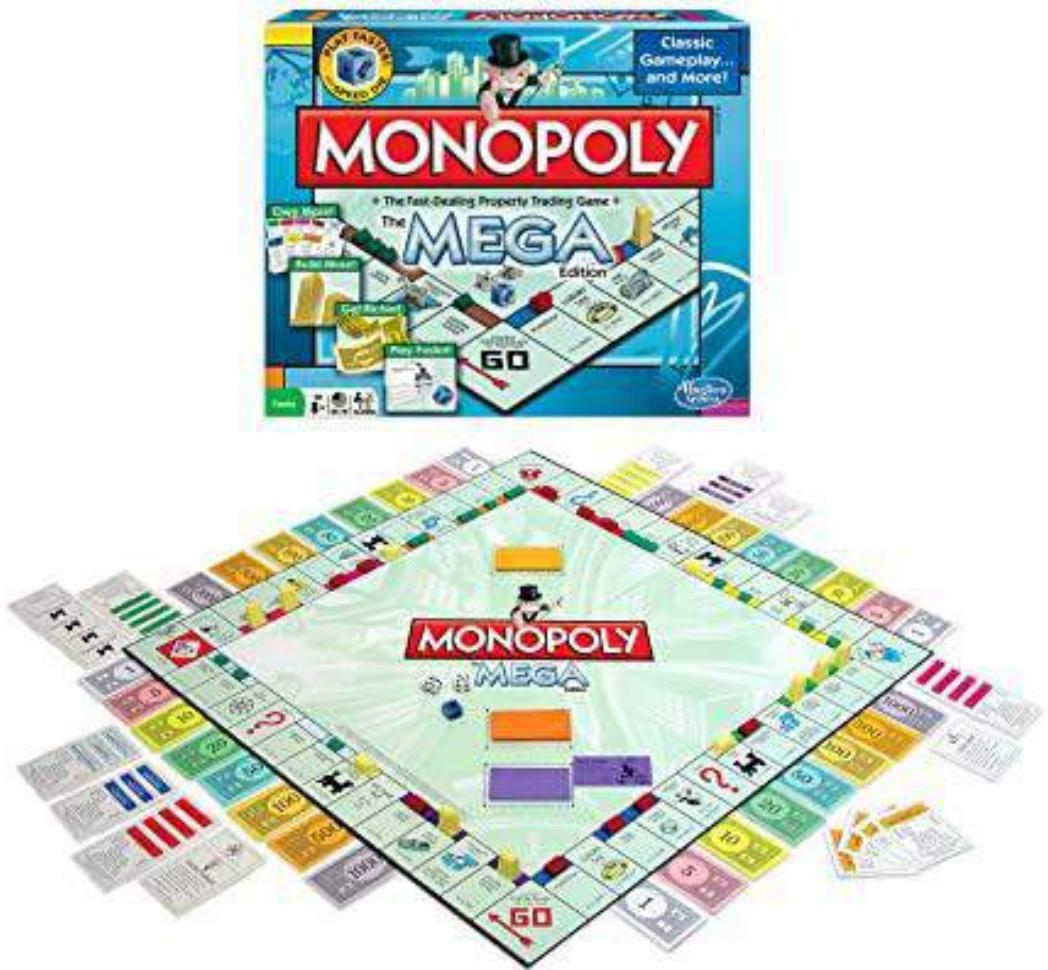
- If "1" is Competition and "10" is Cooperation, what number should my game get?
- Can I give players a choice whether to play cooperatively or competitively?
- Does my audience prefer competition, cooperation, or a mix?
- Is my team competition something that makes sense for my game? Is my game more fun with team competition, or with solo competition?

The Lens of Competition vs. Cooperation



Balance Type #7: Short vs. Long

HOW CAN YOU CONTROL THE LENGTH OF
YOUR GAME?



Balance Type #7: Short vs. Long

HOW CAN YOU CONTROL THE LENGTH OF YOUR GAME?



Balance Type #8: Rewards

Balance Type #8: Rewards

- ▶ Praise
- ▶ Points
- ▶ Prolonged Play
- ▶ A Gateway
- ▶ Spectacle
- ▶ Expression
- ▶ Powers
- ▶ Resources
- ▶ Completion
- ▶ Status

Reward System Design Considerations: Life constraint

- ▶ Hardcore game characteristics such as complex control interfaces and large time investment demands prevent many people from playing hardcore games.
 - ▶ If the target audience consists of casual players, rewards must be accessible during short playing sessions.

Reward System Design Considerations: Create autotelic experiences

Although reward systems give extrinsic reward, they can create intrinsically rewarding experiences.

- ▶ An example is setting multi-level goals to encourage players to sharpen their skills and try new ways to play, thus makes players to learn and experience the pleasure of learning and making progress. By defining sub goals, players are easier to immerse in play.

Reward System Design Considerations: Balance

- ▶ It must be balanced between effort paid/time spent and the value of reward.
 - ▶ It is frustrating to receive reward not valuable enough constantly.
 - ▶ On the other hand, the players will no longer appreciate high value rewards if they are gained relatively easy.

Reward System Design Considerations: Uncertainty and secrecy

- ▶ The uncertainty itself of reward creates some fun.
 - ▶ However, it is not suitable for rewards which are supposed to be tightly correlated to skills like score.
 - ▶ Resources which are critical in clearing a stage in real-time like ammunition and life count, players prefer them to be expectable.
- ▶ Secrecy like hidden treasure and quest encourages players to dig into the game and be a contributor in the game society or to join online discussion and search for information.

Reward System Design Considerations: Accumulated vs. instant feedback:

- ▶ Accumulated rewards, especially those not spent in game like experience points and virtual equipment, mark the progress of players and/or avatars and are suitable for comparison.
 - ▶ This kind of reward is better in creating long-term and social sense of achievement.
- ▶ Instant feedback, makes a game responsive and “juicy”. This kind of reward helps maintain attractiveness and provide elements for flow experience.

Reward System Design Considerations: Social purposes

- ▶ Rewards can be used to share, compare with others, establish status, show off, etc.
 - ▶ For example, Reward systems that distinguish players who have advanced skills or contribution.

Reward System Design Considerations: Physical world activities

- ▶ Reward systems with support of mobile technology have been used to encourage a range of activities; from shopping, traveling, even to taking exercise.
 - ▶ The idea of making players have more physical contact and do something good for health have made more people willing to play or feeling less guilty on playing games; just like Wii has changed the image of game playing.



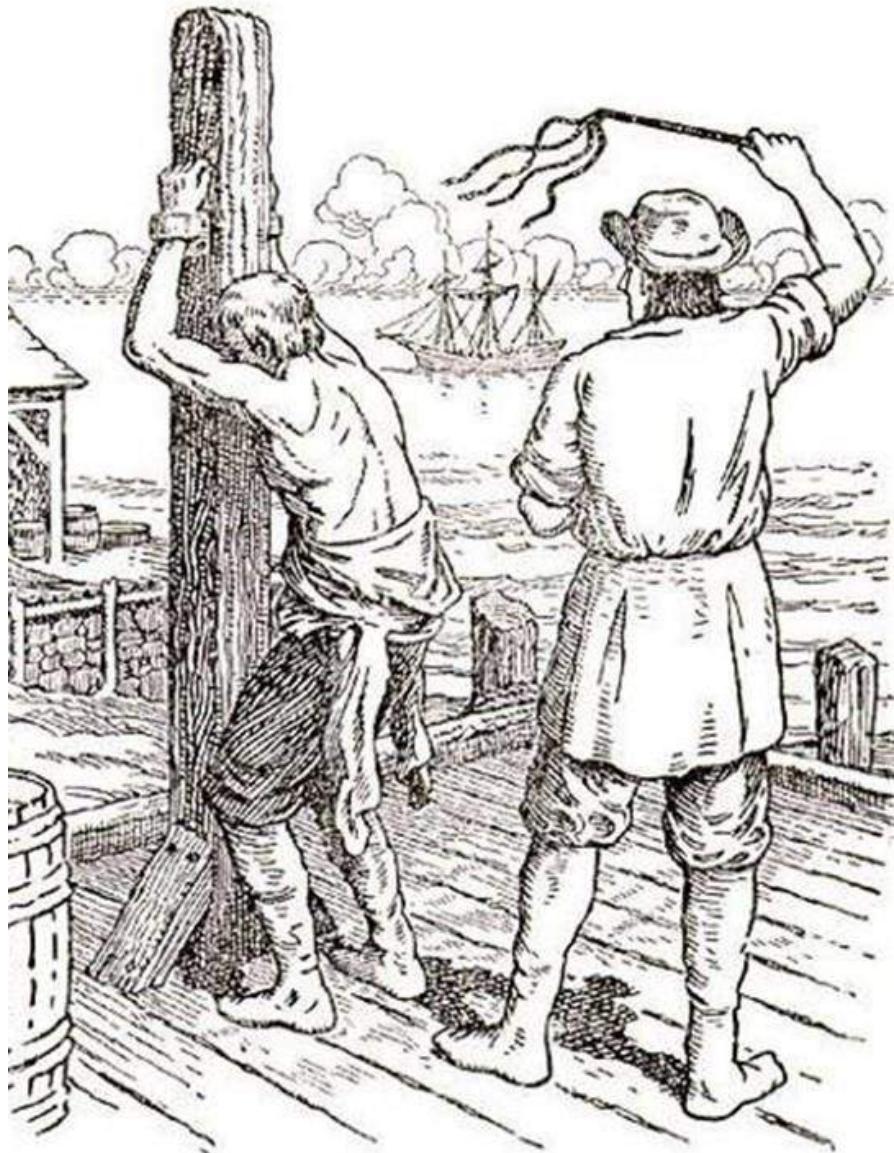
Illustration by Elizabeth Barndollar



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

- What rewards is my game giving out now? Can it 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 be better connected?

The Lens of Reward



Balance Type #9: Punishment

WHY PUNISH?

Balance Type #9: Punishment

- ▶ Why Punish?
 - ▶ Endogenous value
 - ▶ Taking risks is exciting
 - ▶ Possible punishment increases challenge

Common types of punishment

?



SPANKING
Sometimes nothing else will do the job.

Common types of punishment

- Shaming
- Loss of Points
- Shortened Play
- Terminated Play
- Setback
- Removal of Powers
- Resource Depletion





Illustration by Chris Daniel



Punishment must be used delicately. Balanced appropriately, it will make your game more meaningful, and provide successful players with a real sense of pride. To examine the punishment in your game, ask yourself these questions:

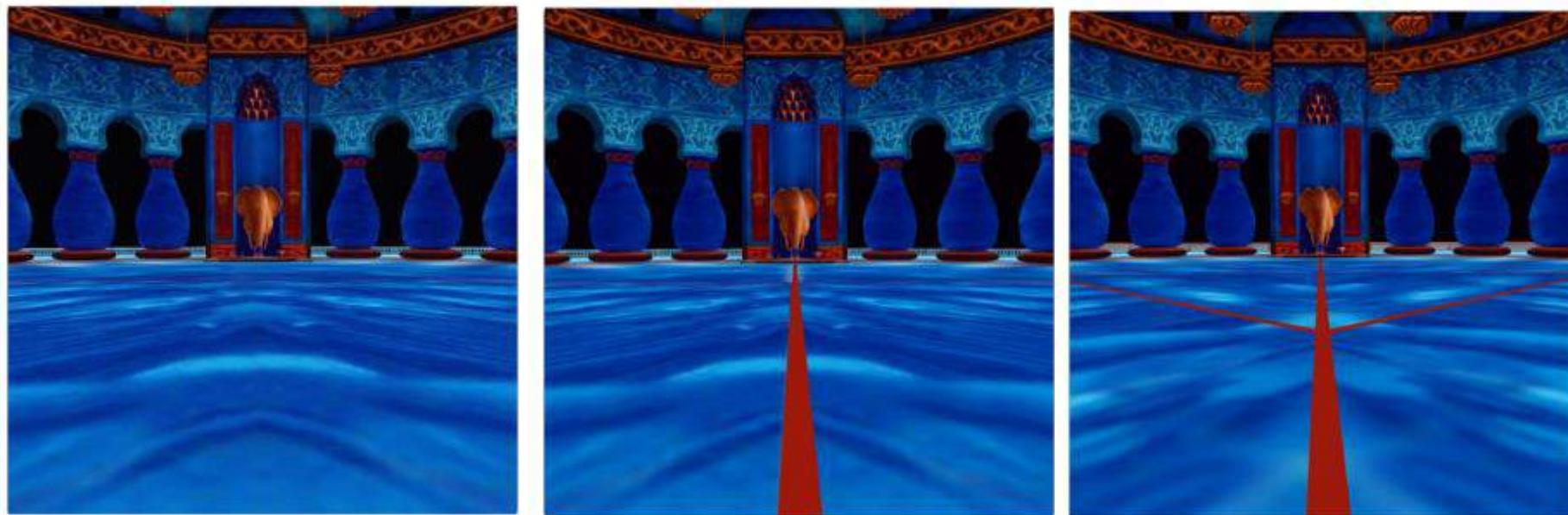
- *What are the punishments in my game?*
- *Why am I punishing the players? What do I hope to achieve by it?*
- *Do my punishments seem fair to the players? Why/why not?*
- *Is there a way to turn these punishments into rewards and get the same, or a better effect?*
- *Are my strong punishments balanced against*

The Lens of Punishment

Balance Type #10: Freedom vs. Controlled Experience

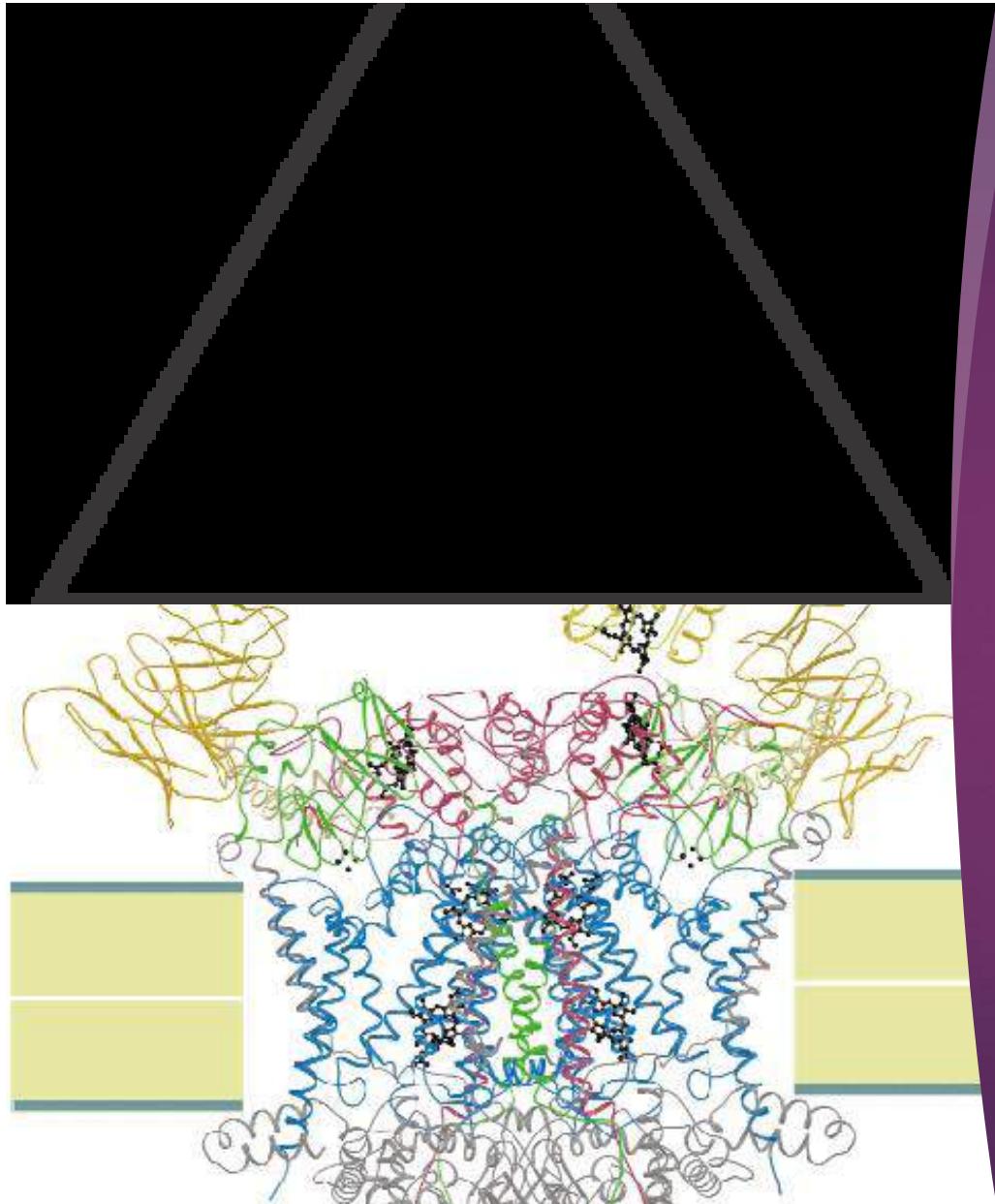


Balance Type #10: Freedom vs. Controlled Experience



Balance Type #11: Simple vs. Complex

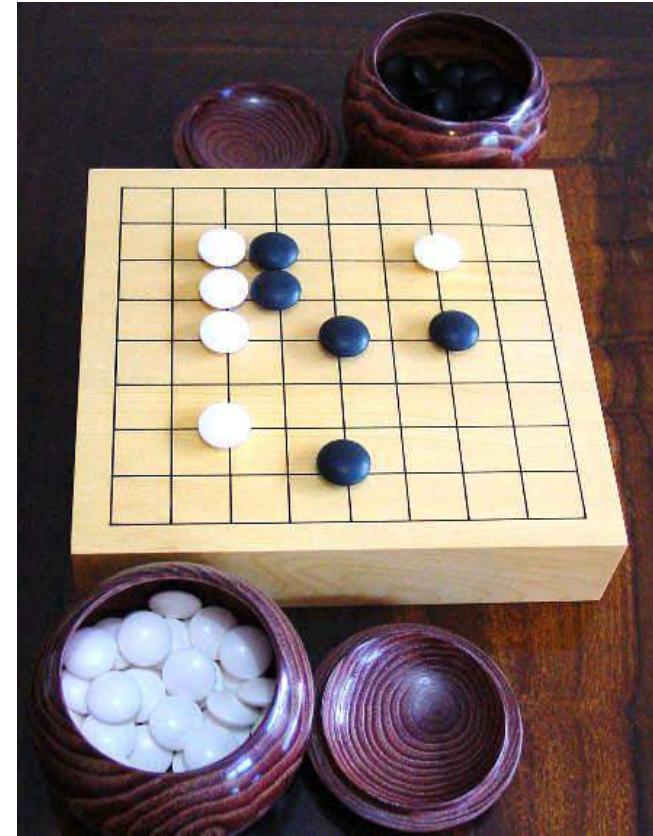
WHICH IS BETTER, SIMPLE OR COMPLEX?



Kinds of Complexity



Innate Complexity



Emergent Complexity

Innate or Emergent?



Illustration by Tom Smith

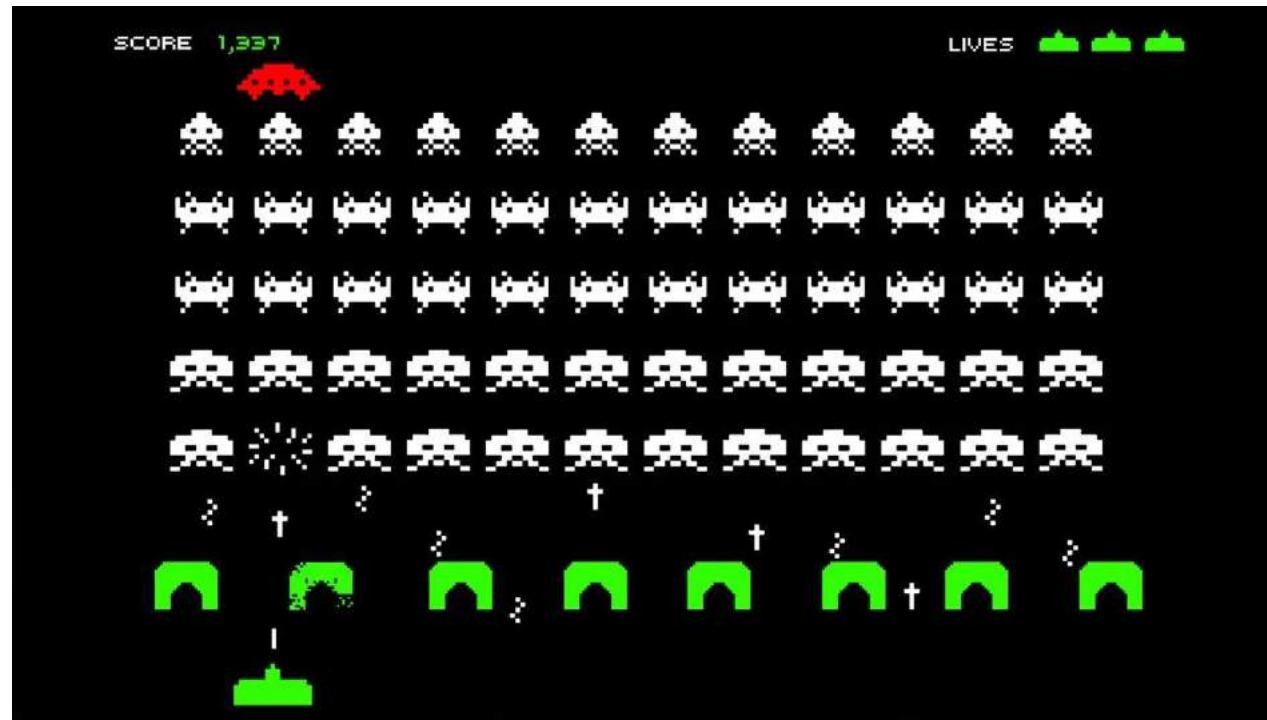


Striking the right balance between simplicity and complexity is difficult. Use this lens to help your game become one in which meaningful complexity rises out of a simple system.
Ask yourself these questions:

- What elements of innate complexity do I have in my game?
- Is there a way this innate complexity could be turned into emergent complexity?
- Do elements of emergent complexity arise from my game? If not, why not?
- Are there elements of my game that are too simple?

The Lens of Simplicity / Complexity

Natural vs. Artificial Balancing



The Formula for Elegance

- ▶ Count the purposes.
- ▶ What is the purpose of the dots in Pac-Man?

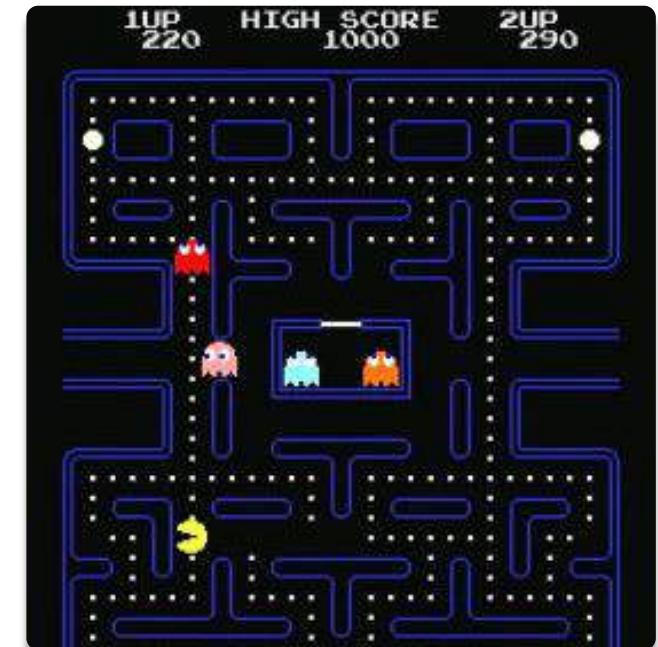




Illustration by Joshua Seaver



Most “classic games” are considered to be masterpieces of elegance. Use this lens to make your game as elegant as possible.
Ask yourself these questions:

- What are the elements of my game?
- What are the purposes of each element? Count these up to give the element an “elegance rating.”
- For elements with only one or two purposes, can some of these be combined into each other, or removed altogether?
- For elements with several purposes, is it possible for them to take on even more?

The Lens of Elegance

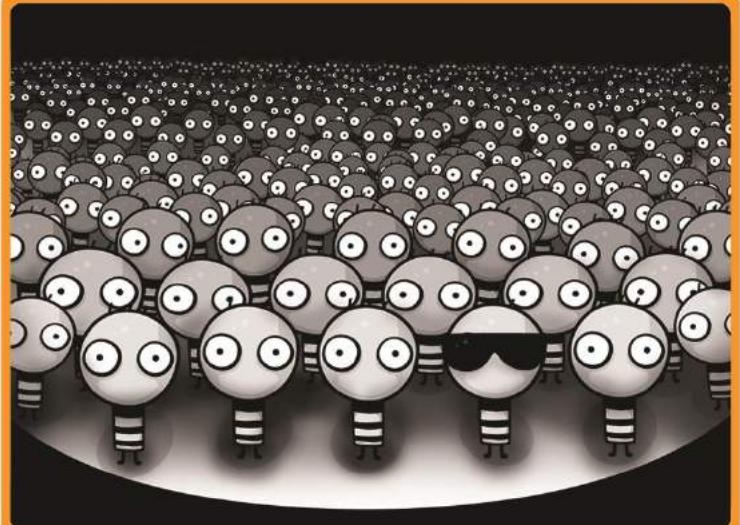


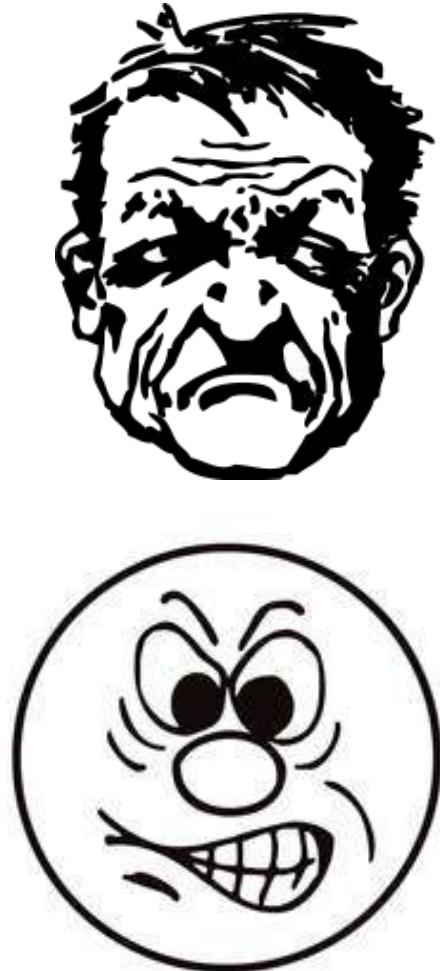
Illustration by Kyle Gabler



Elegance and character are opposites. They are like miniature versions of simplicity and complexity, and must be kept in balance. To make sure your game has lovable, defining quirks, ask yourself these questions:

- Is there anything strange in my game that players talk about excitedly?
- Does my game have funny qualities that make it unique?
- Does my game have flaws that players like?

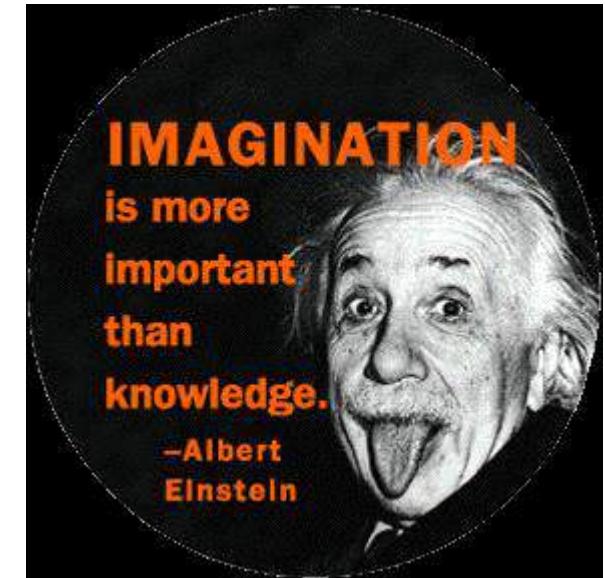
The Lens of Character



Balance Type #12: Detail vs. Imagination

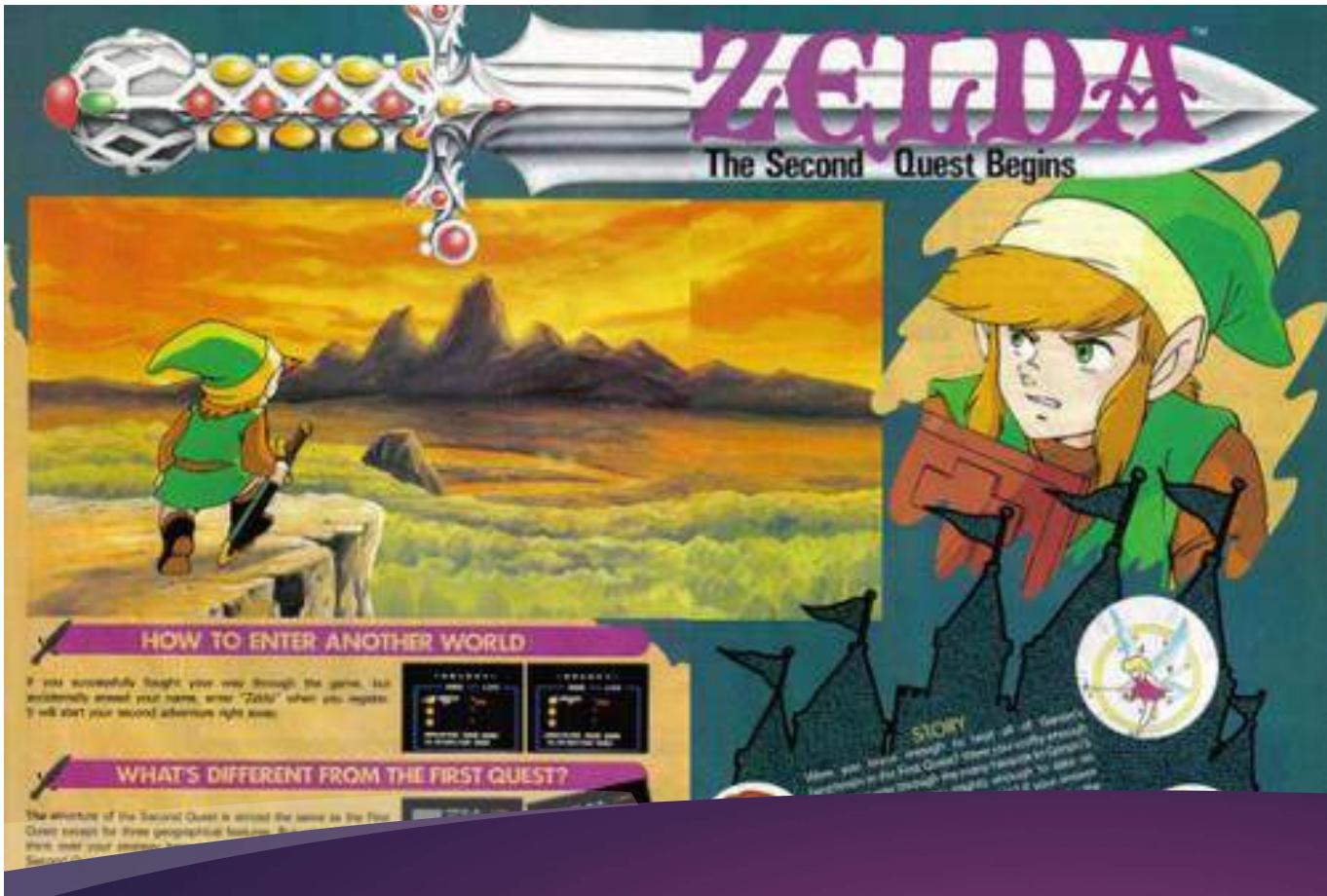
Balance Type #11: What to detail?

- Only detail what you can do well.
- Give the details the imagination can use.
- Familiar worlds do not need much detail.
- Use the binocular effect.
- Give details that inspire imagination.





Full Throttle



Zelda

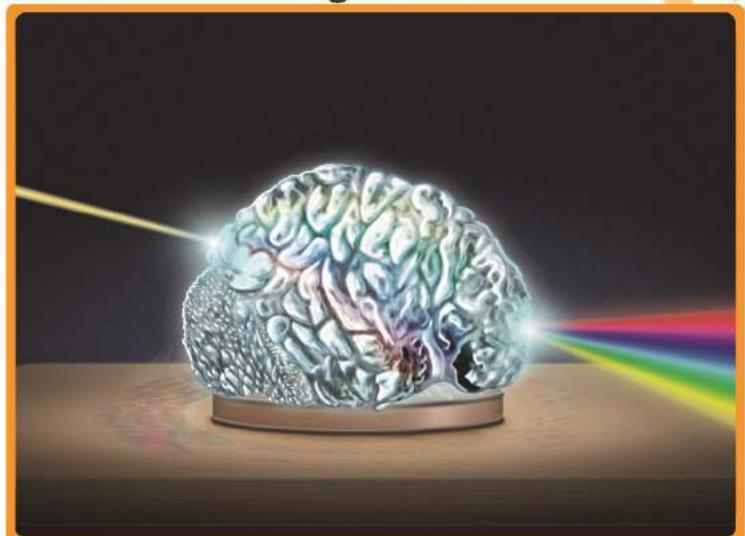


Illustration by Elizabeth Barndollar



All games have some element of imagination, and some element of reality. Use this lens to help find the balance between detail and imagination.

Ask yourself these questions:

- What must the player understand in order to play my game?
- Can some element of imagination help them understand that better?
- What high-quality, realistic details can we provide in this game?
- What details would be low-quality if we provided them? Can imagination fill the gap instead?
- Can I give details that the imagination will be able to reuse again and again?
- Which details inspire imagination?

The Lens of Imagination

How do you balance?

- ▶ Use the Lens of the Problem Statement
- ▶ Doubling and Halving
- ▶ Train Your Intuition by Guessing Exactly
- ▶ Document your model
- ▶ Tune your model as you tune your game
- ▶ Plan to Balance
- ▶ Magic moment: I don't know what to do!
- ▶ Let the players do it?



Illustration by Sam Yip



There are many types of game balance, and each is important. However, it is easy to get lost in the details, and forget the big picture. Use this simple lens to get out of the mire, and ask yourself these questions:

- Does my game feel right?

The Lens of Balance

Balancing Lens Recap

The Lens of Chance

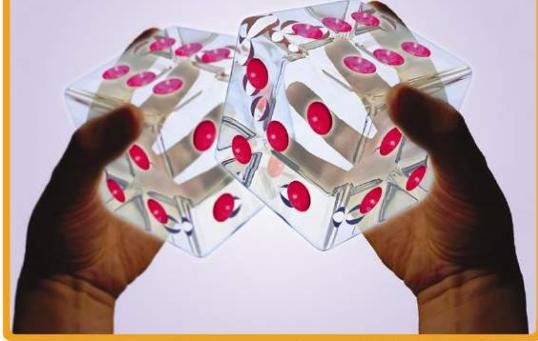


Illustration by Joshua Seaver

This section provides a recap of the "Lens of Chance" from the previous chapter, featuring 15 numbered cards and a summary section.

Card 30: ea
Should I have
Should I have
Which measure
What makes
If I was what
challe

Card 33: G lova a
low a g
exciting

Card 34: To ma
of mer

Card 35: be c
be d
As game

Card 38: Co
40

Card 41: Pun
ap
mean
a real s
y

Card 42: Str
co gam

Card 43: M
mast

Card 44: Elega
like mi
and r

Card 45: All ga
some e
b

Card 47: There a
is imp
the de
sim

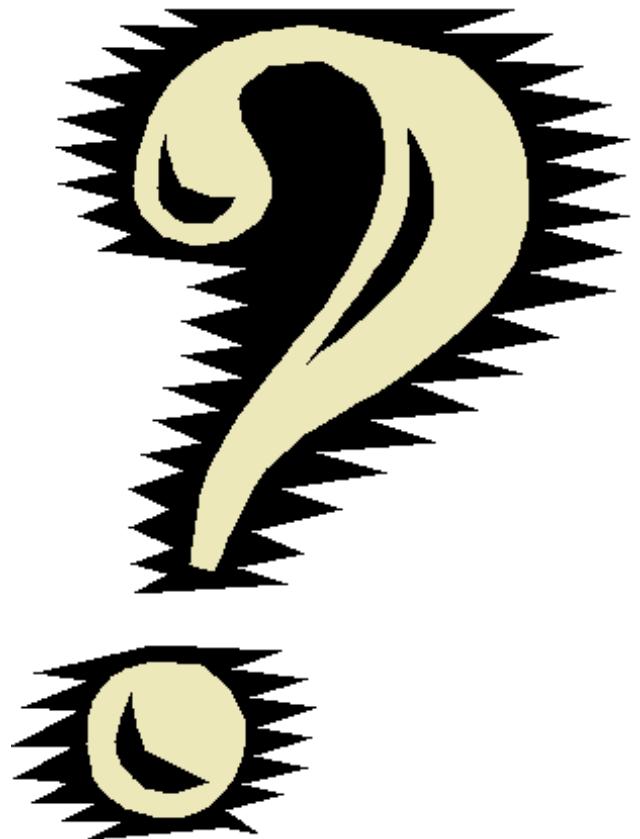
Card 27:

Card 29:

Summary:

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:

- 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?
- Can players make decisions based on chance?
- What is the relationship between chance and skill in my game?



Questions??

FOR MORE INFORMATION CONTACT:

SERGI.BERMUDEZ@UMA.PT

“

Game Design: Lecture 10 – Playtesting

”



UNIVERSIDADE da MADEIRA

MDMi Master of
Interactive
Media Design

Sergi Bermúdez i Badia
<sergi.bermudez@uma.pt>

Check the talk
available in
moodle...

Free
Online Master Class

BREAKING INTO THE GAME INDUSTRY

Thursday 20th of May @ 11h

Andreas Gschwari

Andreas' 20-year career in the games industry spans localisation, production and game design with AAA games studios from Avalanche to Wargaming. He currently is a Creative Consultant with Flying Wild Hog in Cracow.

Ross Farrow

Ross began working in finance roles at a number of blue-chip companies. Since 2012, he gained Board level experience in the game industry, working as a CFO, playing a pivotal role in the restructuring, growth and eventual sale of Splash Damage. Having co-founded Supernova, he has a wealth of experience across investment, M&A, fundraisings and corporate tax issues.

What is Playtesting??

Listening to the AUDIENCE!



Some hard truths!

- ▶ If the fundamental design is bad, there will be no saving the prototype; but good ***playtesting can make a weak game pretty good.***

Some hard truths!

- ▶ If the fundamental design is bad, there will be no saving the prototype; but good ***playtesting can make a weak game pretty good.***
- ▶ ***Poor playtesting*** and modification will make even the best game weak

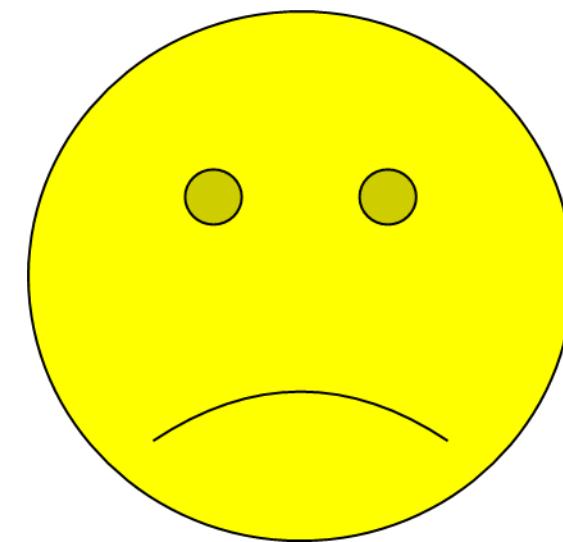
Some hard truths!

- ▶ If the fundamental design is bad, there will be no saving the prototype; but good **playtesting can make a weak game pretty good.**
- ▶ **Poor playtesting** and modification will make even the best game weak
- ▶ I
 - ▶ Publishers make schedules and the “suits” don’t understand the iterative nature of the process
 - ▶ Electronic games are engineering problems: and no one can say with certainty how long is needed to solve an engineering problem
 - ▶ So frequently, studio runs out of time and a poor game is published
 - ▶ “Patches” can do only so much to repair weak gameplay; they’re mainly for “bugs”

Some hard truths!

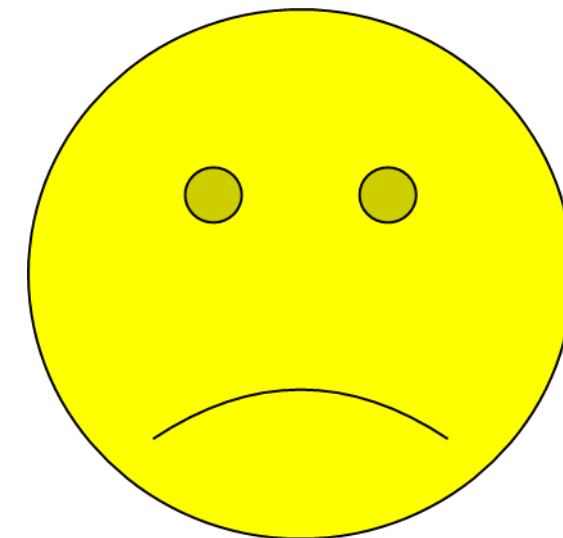
- ▶ If the fundamental design is bad, there will be no saving the prototype; but good **playtesting can make a weak game pretty good.**
- ▶ **Poor playtesting** and modification will make even the best game weak
- ▶ I
 - ▶ Publishers make schedules and the “suits” don’t understand the iterative nature of the process
 - ▶ Electronic games are engineering problems: and no one can say with certainty how long is needed to solve an engineering problem
 - ▶ So frequently, studio runs out of time and a poor game is published
 - ▶ “Patches” can do only so much to repair weak gameplay; they’re mainly for “bugs”
- ▶ **“The single most important rule of testing is to do it” - Kerningham Pike 1999**

The Secret Shame



The Secret Shame

- ▶ Why is playtesting so hard?
- ▶ What are the dangers of not playtesting?



*You are cordially invited to tell
me why I suck*
**Bring a friend - Refreshments
Served!**

Set your EGO apart!!

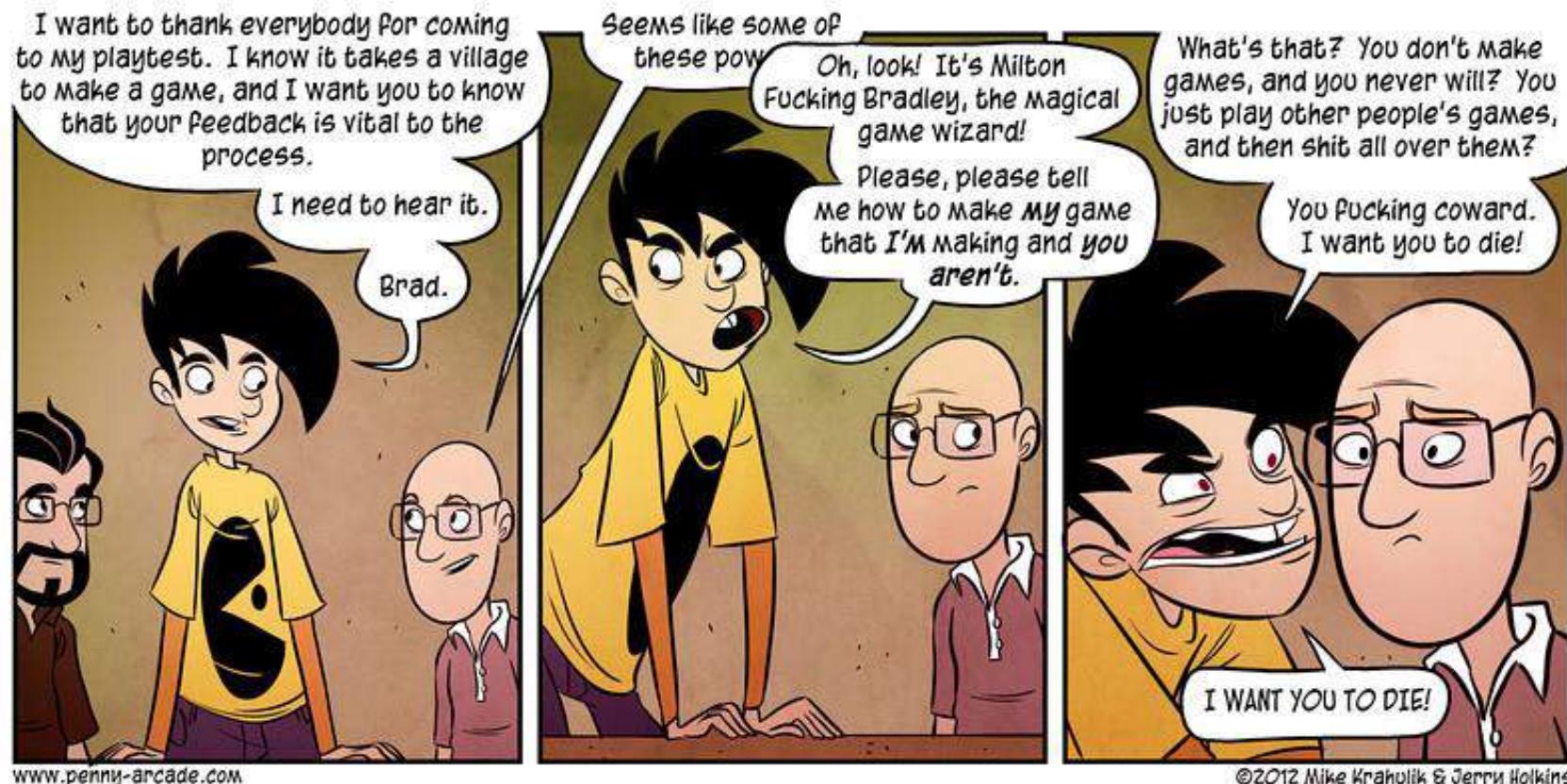
I want to thank everybody for coming to my playtest. I know it takes a village to make a game, and I want you to know that your feedback is vital to the process.

I need to hear it.

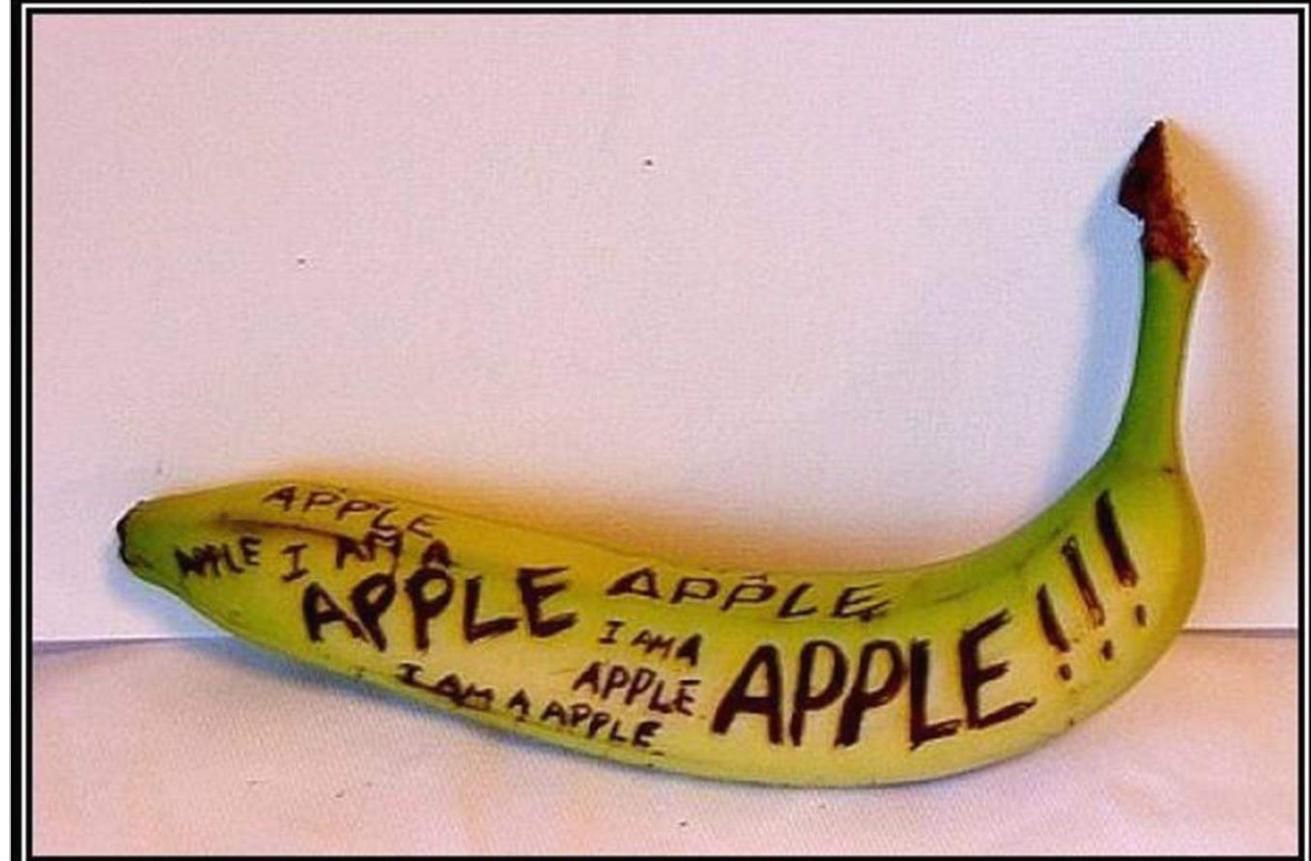
Brad.



Set your EGO apart!!



Our Worst Enemy: Denial



D E N I A L

Our Worst Enemy: Denial

- ▶ Put your ego away



D E N I A L

Our Worst Enemy: Denial

- ▶ Put your ego away
- ▶ Don't be defensive



D E N I A L

Our Worst Enemy: Denial

- ▶ Put your ego away
- ▶ Don't be defensive
- ▶ **LISTEN**



D E N I A L

Types of
Testing?

Types of Testing

■ Focus Groups:

- Typically done by the publisher, and involves talking to **small groups** (usually 4-8 gamers) in a room about the game.
- They may get to see or **play demos of the game**, and are asked about their perceptions, opinions, beliefs and attitudes towards it.
- Questions are asked in an **interactive group setting** where participants are free to talk with other group members.
- Tend to happen very **late in the process** when feedback is hard to action on (not timely) and not sufficiently granular.
- The **costs** for focus groups can also be quite high.

Types of Testing

■ Usability Testing:

- Technique used to evaluate a product by testing it on users. This can be seen as an irreplaceable usability practice, since it gives direct input on how real users use the system.
- This form of testing has been a part of the software industry for years and is a staple of the HCI (***Human-Computer Interaction***) field more so than psychology.
- Typically associated with small sample ***observational studies*** (2-3 days, 6-9 participants, individual 2-hour sessions).
- Measures include: ***comments, behaviors, task times, error rates***.

Types of Testing

■ **Quality Assurance Testing:**

- Systematic monitoring and evaluation of the various aspects of a project, service or facility to maximize the probability that minimum standards of quality are being attained by the production process.

... and Playtesting!



First playtest question: What?

- ▶ To best improve a game, you must have a playable prototype

First playtest question: What?

- ▶ To best improve a game, you must have a playable prototype
- ▶ The rules for a non-video game are the equivalent of the programming of a video game:
 - ▶ Programming must be precise and is very time consuming (game engines may help)
 - ▶ A **playable** set of rules can be much less precise, relying on the mind(s) of the designer(s), and notes

First playtest question: What?

- ▶ To best improve a game, you must have a playable prototype
- ▶ The rules for a non-video game are the equivalent of the programming of a video game:
 - ▶ Programming must be precise and is very time consuming (game engines may help)
 - ▶ A **playable** set of rules can be much less precise, relying on the mind(s) of the designer(s), and notes
- ▶ It's also **much** easier to change the non-video prototype to test different approaches

First playtest question: What?

- ▶ To best improve a game, you must have a playable prototype
- ▶ The rules for a non-video game are the equivalent of the programming of a video game:
 - ▶ Programming must be precise and is very time consuming (game engines may help)
 - ▶ A **playable** set of rules can be much less precise, relying on the mind(s) of the designer(s), and notes
- ▶ It's also **much** easier to change the non-video prototype to test different approaches
- ▶ It's **much** easier to produce the physical prototype, than to create the artwork for a video game

Prototypes: "testing is sovereign"

- Gears of War II about 40,000 playtest hours == 4.63 years!



Prototypes: "testing is sovereign"

- Civilization I — Sid Meier programmed, Bruce Shelley tested, they talked, Sid modified, Bruce tested again, day after day. Meier said:

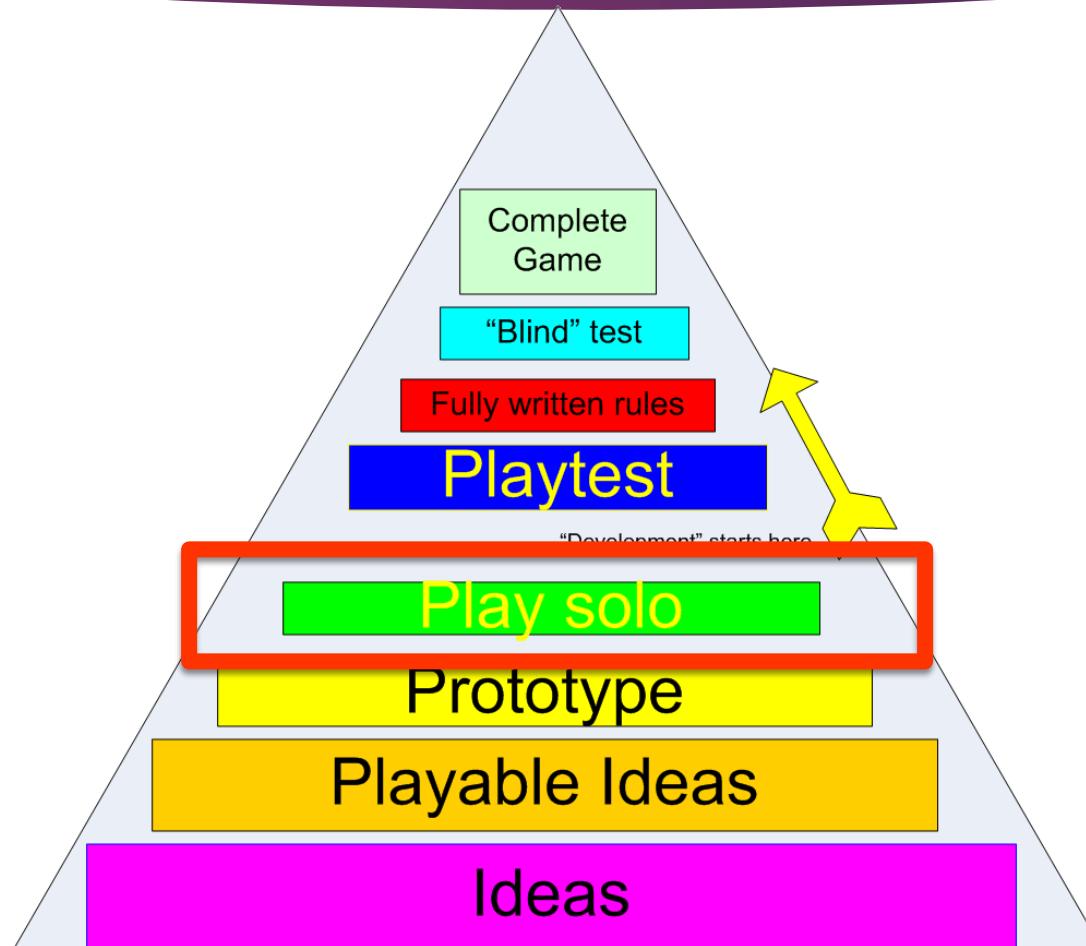
*"My whole approach to making games revolves around first creating a **solid prototype** and then playing and improving the game over the course of the 2-3 year development cycle... until we think it's ready for prime time... I definitely spend a lot of time playing the game before I let anyone else look at it."*





Prototypes: "testing is sovereign"

Testing Hierarchy



Prototypes: Play it Solo

When you have a playable prototype ***play it yourself, solo,
before you inflict on other people!***

Prototypes: *Play it Solo*

When you have a playable prototype ***play it yourself, solo, before you inflict on other people!***

- ▶ Experienced designers have a much better chance of recognizing what will suck before the game is played:
 - ▶ A
 - ▶ Beginners should try to do the same but will be much less successful at spotting the flaws.

Prototypes: Play it Solo

When you have a playable prototype **play it yourself, solo, before you inflict on other people!**

- ▶ Experienced designers have a much better chance of recognizing what will suck before the game is played:
 - ▶ A
 - ▶ Beginners should try to do the same but will be much less successful at spotting the flaws.
 - ▶ What solo testing can do is quickly reveal where the game really sucks so that you can change it before other people have to put up with it.
 - ▶ I
- In other words, **be nice to your playtesters**: get rid of the really bad aspects yourself rather than foist them on other people who want to play a fun game.

Play it Solo: *Put yourself in the player's shoes*

What do you want them to feel as they play?

What decisions can they make?

How do they affect the course and outcome of the game?

What must they do that might not be “enjoyable” (especially: recordkeeping)?
How can this be eliminated?

Second playtest question: Who?

Well, who?



Second playtest question: Who?

Well, who?

- ▶ Developers – Pros and Cons?



Second playtest question: Who?

Well, who?

- ▶ Developers – Pros and Cons?
- ▶ Friends – Pros and Cons?



Second playtest question: Who?

Well, who?

- ▶ Developers – Pros and Cons?
- ▶ Friends – Pros and Cons?
- ▶ “Expert Gamers” – Pros and Cons?



Second playtest question: Who?

Well, who?

- ▶ Developers – Pros and Cons?
- ▶ Friends – Pros and Cons?
- ▶ “Expert Gamers” – Pros and Cons?
- ▶ “Tissue Testers” – Pros and Cons?



*Third playtest
question:
Where?*

*Third playtest
question:
Where?*

- ▶ In your studio?



Third playtest question: Where?

- ▶ In your studio?
- ▶ In a playtesting lab?

Third playtest question: Where?

- ▶ In your studio?
- ▶ In a playtesting lab?
- ▶ At a public venue?

Third playtest question: Where?

- ▶ In your studio?
- ▶ In a playtesting lab?
- ▶ At a public venue?
- ▶ At their homes?

Third playtest question: Where?

- ▶ In your studio?
- ▶ In a playtesting lab?
- ▶ At a public venue?
- ▶ At their homes?
- ▶ On the Internet?
 - ▶ Zynga Data Analysis:
 - ▶ Metrics!
 - ▶ Online data collection
 - ▶ Descentralized analysis / 30% employers access it -> fast loop

Third playtest question: Where?

Internet:

- ▶ Define key data to record
- ▶ You should be able to deal with the data!!
- ▶ Think about your metrics
- ▶ Event logging system



- ▶ Things you know you are looking for, such as...



Fourth Playtesting Question: What?

- ▶ Things you know you are looking for, such as...
- ▶ Things you don't know you are looking for!



Fourth Playtesting Question: What?



Player Name: _____ Date: _____

Game Name: _____

Player	Categories	Rating	Notes																		
Age: M / F	Rules: How clear are the rules? Do they cover all eventualities?	Not Clear <table border="1"><tr><td>1</td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td>10</td></tr></table> Very Clear	1								10										
1								10													
Which game genres do you like?	Game-flow: How streamlined is the gameplay? Is there any unnecessary fiddliness?	Poor Flow <table border="1"><tr><td>1</td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td>10</td></tr></table> Flows Well	1								10										
1								10													
Strategy Games: Dislike <table border="1"><tr><td>1</td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td>10</td></tr></table> Like	1								10	Balance: Is the game fair for all players? Is the game too luck-orientated?	Poorly Balanced <table border="1"><tr><td>1</td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td>10</td></tr></table> Well Balanced	1								10	
1								10													
1								10													
Role-playing Games: Dislike <table border="1"><tr><td>1</td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td>10</td></tr></table> Like	1								10	Length: Is the game too long? Were you still engaged at the end?	Wrong Length <table border="1"><tr><td>1</td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td>10</td></tr></table> Good Length	1								10	
1								10													
1								10													
Wargames: Dislike <table border="1"><tr><td>1</td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td>10</td></tr></table> Like	1								10	Integration: Do the mechanics work well together? Does the theme match the mechanics?	Poor Match <table border="1"><tr><td>1</td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td>10</td></tr></table> Works Well	1								10	
1								10													
1								10													
Card Games: Dislike <table border="1"><tr><td>1</td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td>10</td></tr></table> Like	1								10	Theme: Were you engaged by the theme? Did you enjoy the graphics?	Poor Theme <table border="1"><tr><td>1</td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td>10</td></tr></table> Good Theme	1								10	
1								10													
1								10													
Party Games: Dislike <table border="1"><tr><td>1</td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td>10</td></tr></table> Like	1								10	Fun: Was the game fun to play? Is this a game you would play again?	No Fun <table border="1"><tr><td>1</td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td>10</td></tr></table> Very Fun	1								10	
1								10													
1								10													
Dexterity Games: Dislike <table border="1"><tr><td>1</td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td>10</td></tr></table> Like	1								10	Clarity: How clear is the gameplay? How clear are the graphics / board design?	Not Clear <table border="1"><tr><td>1</td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td>10</td></tr></table> Very Clear	1								10	
1								10													
1								10													
About Yourself:	Further Notes: 	(Continue Overleaf)	How much would you pay for this game in a shop? _____																		

Designer Notes (Conclusions, Changes to Make)



Game Name:	Date:	
Version:	Type of Test:	Location:

Pre-Game			Early Game			Mid-Game			Late Game			End Game	
Rules Start:	Play Start:	Elapsed: mins	Rounds	Time	Elapsed mins	Rounds	Time	Elapsed mins	Rounds	Time	Elapsed mins	Rounds	Time
Player: <input type="checkbox"/> New <input type="checkbox"/> Start			Engagement 10			Engagement 10			Engagement 10				
			Score:						Score:				
Player: <input type="checkbox"/> New <input type="checkbox"/> Start			Engagement 10			Engagement 10			Engagement 10				
			Score:						Score:				
Player: <input type="checkbox"/> New <input type="checkbox"/> Start			Engagement 10			Engagement 10			Engagement 10				
			Score:						Score:				
Player: <input type="checkbox"/> New <input type="checkbox"/> Start			Engagement 10			Engagement 10			Engagement 10				
			Score:						Score:				
Player: <input type="checkbox"/> New <input type="checkbox"/> Start			Engagement 10			Engagement 10			Engagement 10				
			Score:						Score:				
Player: <input type="checkbox"/> New <input type="checkbox"/> Start			Engagement 10			Engagement 10			Engagement 10				
			Score:						Score:				
Test Goals & Considerations			Observations			Observations			Observations			Total Time mins	Total Rounds

Changes Since Last Test

Conclusions, Changes to Make

Fifth Playtesting Question: How?

Fifth Playtesting Question: How?

- ▶ Should you even be there?

Fifth Playtesting Question: How?

- ▶ Should you even be there?
- ▶ What should you tell them up front?

Fifth Playtesting Question: How?

- ▶ Should you even be there?
- ▶ What should you tell them up front?
- ▶ Where do you look?

Game Faces – Peter
Toledano
Wired – Apr 2007





















Fifth Playtesting Question: How?

- Should you even be there?
- What should you tell them up front?
- Where do you look?
- What other data should you collect during play?
 - Video?
 - Game events?
- Should I disturb them?
- What data should I collect after?

Good feedback and good feedback delivery system !!

- ▶ The feedback should accurately represent the **opinions of the target gamers**
 - ▶ The group of gamers that the game is trying to appeal to (e.g., driving gamers, RTS gamers, etc.)
 - ▶ Misleading feedback is worse than no feedback.

Good feedback and good feedback delivery system !!

- ▶ The feedback should accurately represent the **opinions of the target gamers**
 - ▶ The group of gamers that the game is trying to appeal to (e.g., driving gamers, RTS gamers, etc.)
 - ▶ Misleading feedback is worse than no feedback.
- ▶ The feedback should arrive **in time for the designer to use it**.
 - ▶ e.g., after the game is on the shelf, or after that feature is locked down

Good feedback and good feedback delivery system !!

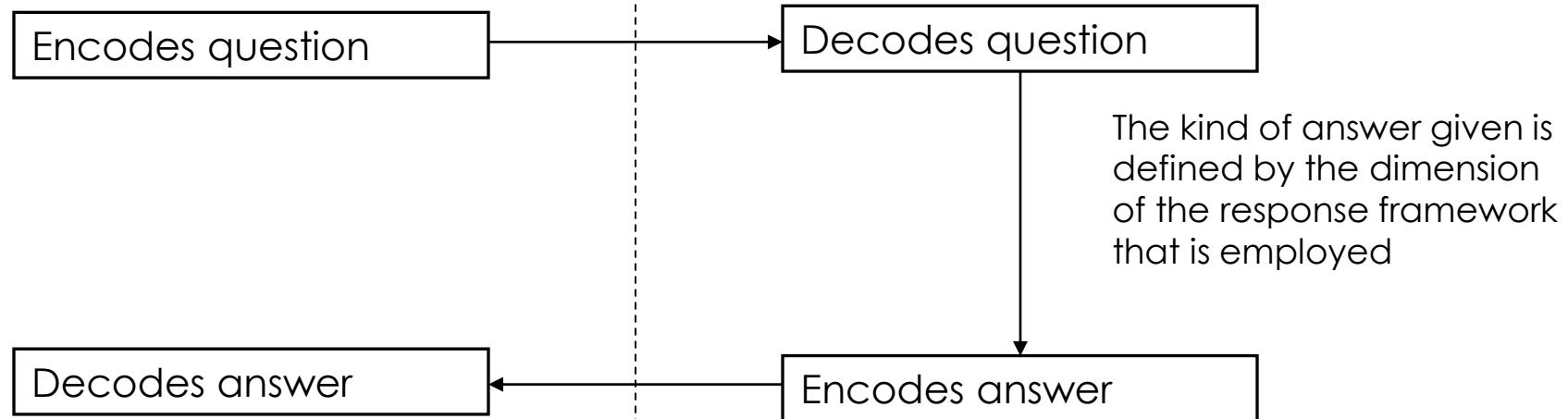
- ▶ The feedback should be sufficiently **granular** for the designer to take action on it.
 - ▶ Not good → "gamers hate dumb-sounding weapons" or "some of the weapons sound dumb"
 - ▶ Good → "Weapon A sounds dumb, but Weapons B, C, and D sound great."

Good feedback and good feedback delivery system !!

- ▶ The feedback should be sufficiently **granular** for the designer to take action on it.
 - ▶ Not good → "gamers hate dumb-sounding weapons" or "some of the weapons sound dumb"
 - ▶ Good → "Weapon A sounds dumb, but Weapons B, C, and D sound great."
- ▶ The feedback should be relatively **easy to get**.
 - ▶ Don't pay more money or time than the information is worth (\$100k and 20 person hours to learn that people slightly prefer the fire-orange Alpha paint job)

Contextual influences on respondents' interpretation of questions

Interviewer Responder



* Adapted from William Foddy



Contextual influences on respondents' interpretation of questions

Closed or Open?

- ▶ Open questions:
 - ▶ Open: The player can say whatever they like,
 - ▶ Allow for **richer data** to be collected, as they let players give as much feedback as they want.
 - ▶ However, they can also give as little as they want, and often without direction, the answers may be vague.

Closed questions: Dichotomous

- ▶ This is for simple yes/no questions.
- ▶ It is nice, direct, and precise.
- ▶ Not very data rich...

* Finding Out What They Think: A Rough Primer To User Research, Part 1 - Ben Lewis-Evans

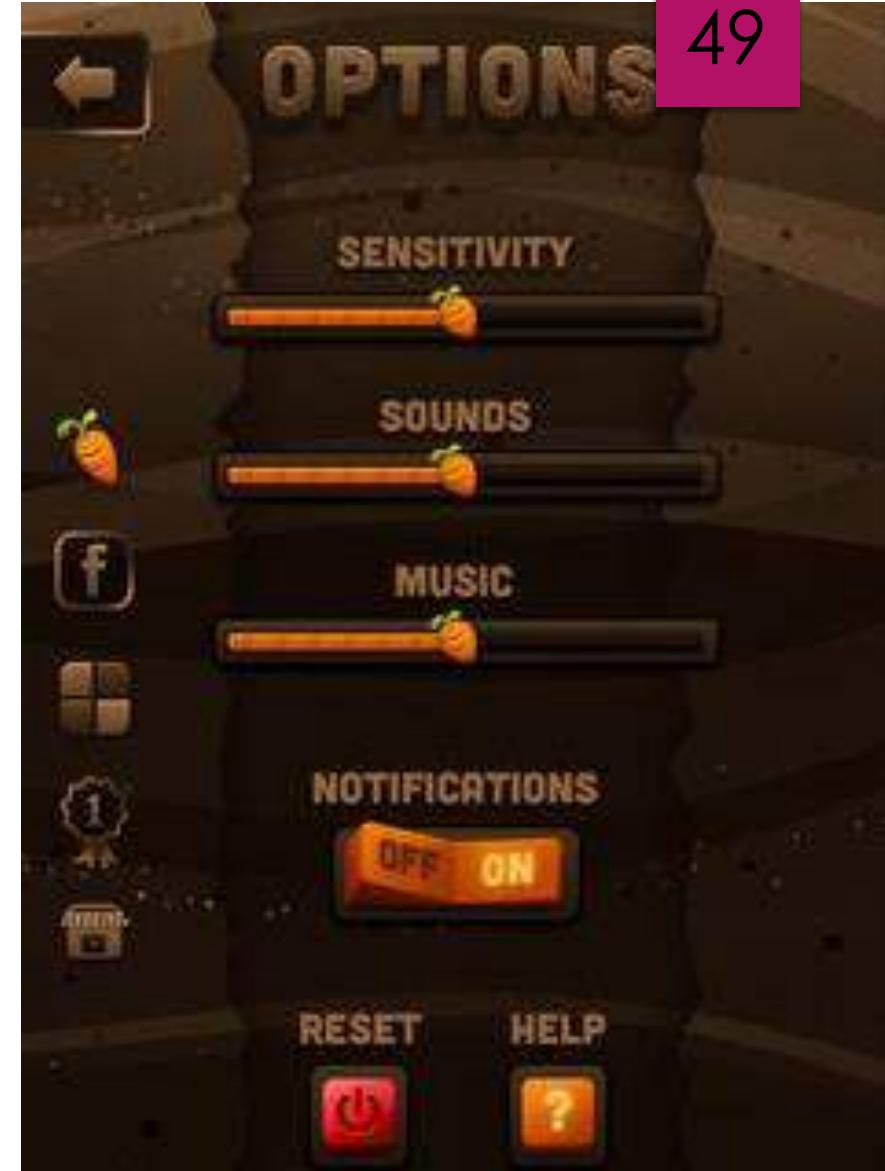


A dichotomous choice in Diablo III

Closed questions: Continuous

- ▶ Ratings along a continuum or sliding
- ▶ Lots of (unnecessary) resolution

* Finding Out What They Think: A Rough Primer To User Research, Part 1 - Ben Lewis-Evans



Closed questions: Other

- ▶ A numeric just asks for a number and is used often to **rank** things.
- ▶ Likert scales are used to see how much someone **agrees or disagrees** with a certain statement, e.g. 1-7 where 1 is strongly disagree and 7 is strongly agree

Rules: How clear are the rules? Do they cover all eventualities?	Not Clear <input type="text" value="1"/> <input type="text"/> 10	Very Clear
Game-flow: How streamlined is the gameplay? Is there any unnecessary fiddliness?	Poor Flow <input type="text" value="1"/> <input type="text"/> 10	Flows Well
Balance: Is the game fair for all players? Is the game too luck-orientated?	Poorly Balanced <input type="text" value="1"/> <input type="text"/> 10	Well Balanced
Length: Is the game too long? Were you still engaged at the end?	Wrong Length <input type="text" value="1"/> <input type="text"/> 10	Good Length
Integration: Do the mechanics work well together? Does the theme match the mechanics?	Poor Match <input type="text" value="1"/> <input type="text"/> 10	Works Well
Theme: Were you engaged by the theme? Did you enjoy the graphics?	Poor Theme <input type="text" value="1"/> <input type="text"/> 10	Good Theme
Fun: Was the game fun to play? Is this a game you would play again?	No Fun <input type="text" value="1"/> <input type="text"/> 10	Very Fun
Clarity: How clear is the gameplay? How clear are the graphics / board design?	Not Clear <input type="text" value="1"/> <input type="text"/> 10	Very Clear

Questionnaire Tips (I)

- ▶ **Ensure that each issue is explored in more than one question;**
- ▶ **Decide the most appropriate kind of question and the kind of scale;**
- ▶ **Avoid leading questions:** ‘Do you prefer abstract, academic-type courses, or down-to-earth, practical courses that have some benefit in day-to-day work?’
- ▶ **Ensure that the question stem does not frame the answer:** ‘The tourism industry is successful because . . .’.

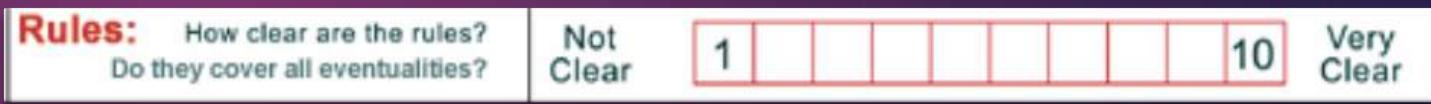
Questionnaire Tips (II)

- ▶ **Avoid negatives and double negatives:** ‘How far do you agree that without a Consumer Association the public cannot discuss consumer matters?’

- ▶ **Avoid complex questions:** ‘Would you prefer a short award-bearing course with part-day release and one evening per week attendance, or a longer, non-award-bearing course with full-day release, or the whole day designed on part-day release without evening attendance?’

Questionnaire Tips (III)

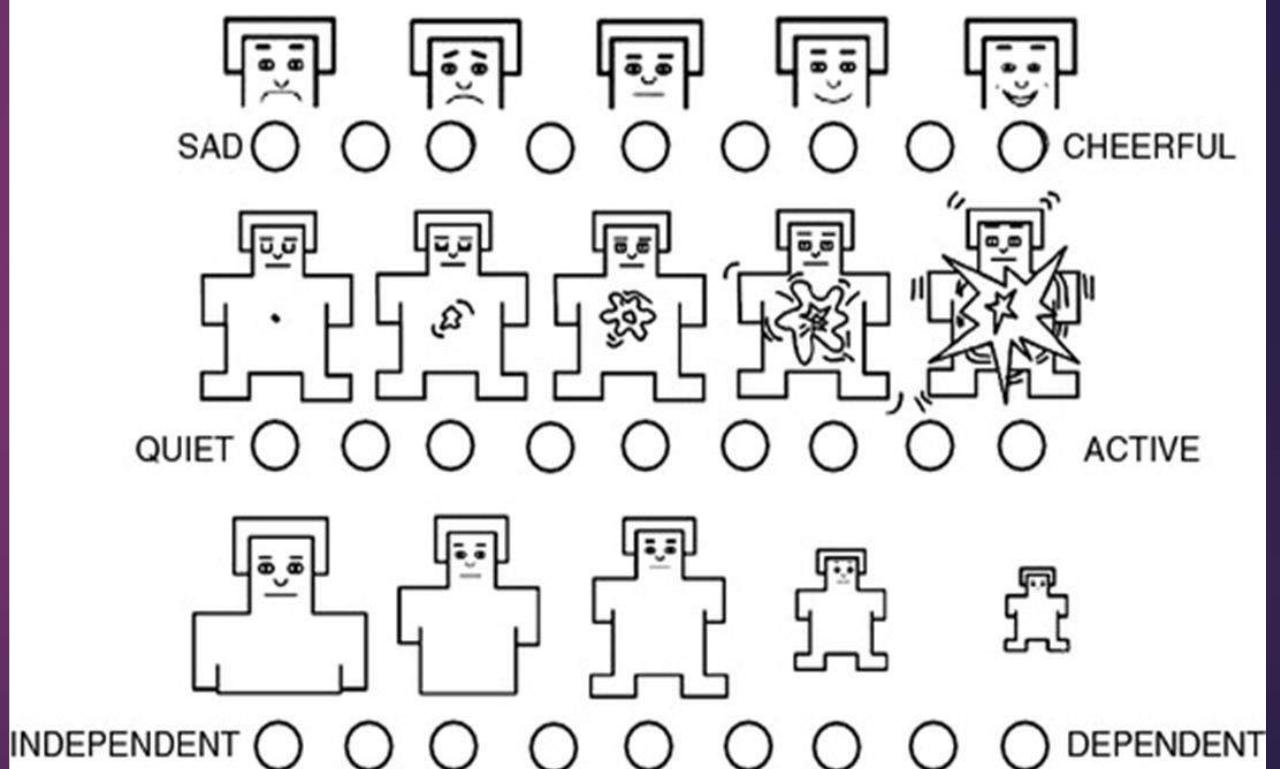
- ▶ Try to convert dichotomous questions into rating scales:
‘Do you...’ / ‘Are you...’ become ‘How far...?’ / ‘How much...?’
- ▶ Provide anchor statements for rating scales;



- ▶ Have a minimum five-point rating scale;
- ▶ Avoid too many open-ended questions in large surveys;

Questionnaire Tips (V)

- ▶ **Use pictures** whenever possible



* Self-Assessment Manikin. Lang 1980

Existing Questionnaires

- ▶ Pre-made questionnaires for HCI studies:

Acronym	Instrument	Reference	Institution	Example
QUIS	Questionnaire for User Interface Satisfaction	Chin et al, 1988	Maryland	27 questions
PUEU	Perceived Usefulness and Ease of Use	Davis, 1989	IBM	12 questions
NAU	Nielsen's Attributes of Usability	Nielsen, 1993	Bellcore	5 attributes
NHE	Nielsen's Heuristic Evaluation	Nielsen, 1993	Bellcore	10 heuristics
CSUQ	Computer System Usability Questionnaire	Lewis, 1995	IBM	19 questions
ASQ	After Scenario Questionnaire	Lewis, 1995	IBM	3 questions
PHUE	Practical Heuristics for Usability Evaluation	Perlman, 1997	OSU	13 heuristics
PUTQ	Purdue Usability Testing Questionnaire	Lin et al, 1997	Purdue	100 questions

- ▶ Refer to www.acm.org/~perlman/question.html for more information

Interviews: More flexible?

Questionnaires

- ▶ A printed form of questions is fixed!
- ▶ No additional information retrievable

Interviews

- ▶ More personal and flexible
- ▶ Novel opinions may emerge
- ▶ Interviewer can ask for clarification or elaboration on respondent's statements

trying very hard to make
games
that
don't **STINK**

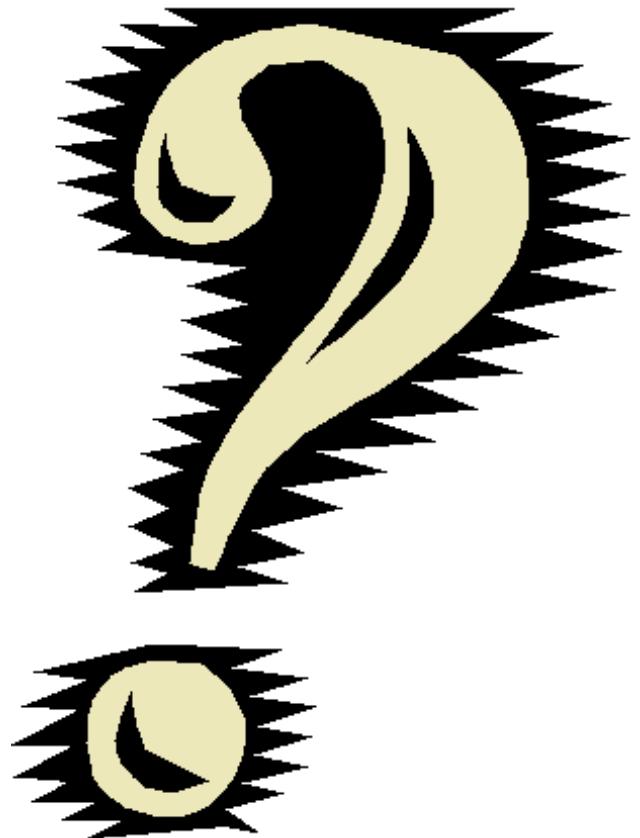


user testing at the NMSU Learning Games Lab

Barbara Chamberlin, PhD • bchamber@nmsu.edu

Further Reading:

- ▶ Microsoft testing Lab
 - ▶ link: <http://www.microsoft.com/en-us/playtest/default.aspx>
 - ▶ An article about the lab's philosophy and methods:
“Beyond Psychological Theory: Getting Data that Improve Games” - Bill Fulton
- ▶ Hot Failure: Tuning Gameplay with Simple Player Metrics
 - ▶ http://www.gamasutra.com/view/feature/6155/hot_failure_tuning_gameplay_with_.php



Questions??

FOR MORE INFORMATION CONTACT:

SERGI.BERMUDEZ@UMA.PT

“

Game Design: Lecture 11- Transmedia Worlds ”



UNIVERSIDADE da MADEIRA

MDMi Master of
Interactive
Media Design

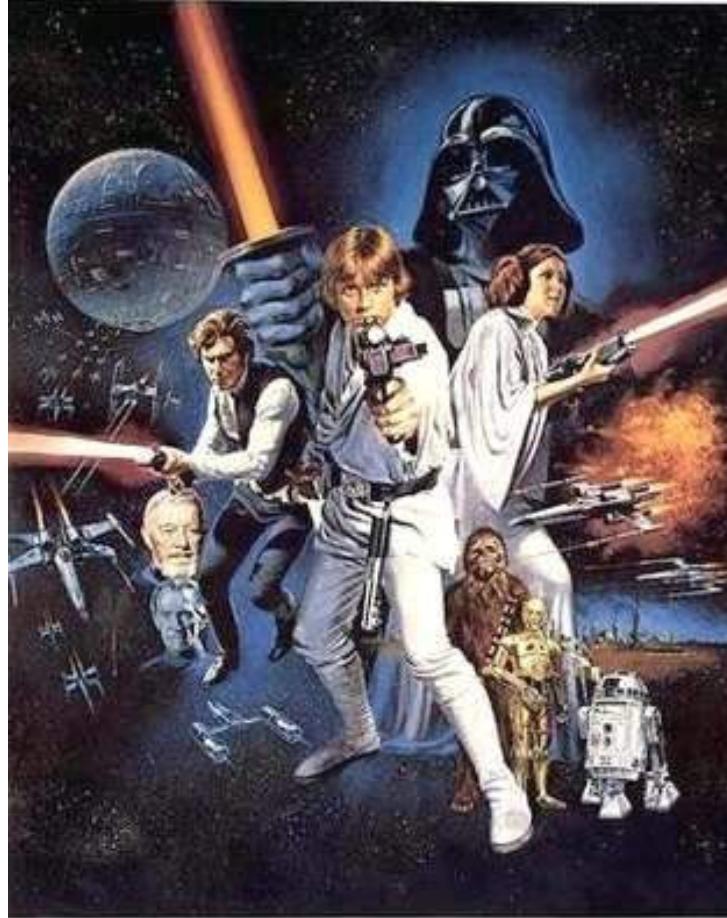
Sergi Bermúdez i Badia
<sergi.bermudez@uma.pt>



Transmedia Worlds EXIST APART and are infinite



Examples of Transmedia Worlds



TWENTIETH CENTURY FOX PRESENTS A LUKE FILM PRODUCTION STAR WARS
Starring MARK HAMILL HARRISON FORD CARRIE FISHER

PETER CUSHING

and ALEC GUINNESS

Written and Directed by
GEORGE LUCAS

Produced by
GARY KURTZ JOHN WILLIAMS

MUSIC BY
JOHN WILLIAMS
PRODUCTION DESIGNER
FRANCIS GUY
CINEMATOGRAPHY
FRANCIS GUY

STAR WARS

Walt Disney Company
DOLBY SYSTEM
Special Edition - 1982 Reissue

PROLOGUE FILM OF THE MONTH
1982
© 1982 Lucasfilm Ltd. All Rights Reserved



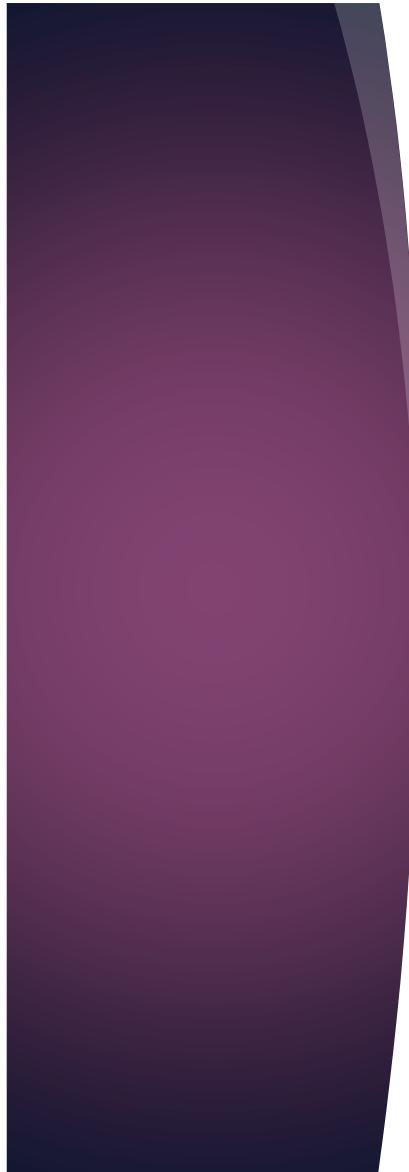














STAR WARS
CELEBRATION IV



STAR WARS
CELEBRATION IV



ISLE 600

ISLE 700

800

SIDE

ECHO BASE TOYS

ATTACK!
BATTLE OF THE
FIGURE GAMES

Hasbro





Pokemon



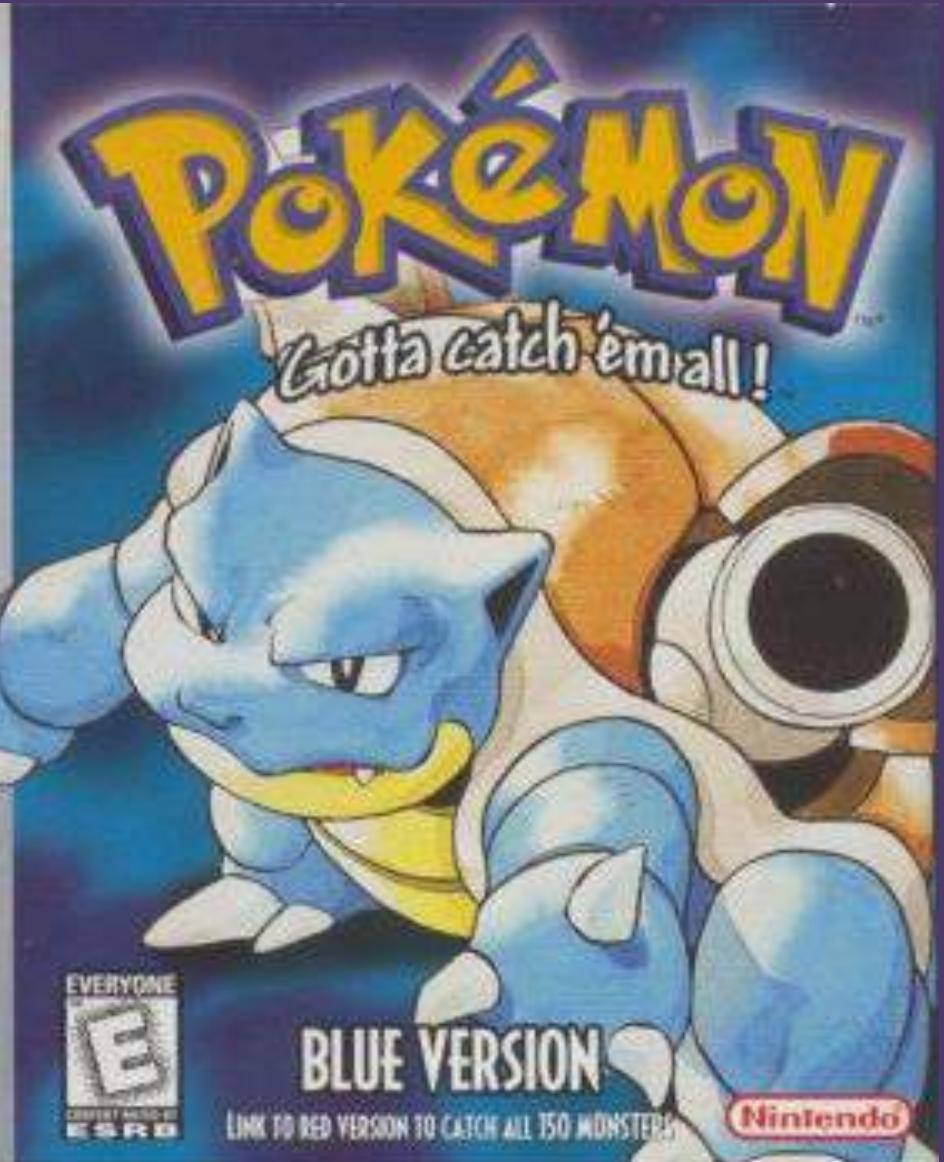
Satoshi Tajiri

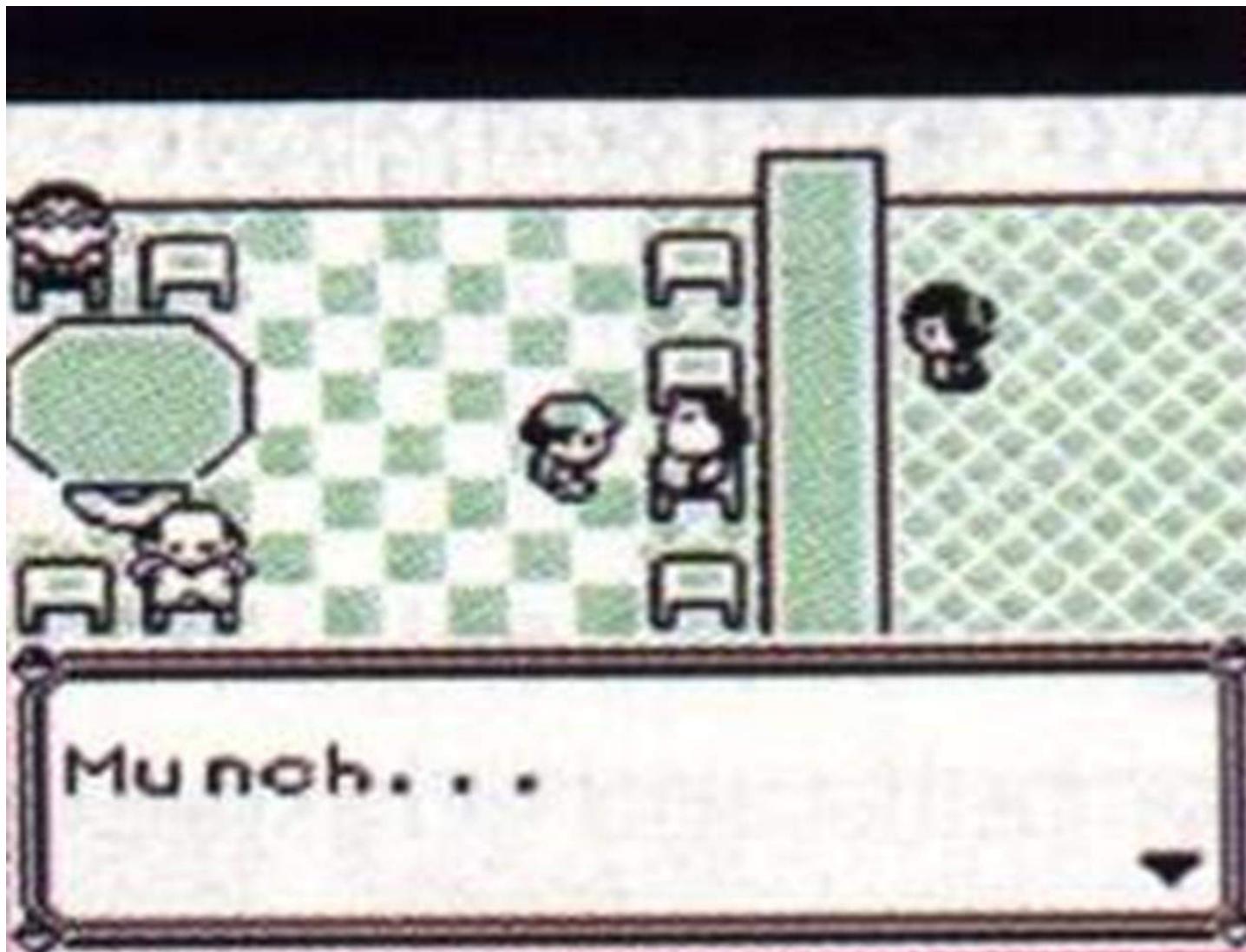
"Everything I did as a kid kind of rolled into one - that's what Pokemon is."





Transmedia
Worlds
HAVE
MANY
GATEWAYS





ARTICUNO
SLP

HP: 



HYPNO

L32

HP: 
101/101

FIGHT PkM
ITEM RUN

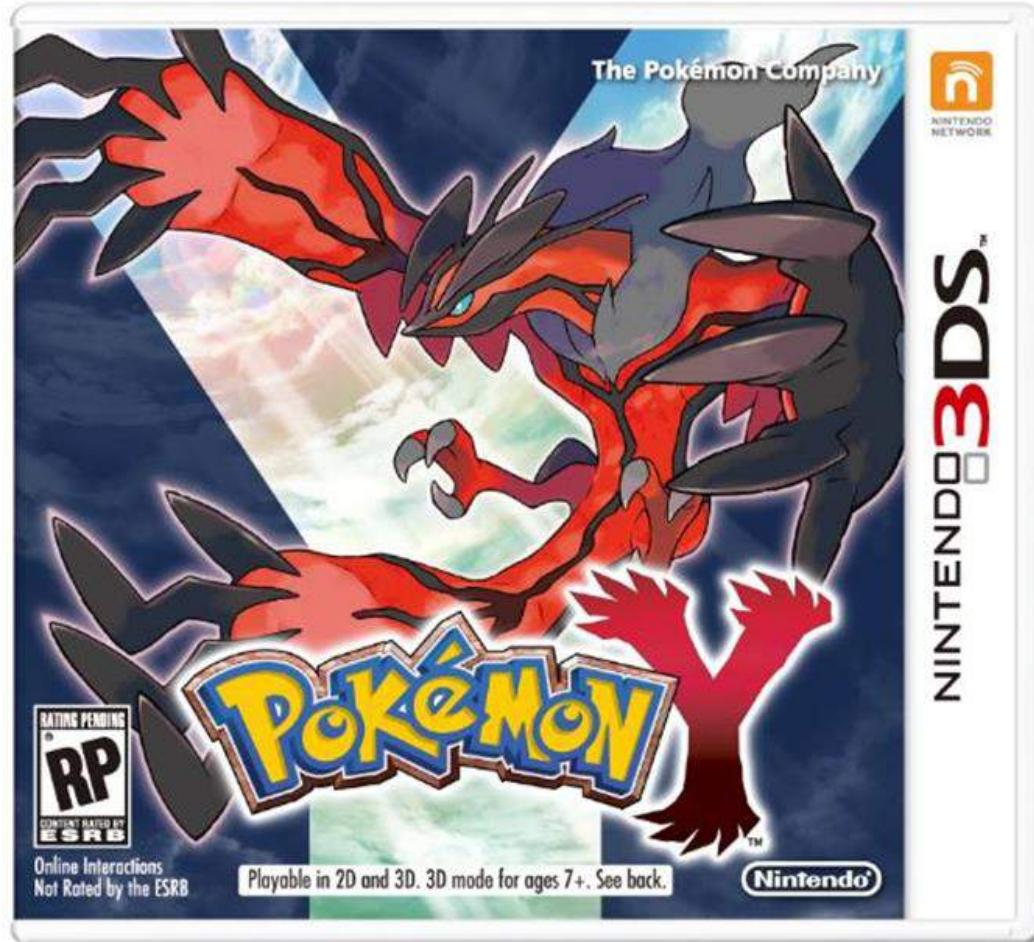


TV Series



Card game







►Sequel to the 3DS title *Pokémon Rumble Blast*, *Pokémon Rumble U* includes *Pokémon* from all five generations



Sequel to the 3DS title Pokémon Rumble Blast, Pokémon Rumble U includes Pokémon from all five generations





And Pokemon Go...





Rolston

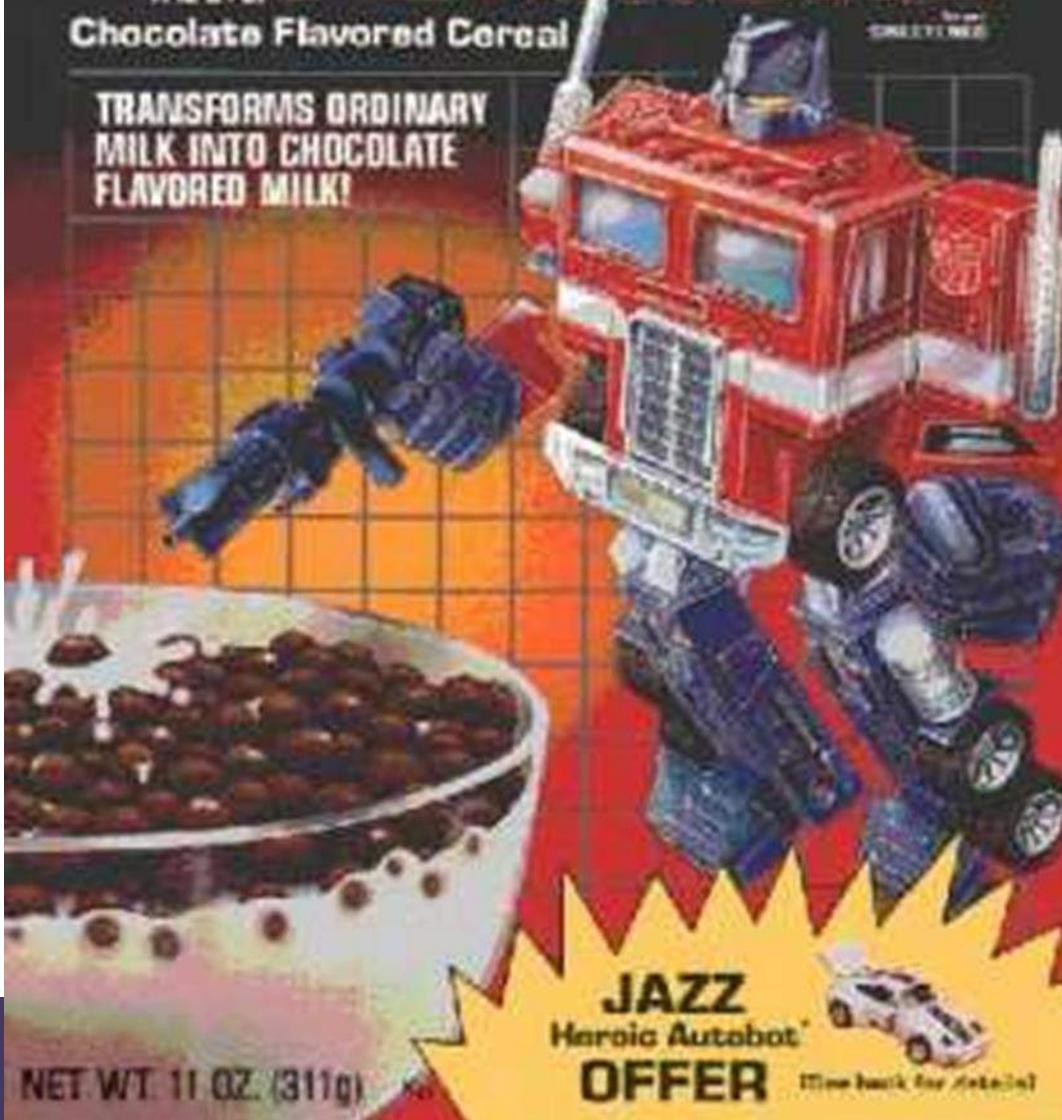
THE TRANSFORMERS

NEW

MORE TASTE
THAN MEETS
THE EYES!

Chocolate Flavored Cereal

TRANSFORMS ORDINARY
MILK INTO CHOCOLATE
FLAVORED MILK!



NET WT. 11 OZ. (311g)

JAZZ

Heroic Autobot

OFFER

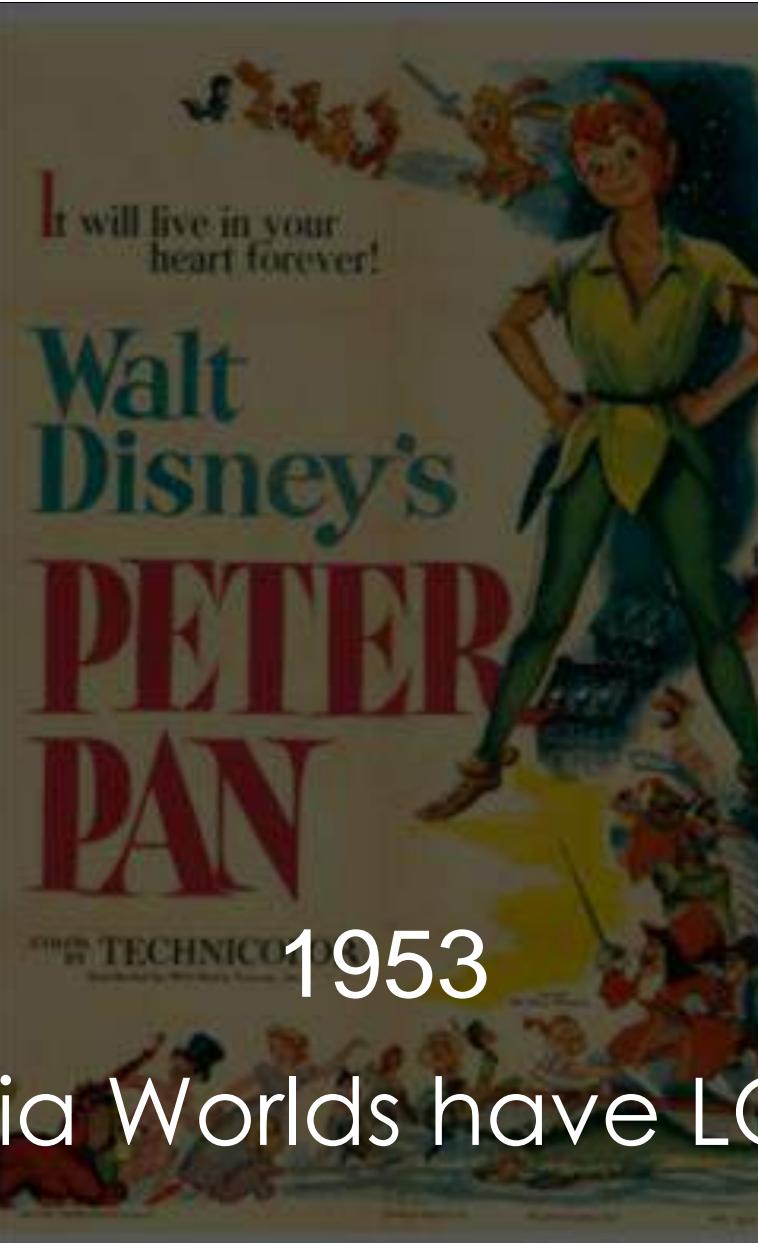
(Offer valid for details.)

~~Scott Nall~~

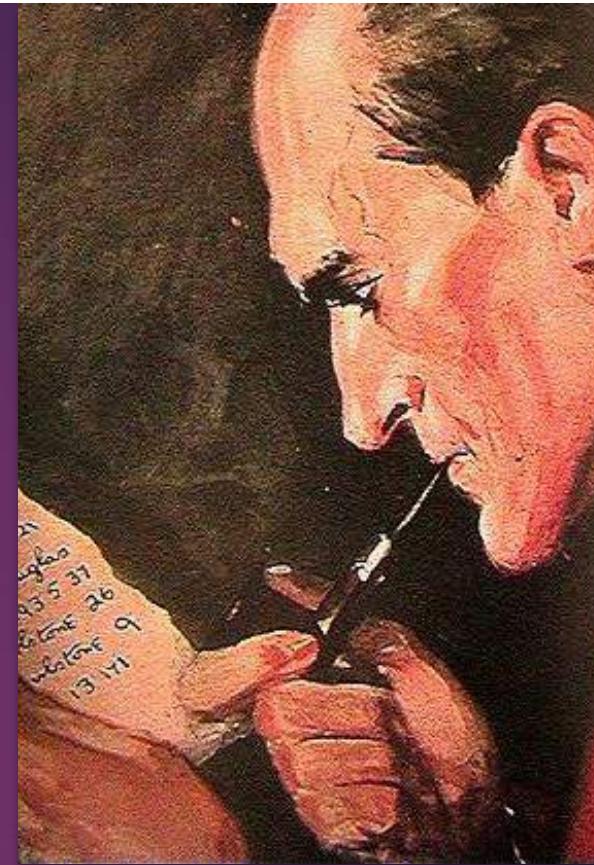
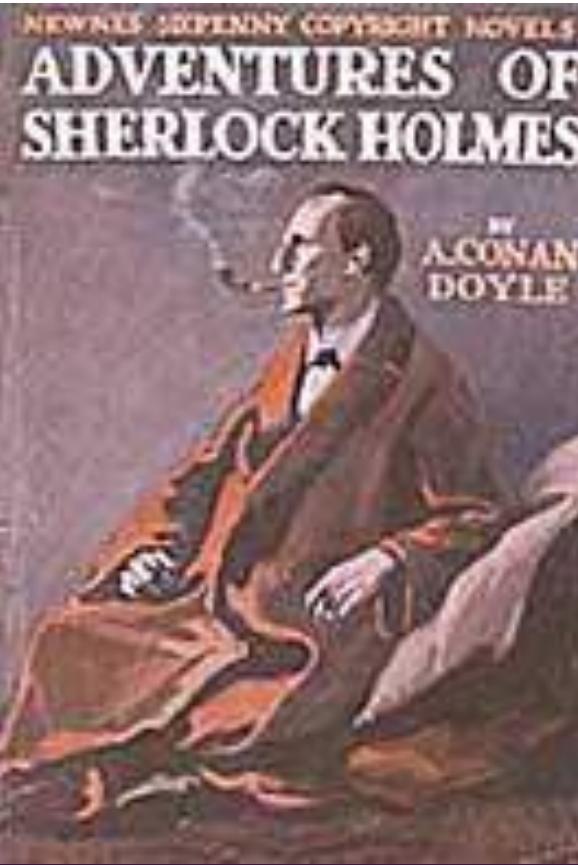
Optimus Prime



Transmedia Worlds are POWERFUL



Transmedia Worlds have LONG LIVES



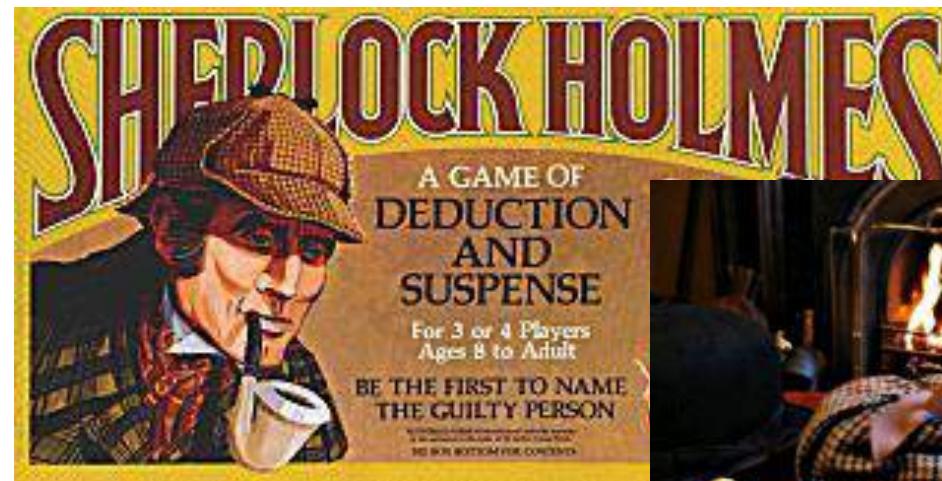
Sherlock Holmes: Before

Sherlock Holmes: After



Deerstalker Cap: Illustrator Sidney Paget

Calabash Pipe: Actor William Gillette



Transmedia Worlds EVOLVE OVER TIME



Transmedia worlds facilitate the telling of many stories

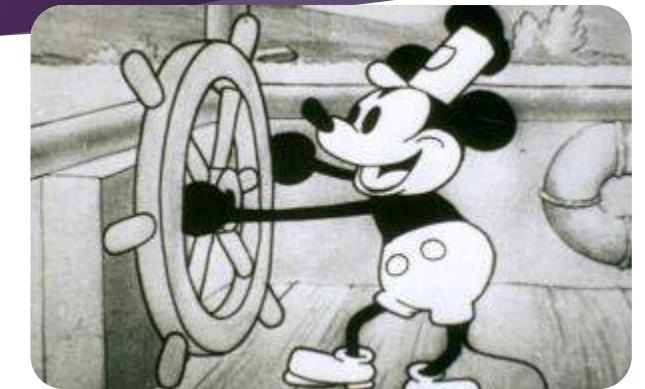
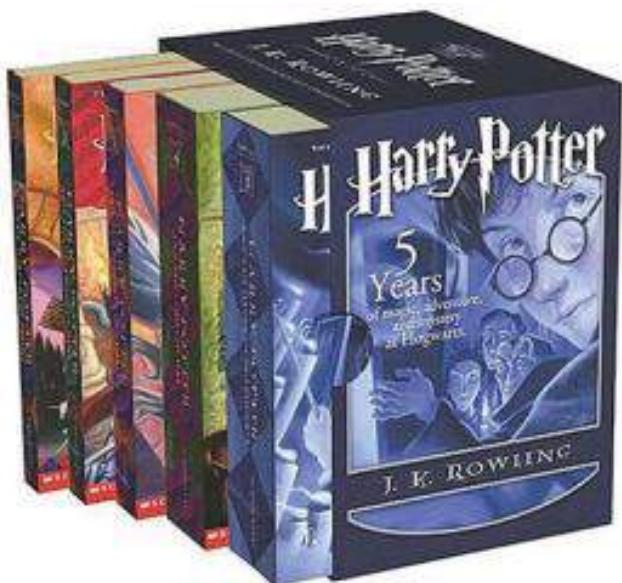
the LORD OF THE RINGS

Transmedia Worlds...

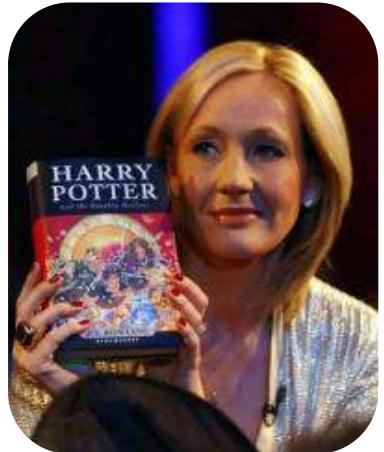
- ...exist apart and are infinite
- ...have many gateways
- ...are powerful
- ...have long lives
- ...evolve over time

But what makes a good one?

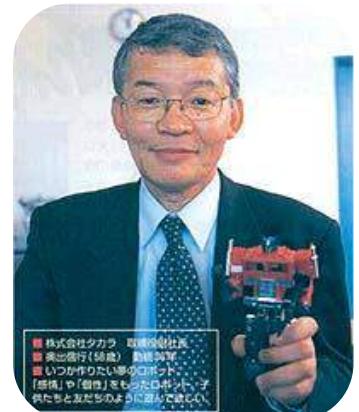
Transmedia worlds tend to be rooted in a single medium...



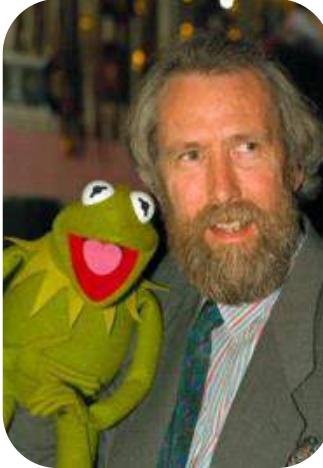
...with a single creator



J. K. Rowling



Nobuyuki Okude



Jim Henson

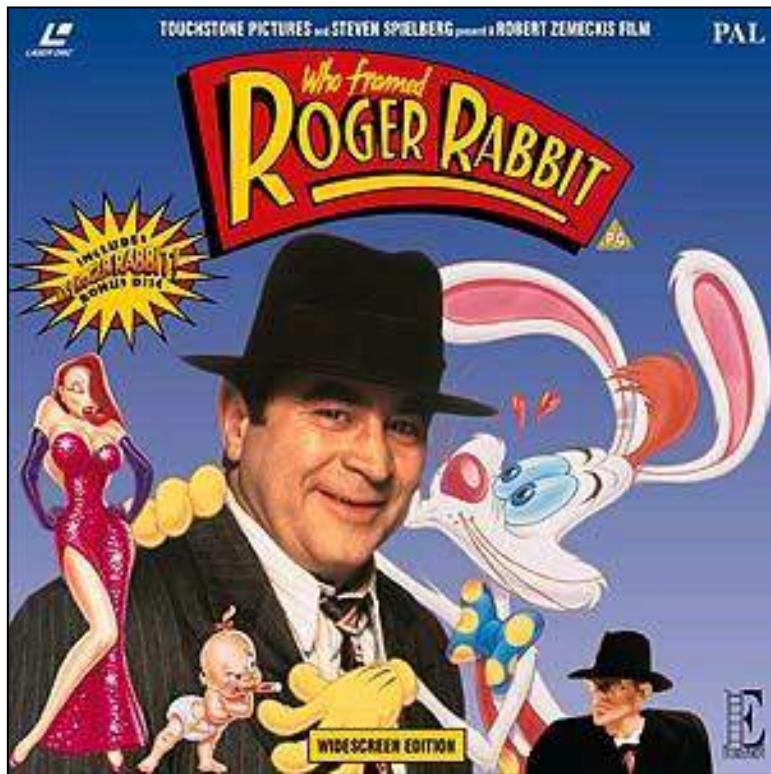


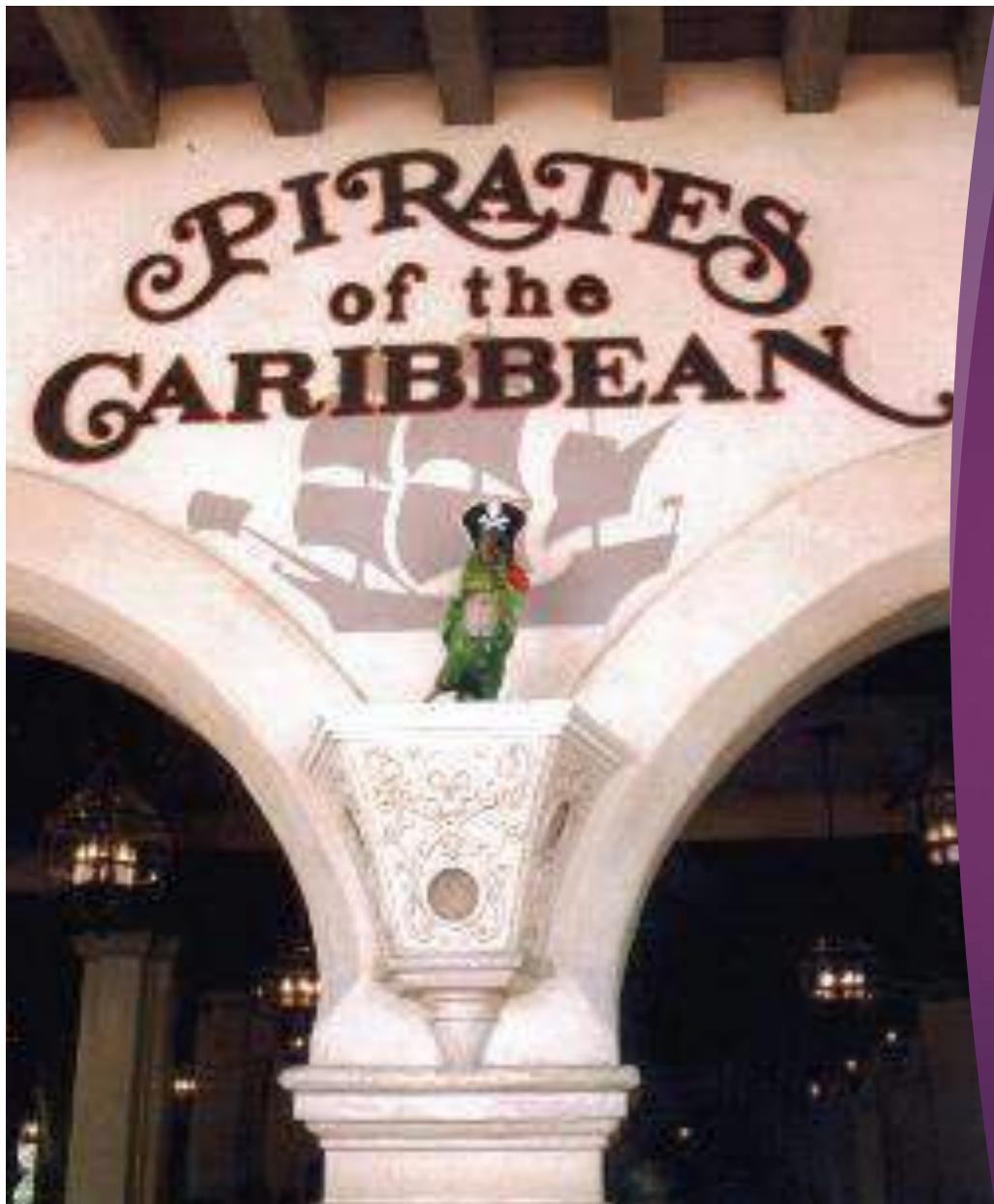
Walt Disney



Satoshi Tajiri

Transmedia worlds are intuitive





Transmedia
Worlds fulfill
wishes

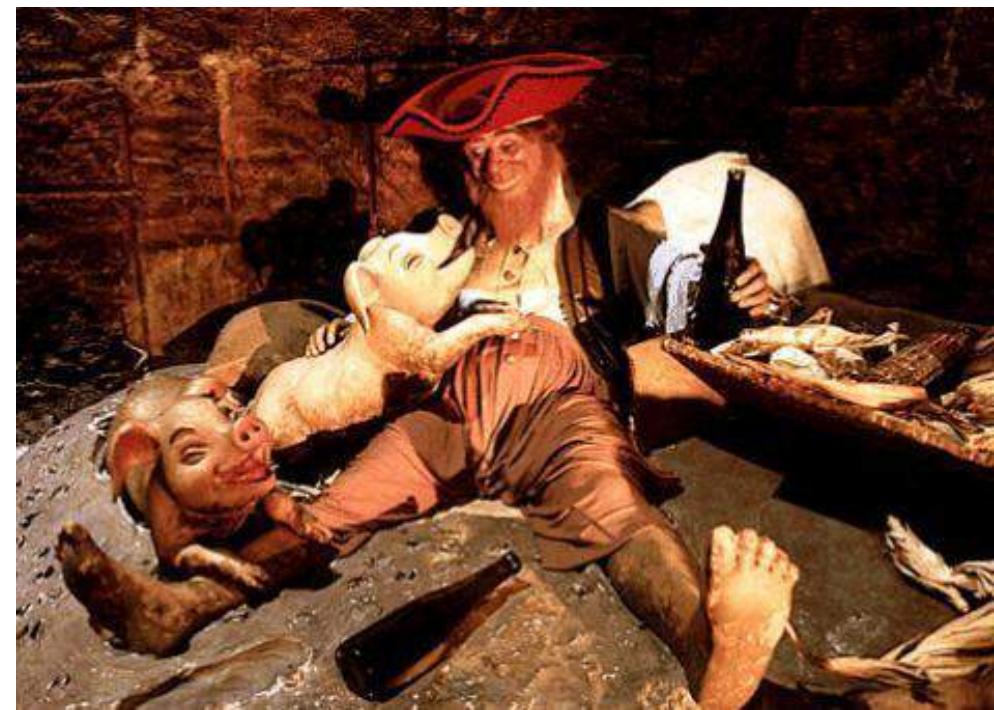








Illustration by Nick Daniel



The world of your game is a thing that exists apart. Your game is a doorway to this magic place that exists only in the imagination of your players. To ensure your world has power and integrity, ask yourself these questions:

- How is my world better than the real world?
- Can there be multiple gateways to my world? How do they differ? How do they support each other?
- Is my world centered on a single story, or could many stories happen here?

Lens of the world

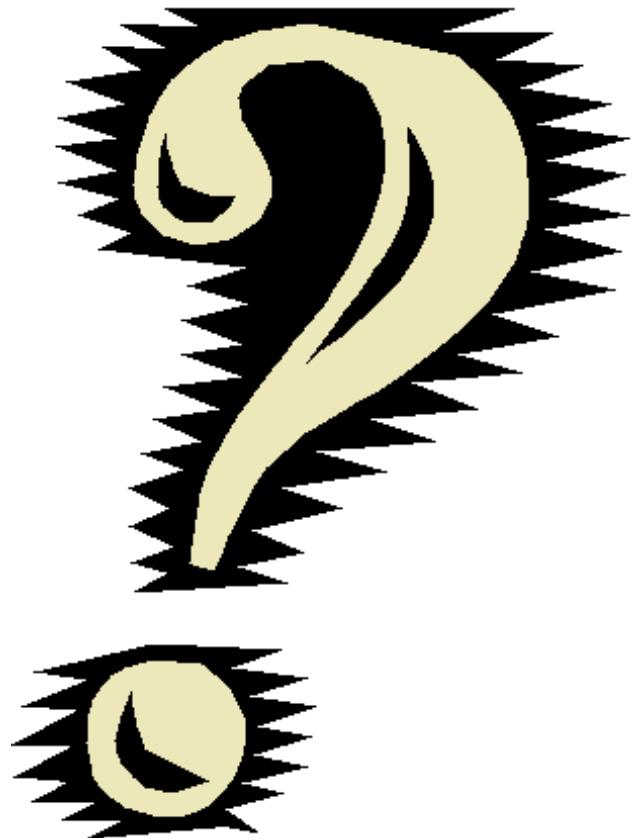
Readings

- Project Management And Working Remotely By Ryan Sumo

<https://www.gamedeveloper.com/production/project-management-in-the-time-of-covid-19>

- How to Fix Miscommunication Issues in Your Team By Ryan Sumo

<https://www.squeakywheel.ph/blog/how-to-fix-miscommunication-issues-in-your-team>



Questions??

FOR MORE INFORMATION CONTACT:

SERGI.BERMUDEZ@UMA.PT

“

Game Design: Lecture 12 - Pitch & Business

”



UNIVERSIDADE da MADEIRA

MDMi Master of
Interactive
Media Design

Sergi Bermúdez i Badia
<sergi.bermudez@uma.pt>

The Art of the Pitch

- ▶ Who are you pitching to?
 - ▶ Colleagues
 - ▶ Managers
 - ▶ VCs
 - ▶ Publishers
 - ▶ Reporters
- ▶ A pitch is a negotiation of power



MAZUR

Illustration by Nathan Mazur

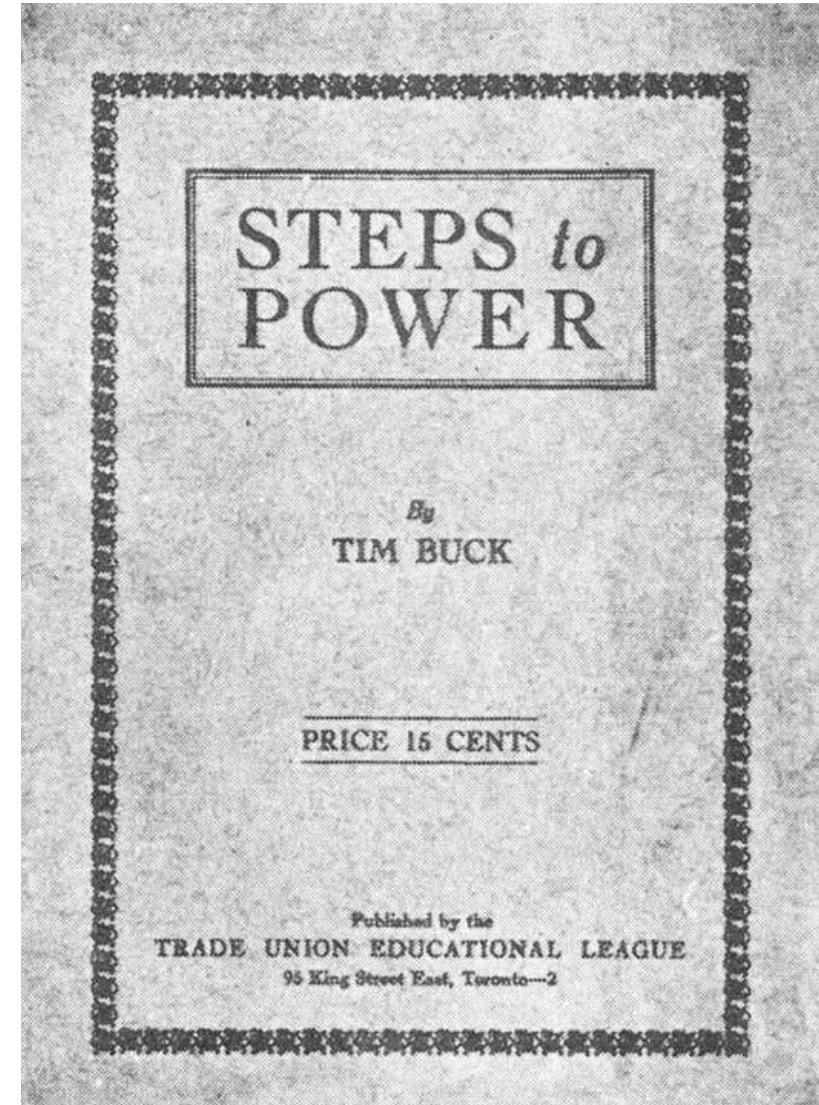
To ensure your pitch is as good as it can be,
ask yourself these questions:

- Why are you pitching this game to this client?
- What will you consider “a successful pitch”?
- What’s in it for the people you are pitching to?
- What do the people you are pitching to need to know about your game?

Lens of the Pitch

- ▶ What is Power?
- ▶ Power is the ability to get what you want.

- ▶ Note the 2 parts:
- ▶ “the ability to get”
- ▶ and
- ▶ “what you want”



The three layers of desire

I want a Nintendo Switch Title that will sell through 3 million units worldwide.



Really, I just want people to think I'm creative.

Actually, I just want our company to break into the Nintendo Switch market.

Cool Ideas vs. Good Ideas

- ▶ Ideas: \$0.1 each
- ▶ Cool Ideas: \$5 each, easily
- ▶ Good Ideas: \$100 each, on a good day
- ▶ A good idea:
 - ▶ In the right place
 - ▶ At the right time
 - ▶ Sold convincingly
 - ▶ Is worth \$1 Million. Sometimes more.



(Jesse's) Pitch
Tips ...





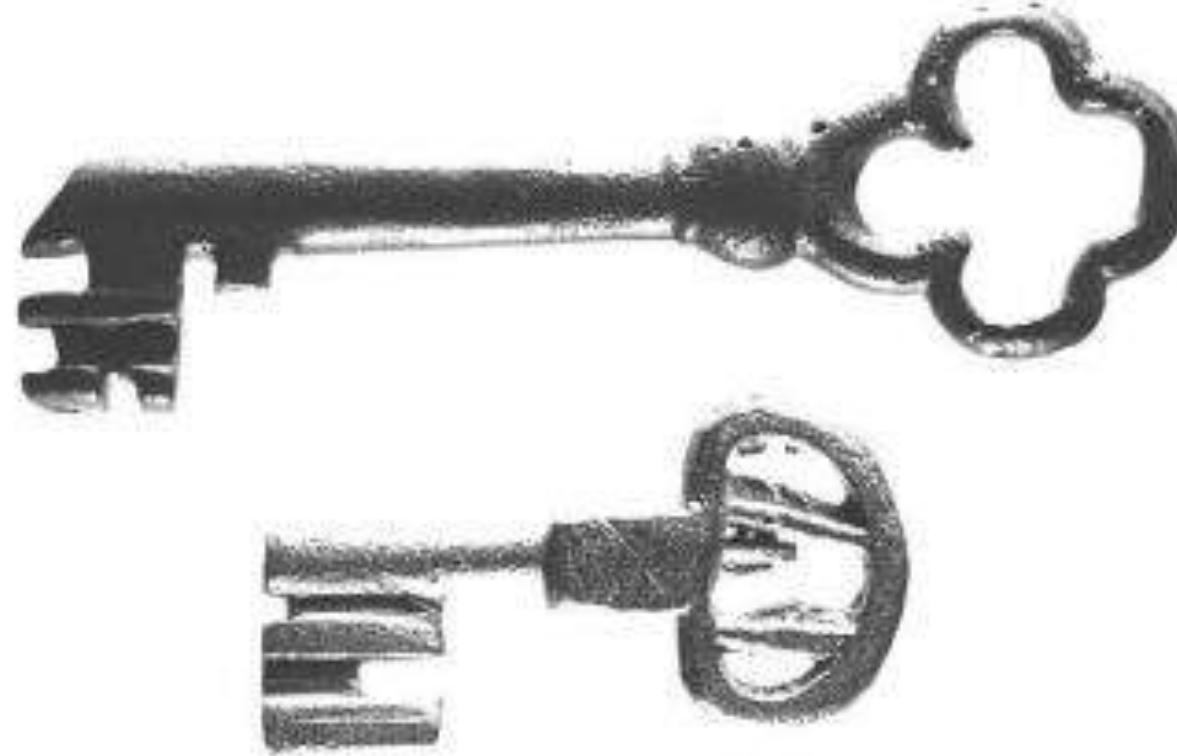
Medieval-style key from the 15th century

















- 1) Get in the door
 - ▶(Preferably, the back door)



2) Show you are serious

- ▶ A demo is best!
 - ▶ Marshmallows and Soap bubbles
 - ▶ The Spiral Staircase of Dungeon Seige

2) Show you are serious

- ▶ A demo is best!
 - ▶ Marshmallows and Soap bubbles
 - ▶ The Spiral Staircase of Dungeon Seige



2) Show you are serious

- ▶ A demo is best!
 - ▶ Marshmallows and Soap bubbles
 - ▶ The Spiral Staircase of Dungeon Seige
- ▶ Be organized!
 - ▶ Have what you need
 - ▶ Organized = calm = in control

Exude Confidence

- ▶ Be sure of yourself
- ▶ Know your stuff
- ▶ Drop Names
- ▶ Amaze
- ▶ “Absolutely.”
- ▶ You aren’t just selling the idea, you are selling yourself
- ▶ Answer questions as a team
- ▶ A word about handshakes
- ▶ Visualize a time when you were supremely confident



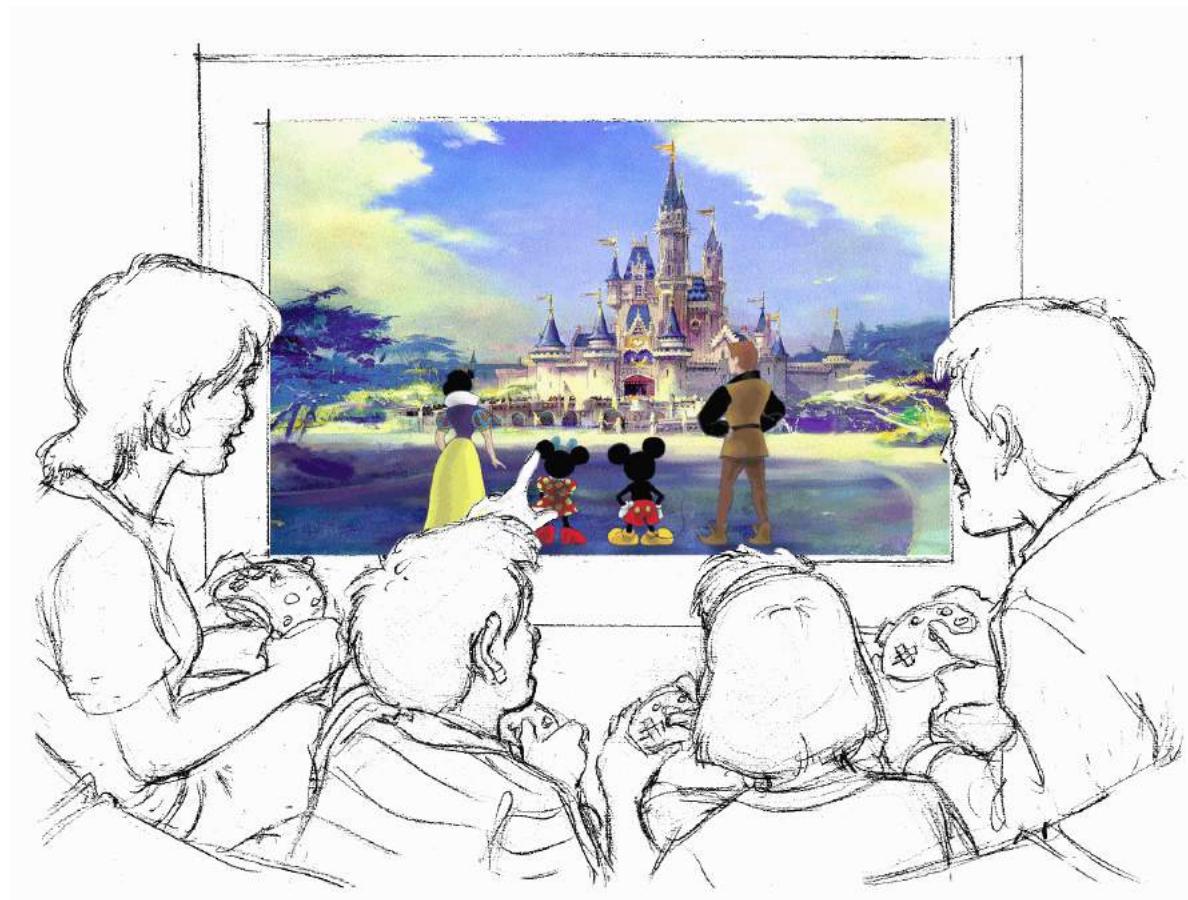
4) Assume their point of view



- ▶ The most important skill is?
- ▶ Persuasion is about the other person!
- ▶ Know your audience (Einstein pitch)
- ▶ Give your idea “handles”
 - ▶ “It’s a bowling RPG”
 - ▶ “It’s Pokemon for grownups”
 - ▶ “It’s Nintendogs, with a whole zoo”

5) Design the pitch

- ▶ Design it for your audience
 - ▶ Start with a summary
 - ▶ Introduce your team
 - ▶ Focus on what is unique
 - ▶ Explain why this will succeed against competition
- ▶ Check your interest curve
- ▶ Find the emotional hook
- ▶ Use Images



HELLO	▶ Hi!
GOODBYE	▶ Hello!
HAPPY	▶ Hi there!
SAD	▶ Hey!
FRIENDLY	▶ Howdy!
SORRY	▶ Hi everybody!
STINKY	▶ Welcome to Toontown!
PLACES	▶ What's up?
TOONTASKS	▶ How are you doing?
BATTLE	▶ Hello?
GAG SHOP	▶
Yes	
No	
Ok	



6) Know all the details

- ▶ Know the schedule
- ▶ Know the risks
- ▶ Have ready answers
- ▶ Know the \$Numbers\$...

Business of Games

Why do you care?

- ▶ Aren't there people for this?

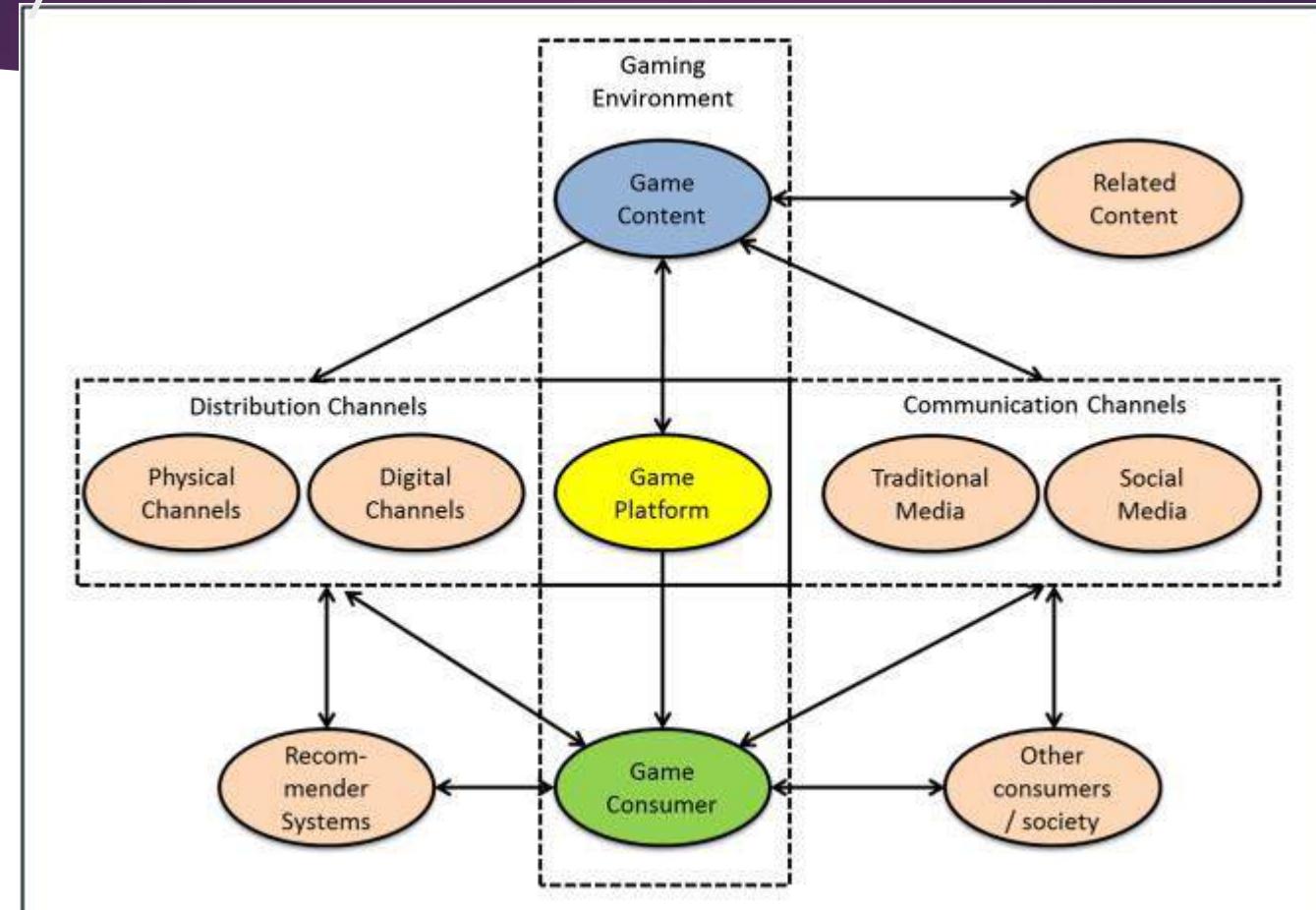
There are, but you can't always count on them.

- ▶ How can you learn the games business?

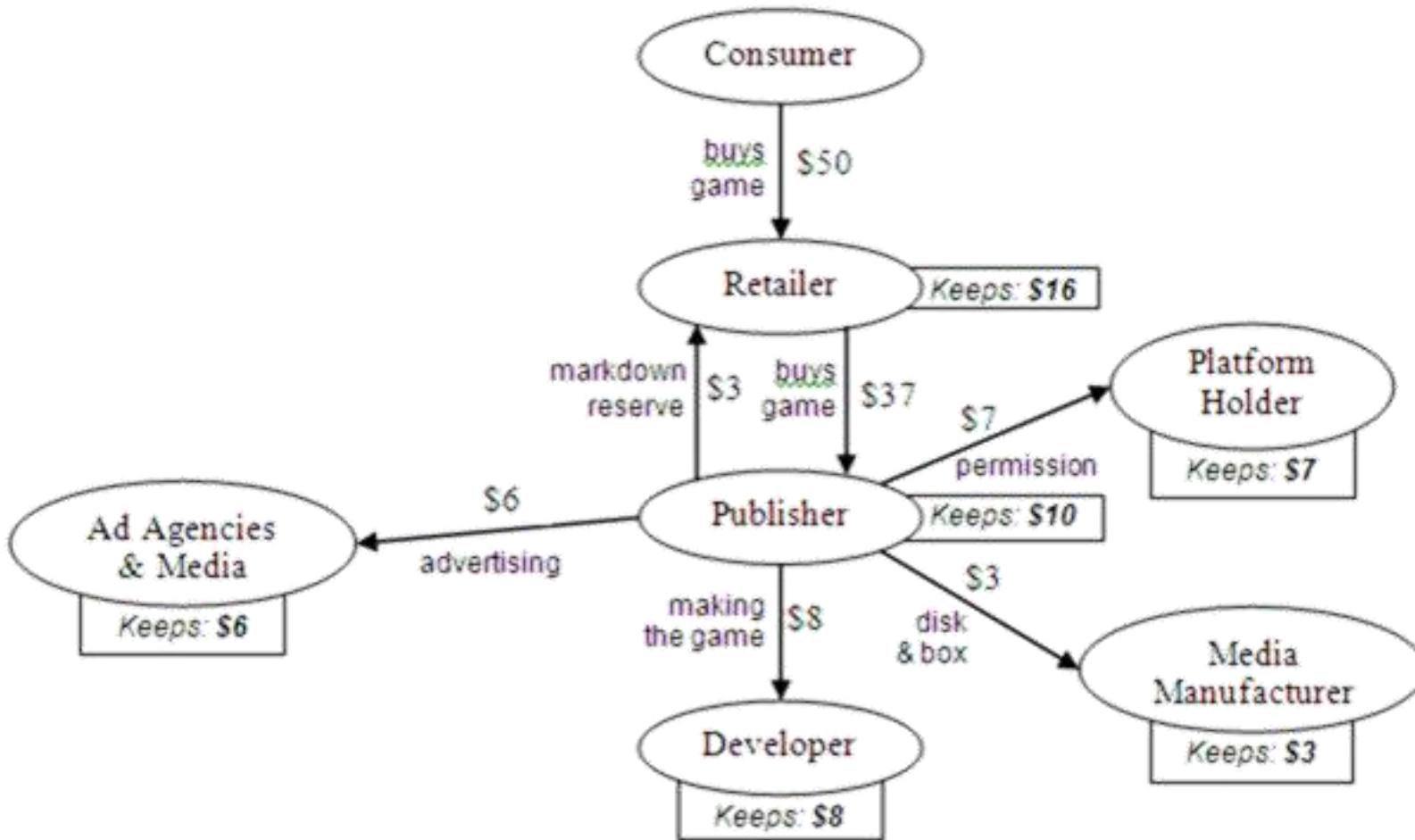
Just ask one simple question...

- ▶ Where does the money go?

Value Creation in the Video Game Industry



Marchand, A., & Hennig-Thurau, T. (2013). Value creation in the video game industry: Industry economics, consumer benefits, and research opportunities. *Journal of Interactive Marketing*, 27(3), 141-157.



Business, business

► If they could sell only can openers, they would.

► What's a SKU?

Stock Keeping Unit

► What is Breakeven?

► What is NPV?

Net Present Value: It compares the present value of money today to the present value of money in future, taking inflation and returns into account

► What is ARPU?

Average revenue per user

► What is ARPPU?

Average revenue per PAYING user

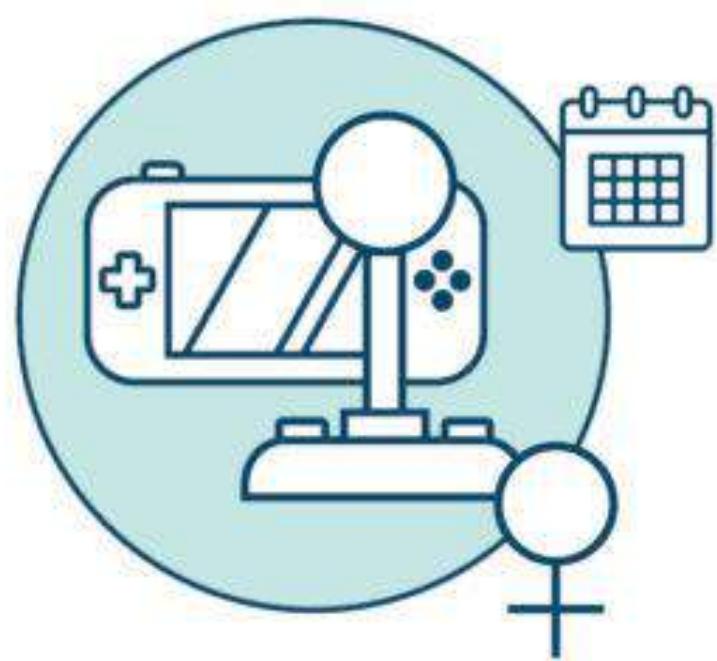
Essential Facts About the Computer and Video Game Industry

64% of US households own a device that they use to play video games.

There are an average of **2 GAMERS** in each game-playing US household.



Essential Facts About the Computer and Video Game Industry

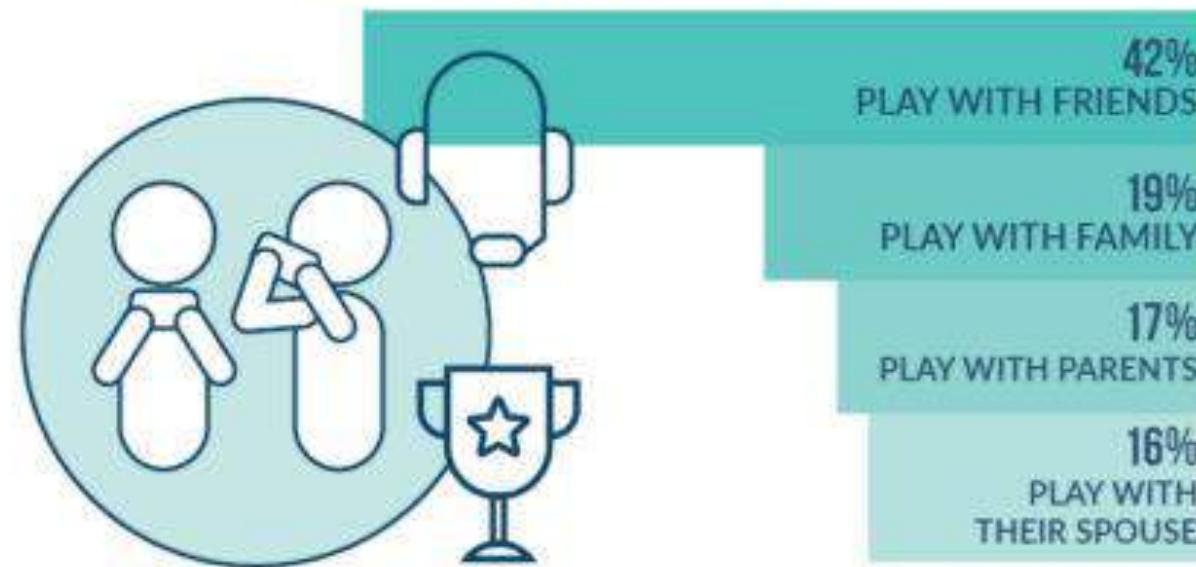


The average female video game player is **36**, and the average male video game player is **32**.

45% of US gamers are women.

Essential Facts About the Computer and Video Game Industry

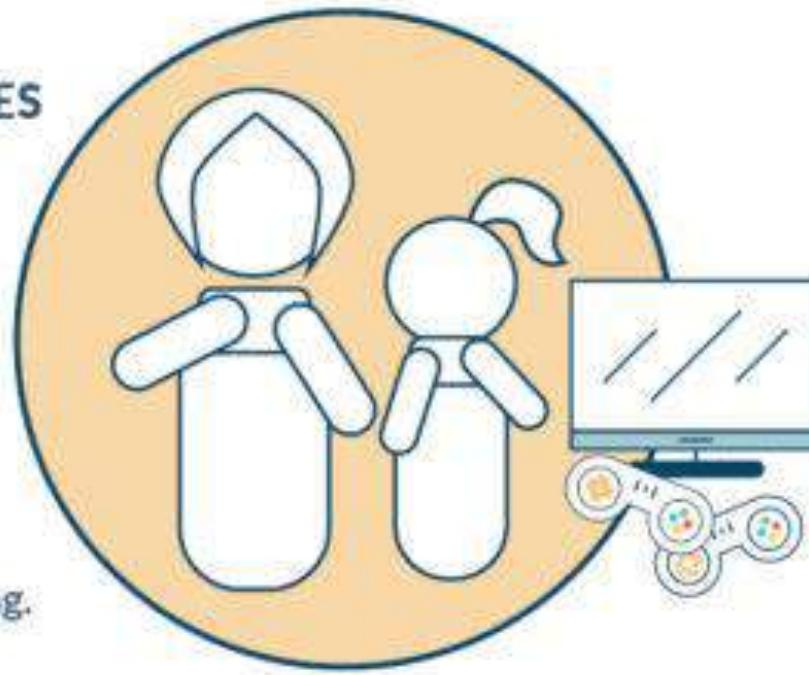
WHO ARE THE MOST FREQUENT GAMERS PLAYING WITH?



Essential Facts About the Computer and Video Game Industry

TOP REPORTED REASONS WHY PARENTS PLAY VIDEO GAMES WITH THEIR CHILDREN

1. It's fun for all of us.
2. My child asks me to.
3. It's a good opportunity to socialize with my child.
4. I enjoy playing video games as much as my child.
5. It helps me monitor what they are playing.

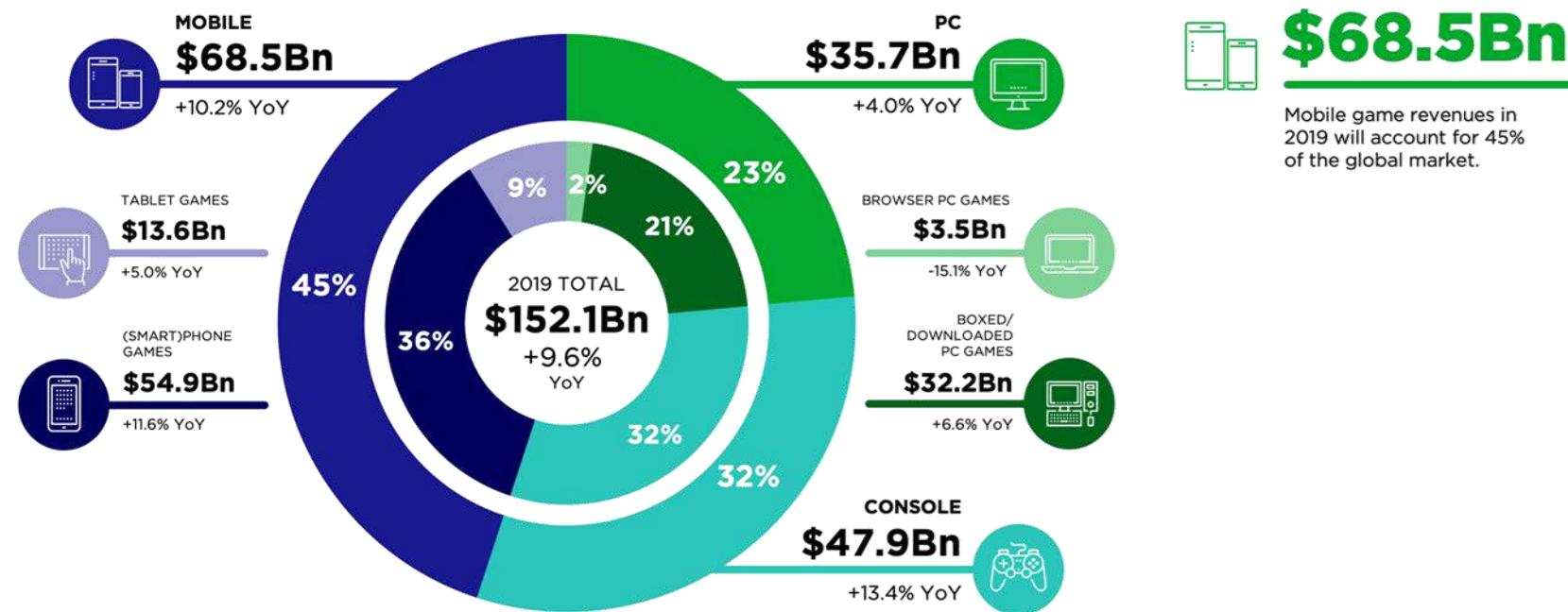


Essential Facts About the Computer and Video Game Industry



2019 GLOBAL GAMES MARKET

PER DEVICE & SEGMENT WITH YEAR-ON-YEAR GROWTH RATES



Essential Facts About the Computer and Video Game Industry

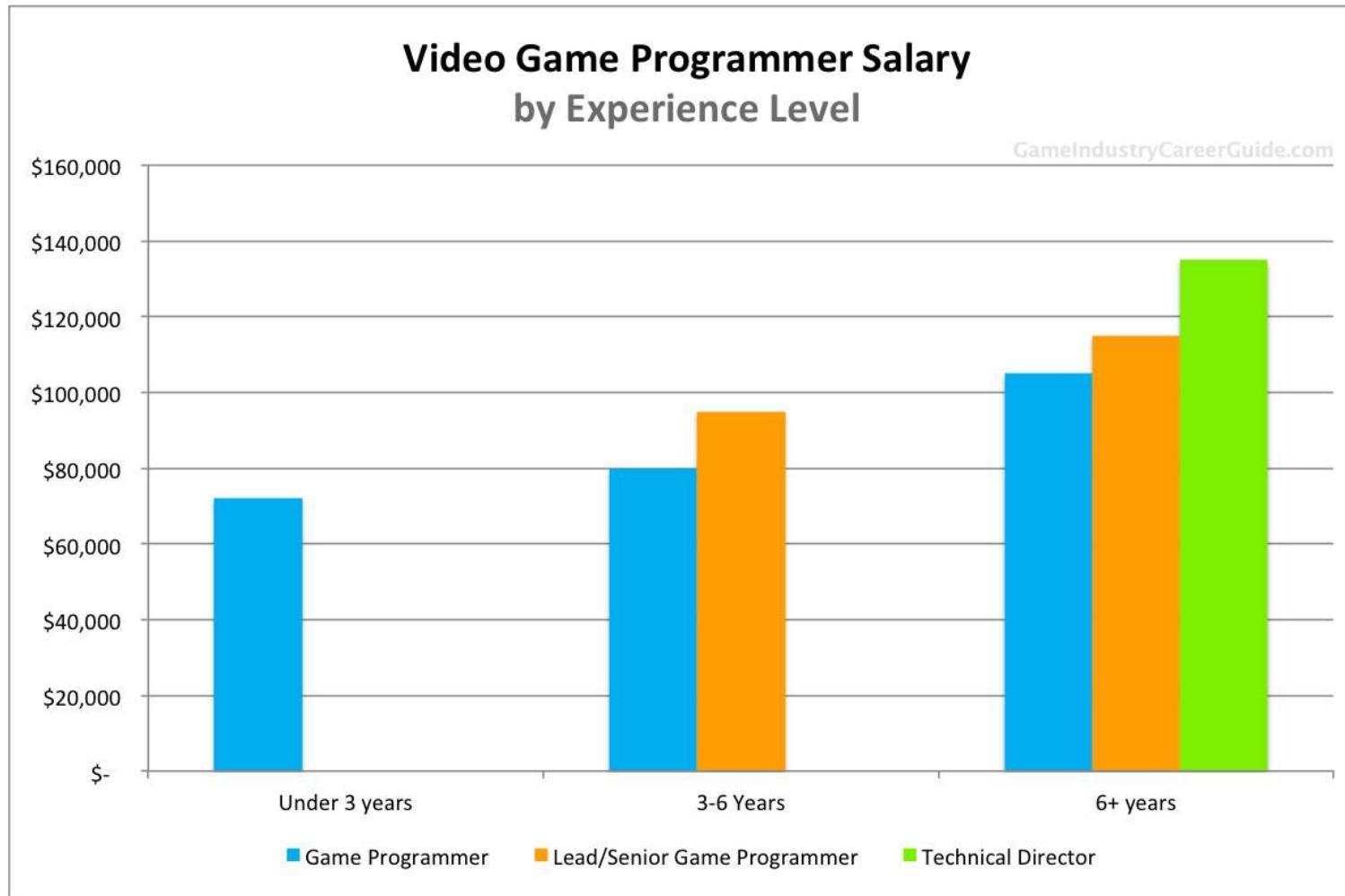




Illustration by Nick Daniel



Profits keep the game industry alive. Ask these questions to help your game become profitable:

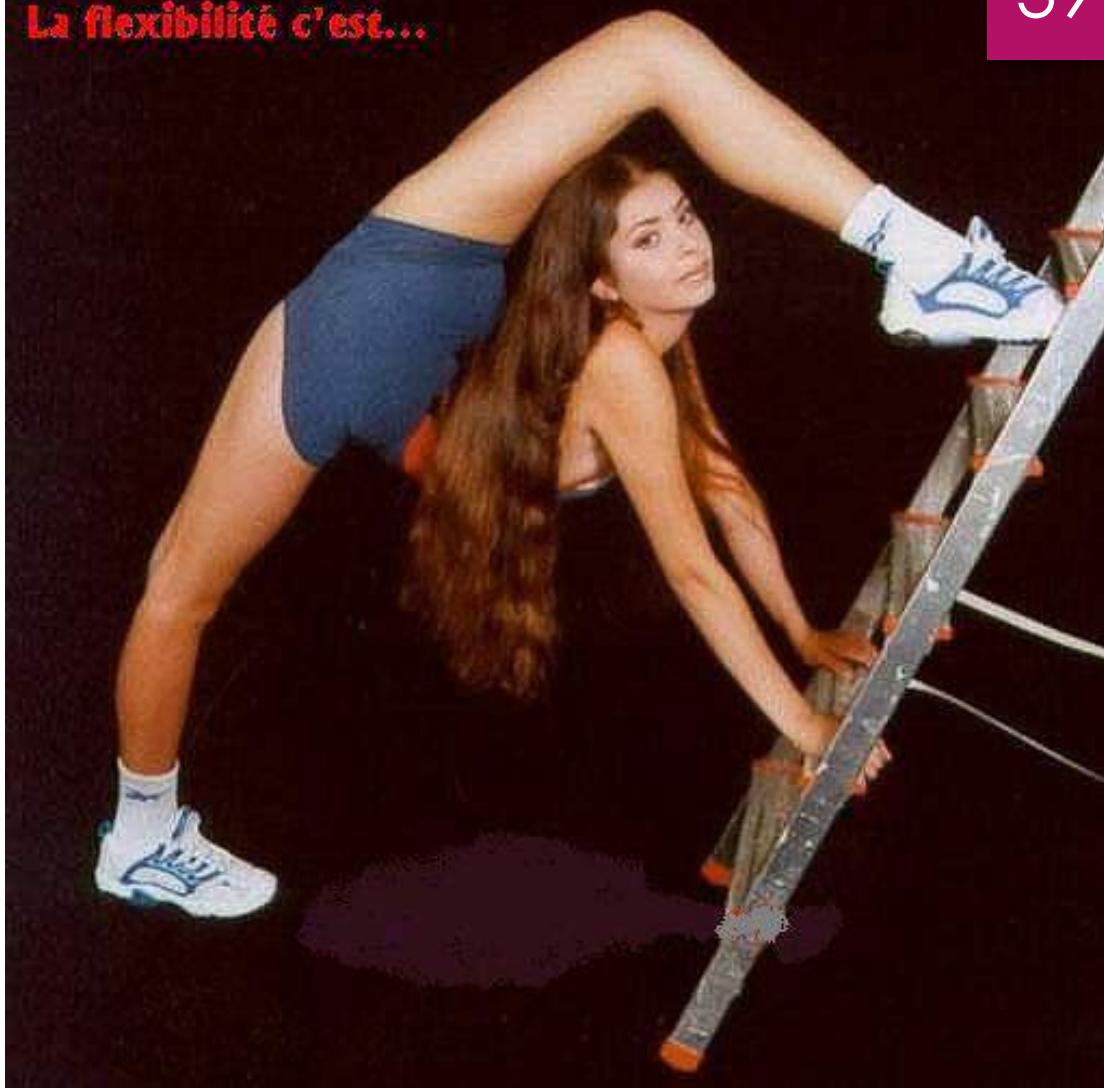
- Where does the money go in my game's business model? Why?
- How much will it cost to produce, market, and distribute this game? Why?
- How many units will this game sell? Why do I think that?
- How many units need to sell before my game breaks even?

Lens of Profit

7) Be Flexible

- ▶ Stay Objective
- ▶ Keep your mind on the goal, not the means
- ▶ Expect to be lied
- ▶ Lie (judiciously)

La flexibilité c'est...



8) Practice your performance

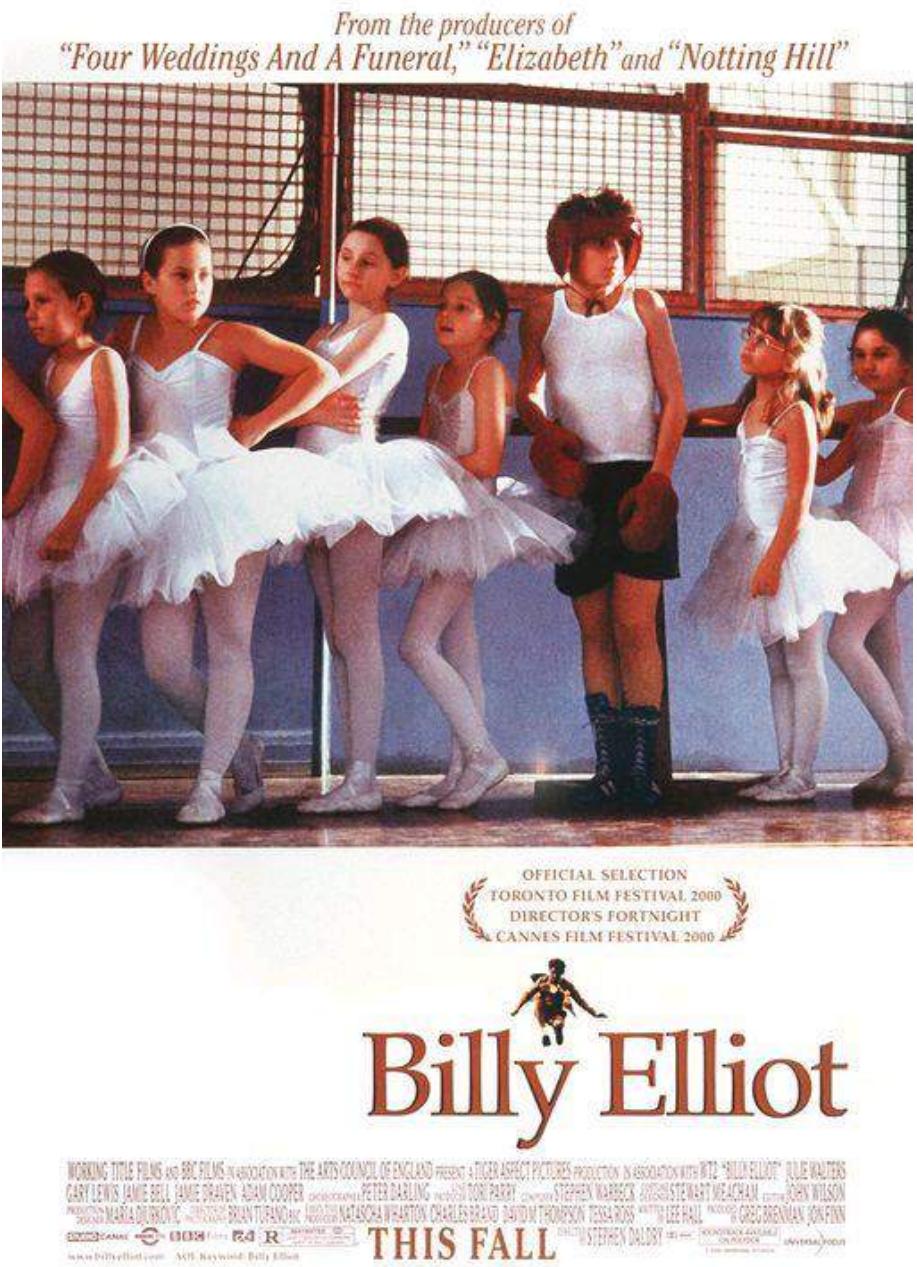
- ▶ Rehearse
- ▶ Make it seem effortless
 - ▶ (as if you could do much more)
- ▶ Anticipate questions
 - ▶ (but make answers seem spontaneous)
- ▶ Never talk while you play!
- ▶ Control demos carefully



9) Get them to own it

- ▶ Get an inside advocate
- ▶ Integrate their contributions

10) Show Your Passion



11) Following Up

- ▶ Find an excuse to contact them
- ▶ Don't expect a response
- ▶ If there is an administrative assistant, get to know them if you can

Readings!

- ▶ **Clarifying The Producer's Role.**
By Anthony Straub

[PRINT](#)

Clarifying The Producer's Role

By Anthony Straub [11.08.16]

INTRODUCTION.

What does your job consist of? When a producer in the games industry is asked this question, they usually start their answer by smiling, thinking for a few seconds and then either use the "project management" comparison, or begin describing an obscure metaphor such as "if making game is like sailing a boat, then my job is to make sure the boat does not sink". Although there is nothing wrong with using comparisons or metaphors, I find that failing to clearly describe a job creates a confusion about its role within the industry.

Producers of all sorts are not the only ones who can't explain what they do all day. If you ask a game designer or a coder what the producer of their team does, chances are you'll get several different answers.

Here are three answers I heard when asking various developers about their producer's role: "She manages the tasks", "He's the one updating the schedule and budget", "She works with the creative director and decides what goes in the game or not".





Questions??

FOR MORE INFORMATION CONTACT:

SERGI.BERMUDEZ@UMA.PT

GAME DESIGN:

LECTURE 3 – HISTORY OF GAMES

First exercise!!

3

- **Toolbox of games:** lets read the exercise
- Due by Tuesday 22nd March!!
- Be honest, the more you work this one out the more tools you will have for designing!
- ***Design experience only comes with practice!!***



Some (of the most) Ancient Games

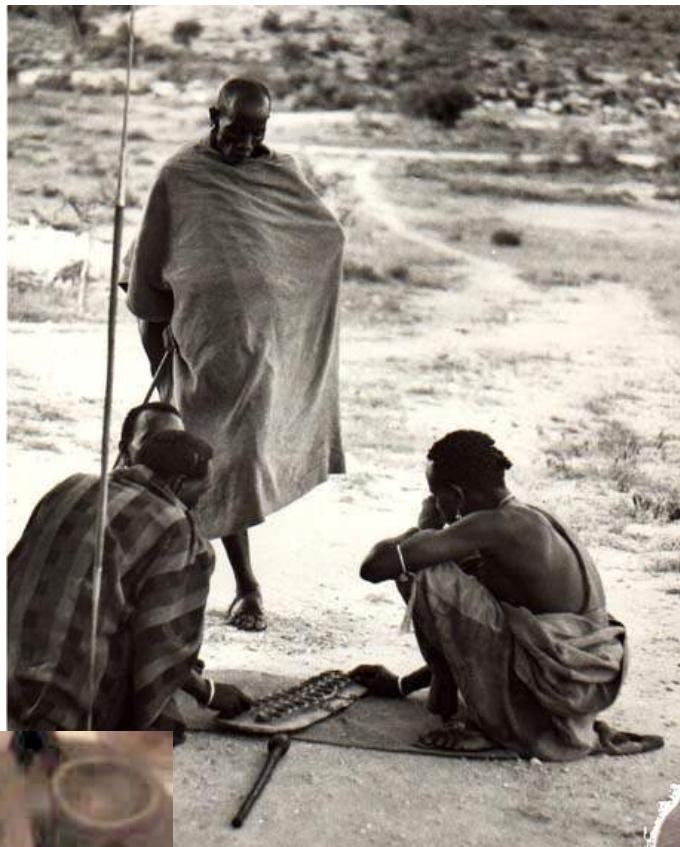
Board, dice, card and table games

(more in www.historicgames.com/gamestimeline.html)

Mancala, ??00 BC

5

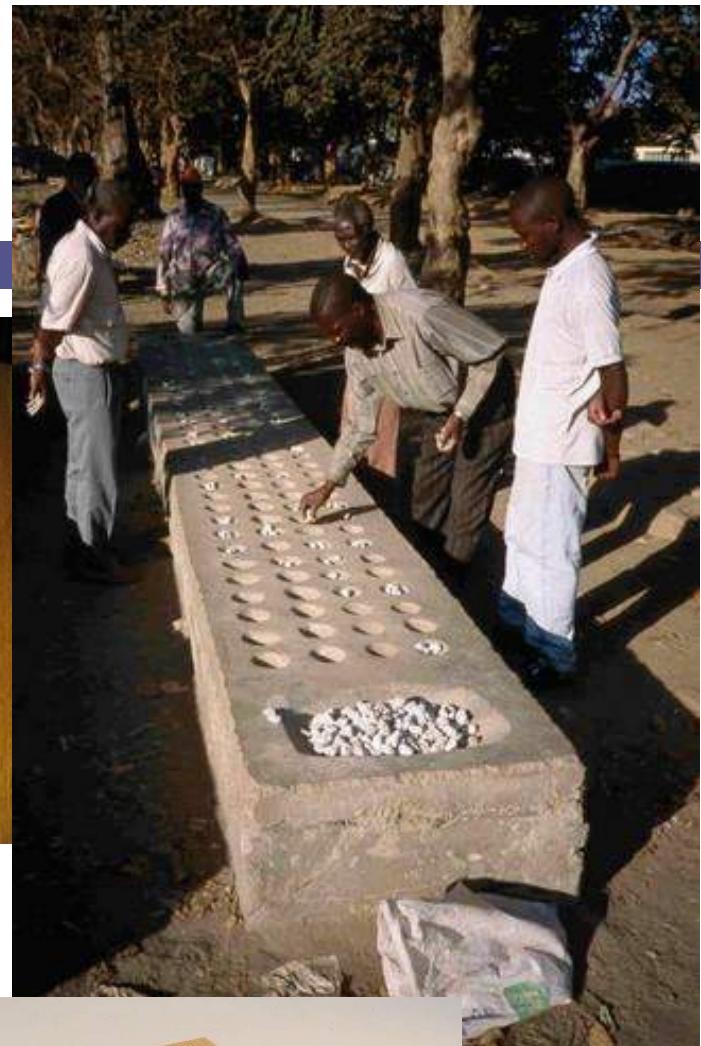
- One of the oldest games
- African / Asian origin
- Strategy game equivalent to Chess (west) or Go (Asia)



* Plymouth City Museum and Art Gallery

Mancala, ??00 BC

6



Dice, 3000 BC

7

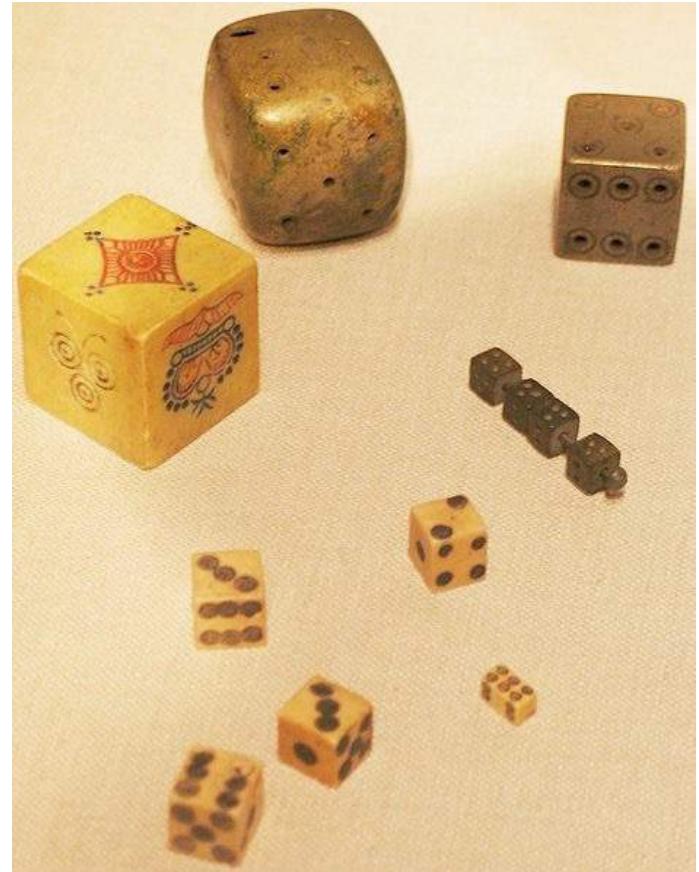
- Several resting position
- Controlled chances!



Knucklebones die, made of Steatite



A collection of historical dice from Asia



* From wikipedia

Some dice quotations ...

8

The best throw of the dice is to throw them away.

Advice from an old English proverb

I cannot believe God plays dice with the universe.

Albert Einstein

Not only does God play dice with the universe, He's using loaded dice.

John Ford

Not only does God play dice, He throws them where we cannot see them.

Stephen Hawking

Senet, 3000 BC

9

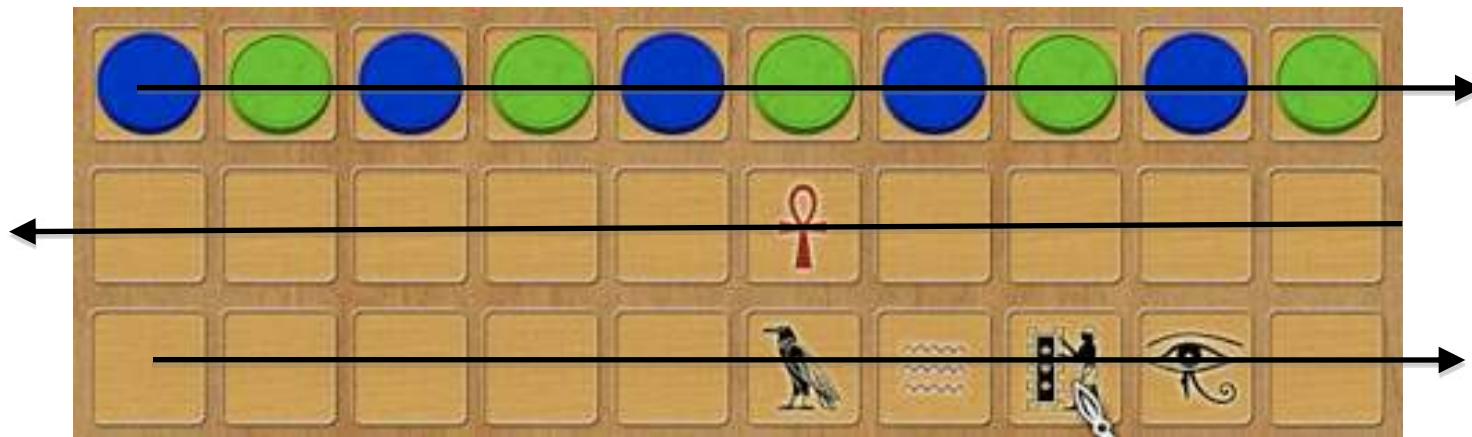
- May be the **oldest board game** in the world. Found in First Dynasty burials of Egypt
- Race game with sticks



* From wikipedia

Senet, 3000 BC

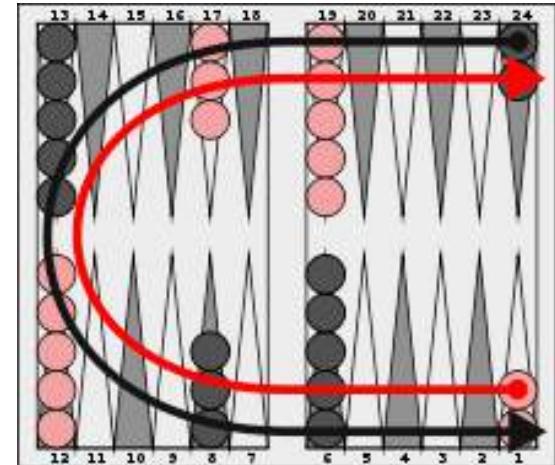
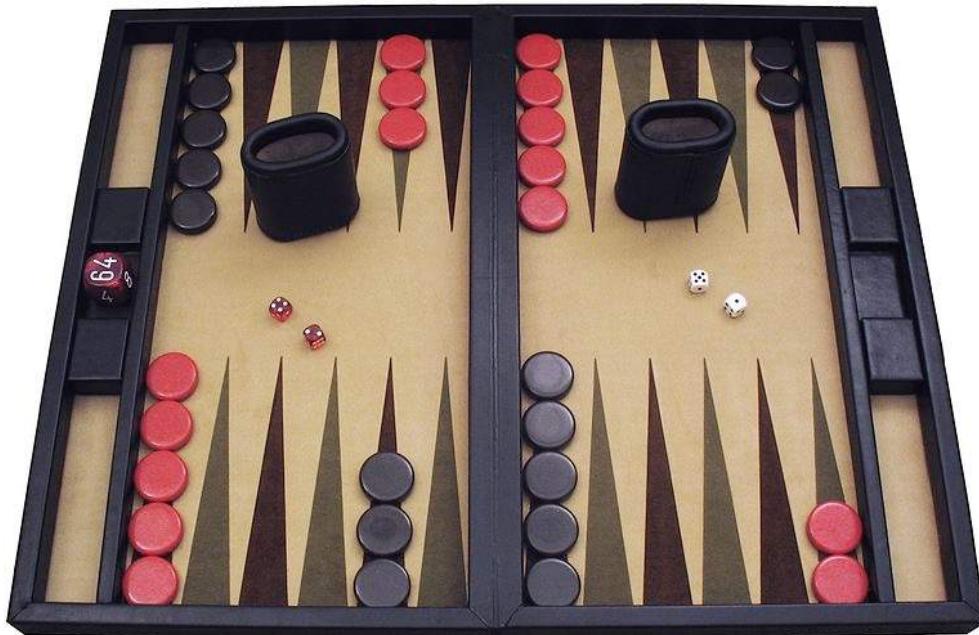
10



Backgammon, 2500 BC

11

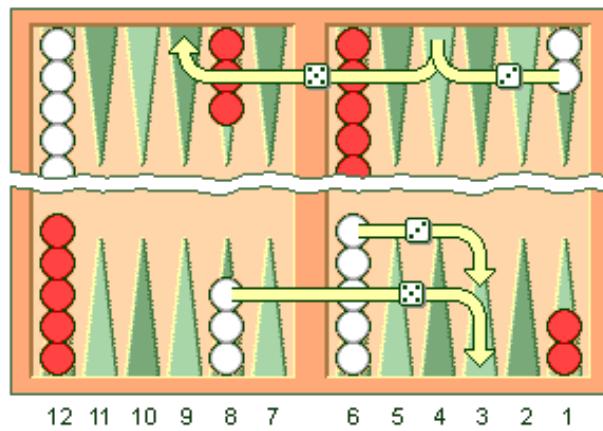
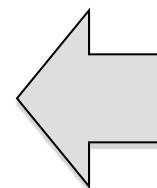
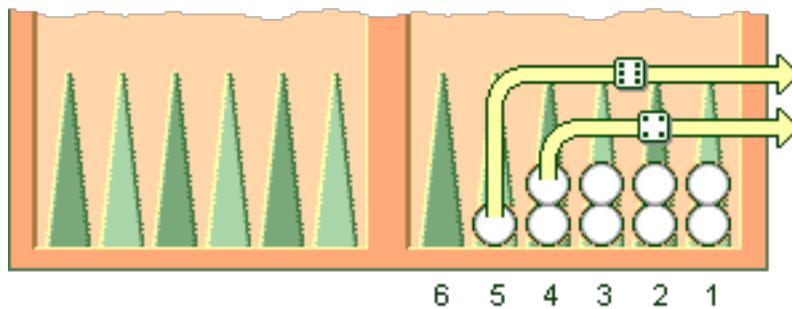
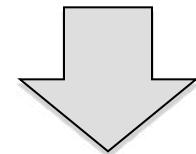
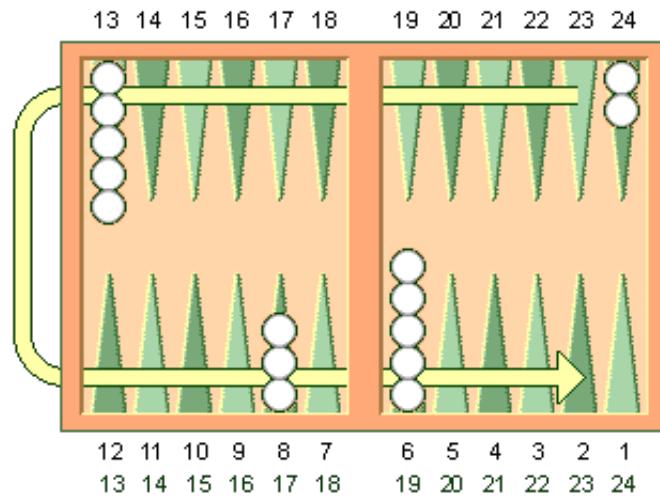
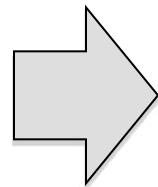
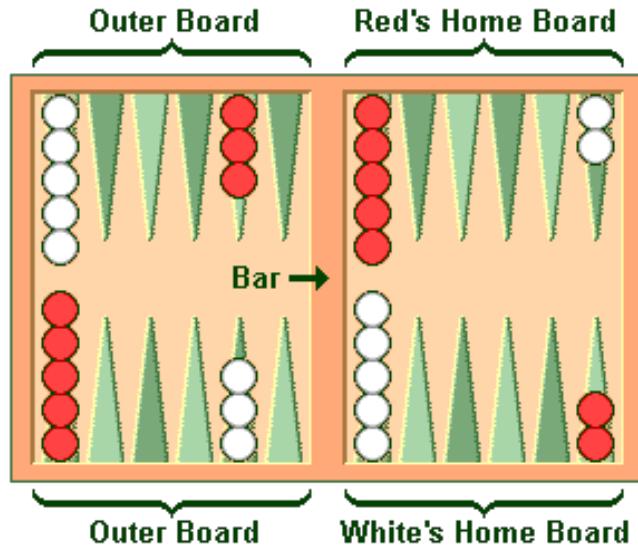
- Combines strategy and dice (chance)
- For two players



* From wikipedia

Backgammon, 2500 BC

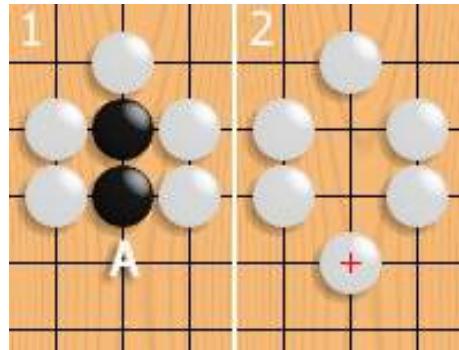
12



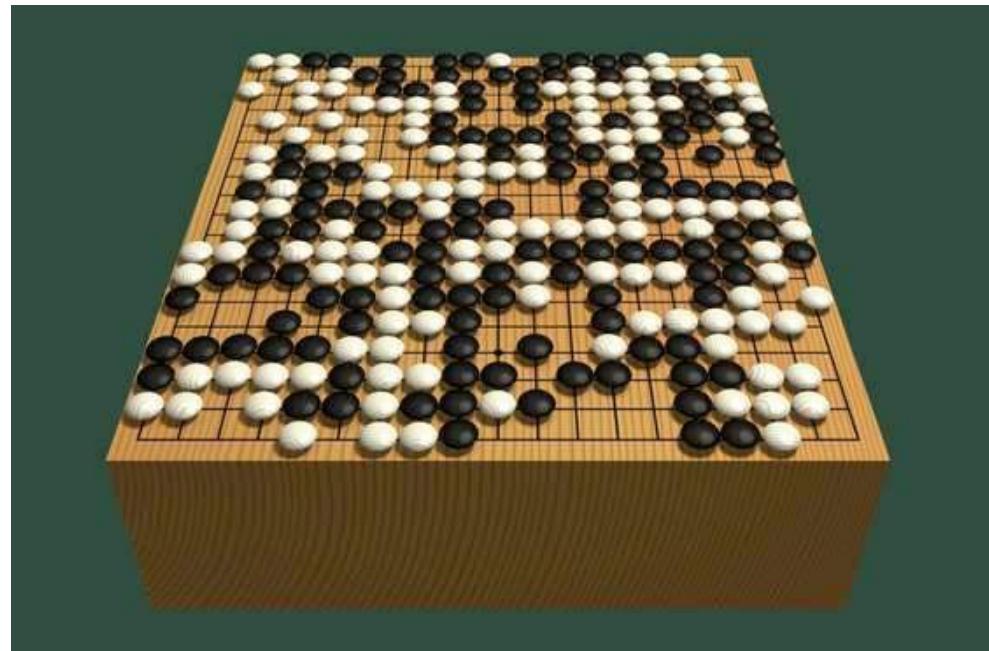
Go, 2300 BC

13

- Origin in China, made popular in Japan (*igo*)
- Strategy game
- Simple rules
- Plays on intersections
- Territory = space + stones
- 27 Mio players



Capture move



Chess, 500 AD

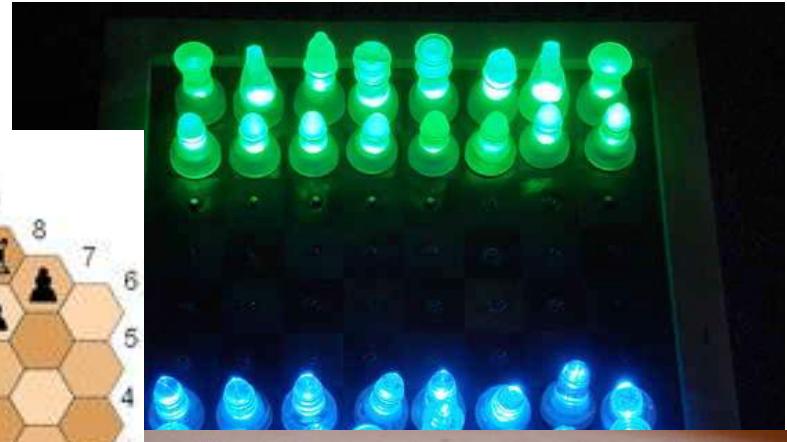
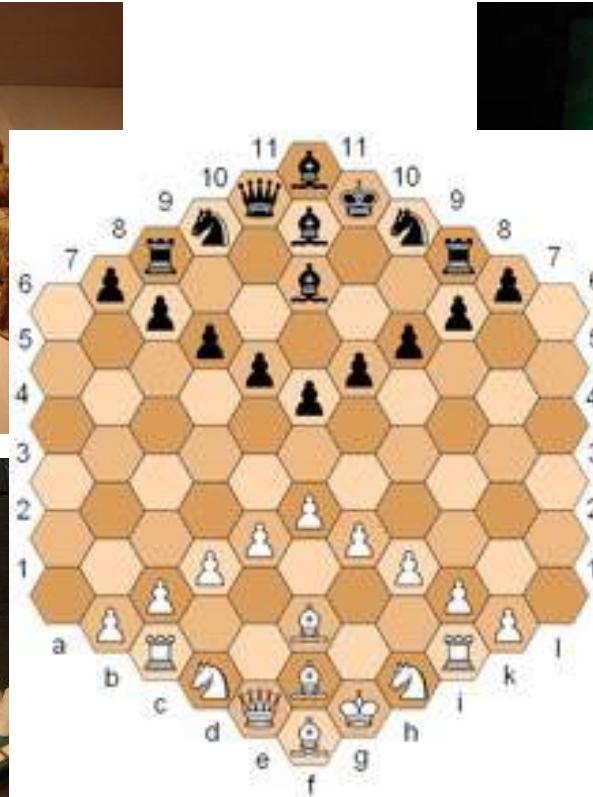
14

- Originated in northwest India
- Was known as *caturāṅga* (Sanskrit: four divisions [of the military] – infantry, cavalry, elephants, and chariotry)
- How many rules does it have?



Chess, 500 AD

15



Poker, mid-18th century?

16

- Unclear origin
(persian **As Nas** or
french **poque**)



The Rise of the Electronic Entertainment

What is it?

18



'Whiffle Board' (Pinball), 1930

19

- Coin operated!
- Started a company that would book orders averaging 27,000 boards a year!



* Arthur Paulin,
Whiffle board
inventor

Pinball, 1930

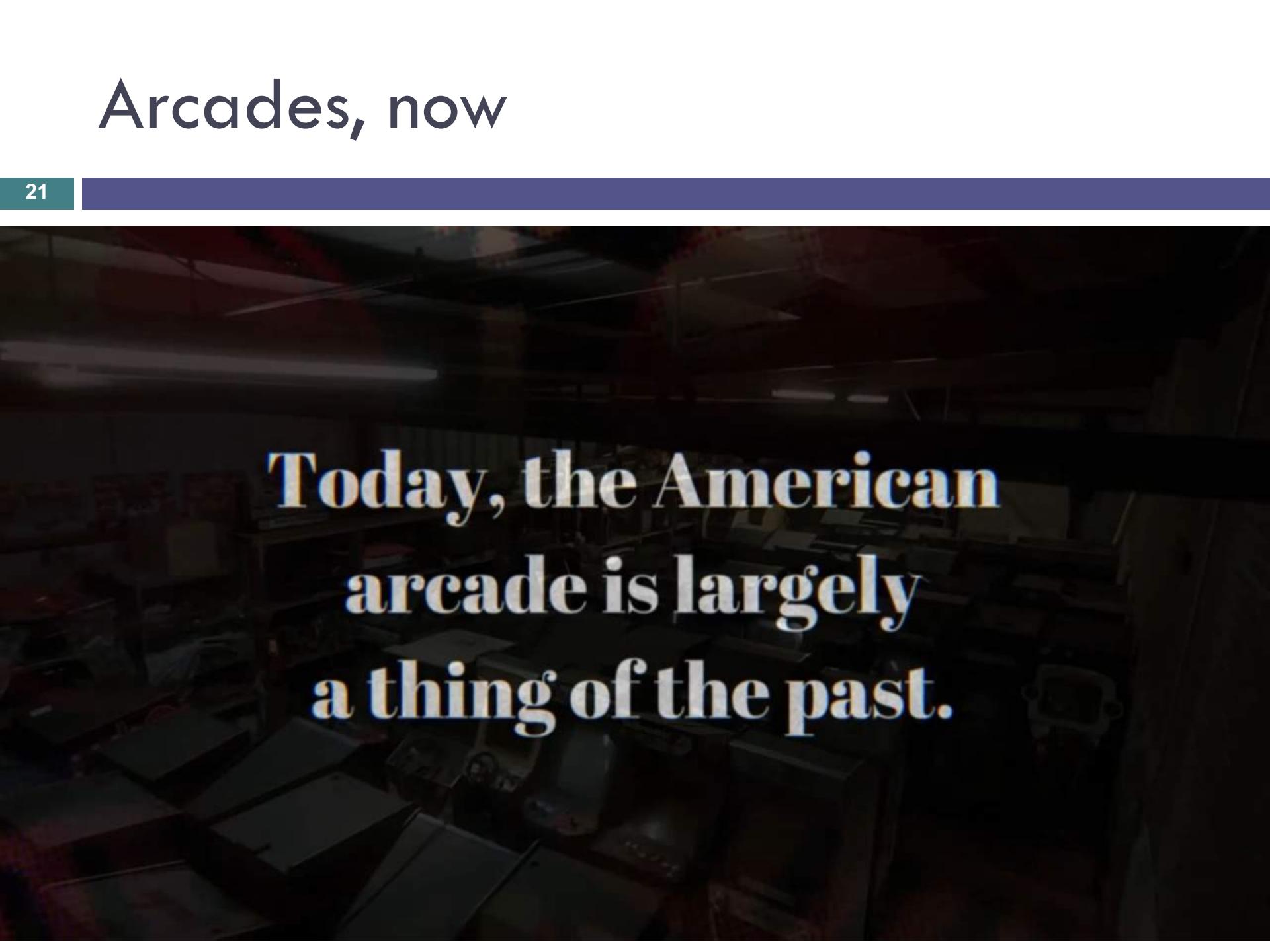
20

- Created the production, distribution, and consumer channels used by current video game industry



Arcades, now

21

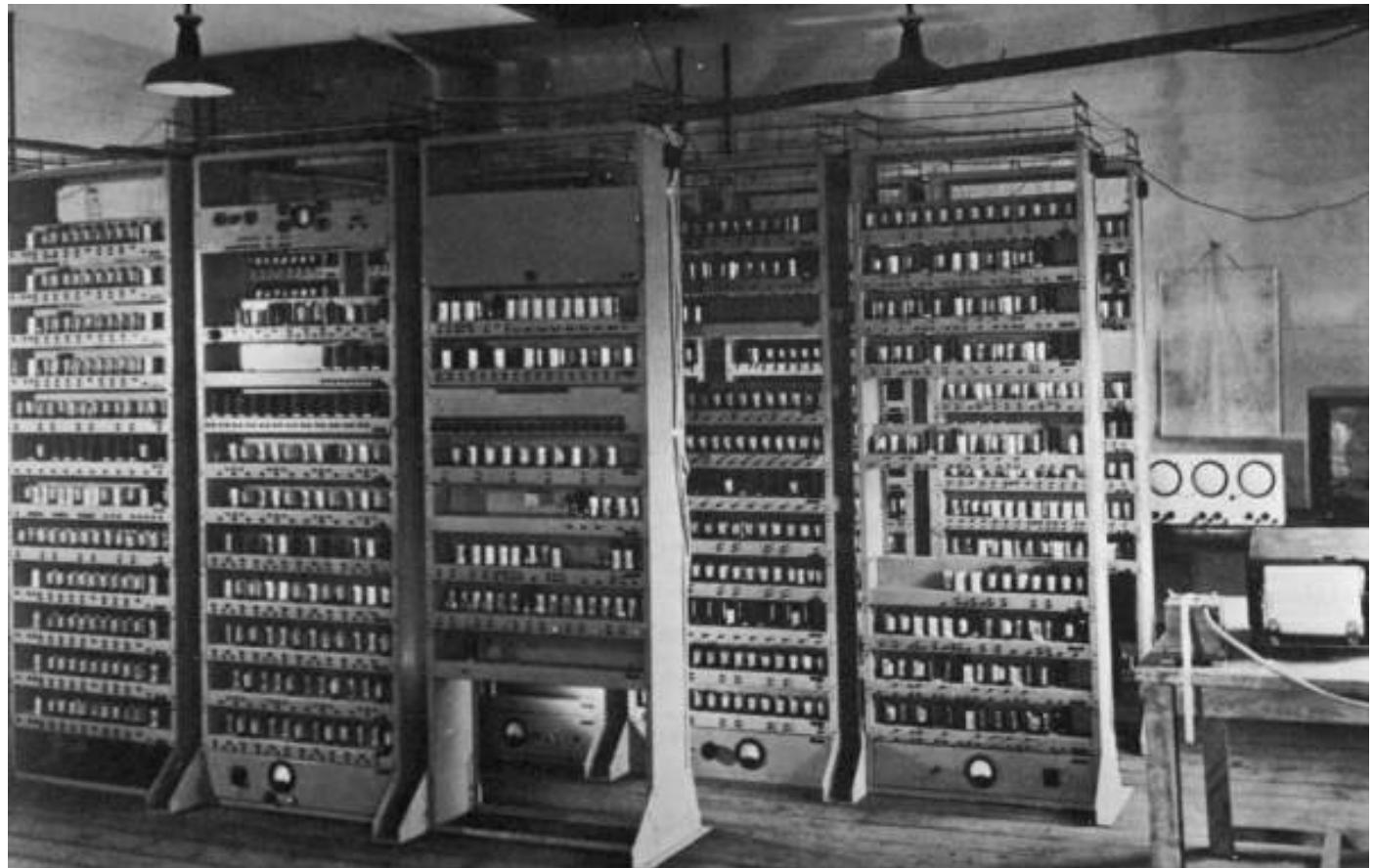
A dark, grainy photograph of an arcade interior, showing rows of video game cabinets.

Today, the American
arcade is largely
a thing of the past.

The EDSAC

22

- The placement and number of holes on a tape would be read as code by the *EDSAC*
- *Vacuum tube* computer
- Connected to a oscilloscope's cathode-ray tube readout display



First video game: Noughts and crosses A.

Douglas (1952) on an EDSAC at Cambridge

23



Second video game: Tennis for Two or Pong (1958)

24

- Willy Higginbotham on an oscilloscope connected to analog Donner computer
- Created for a demonstration of the instrumentation



Third video game: Spacewar (1962) on a PDP-1 @ MIT

25

- Gravity, warp
- First commercial game
- Widely distributed by DEC



Commercialization

26

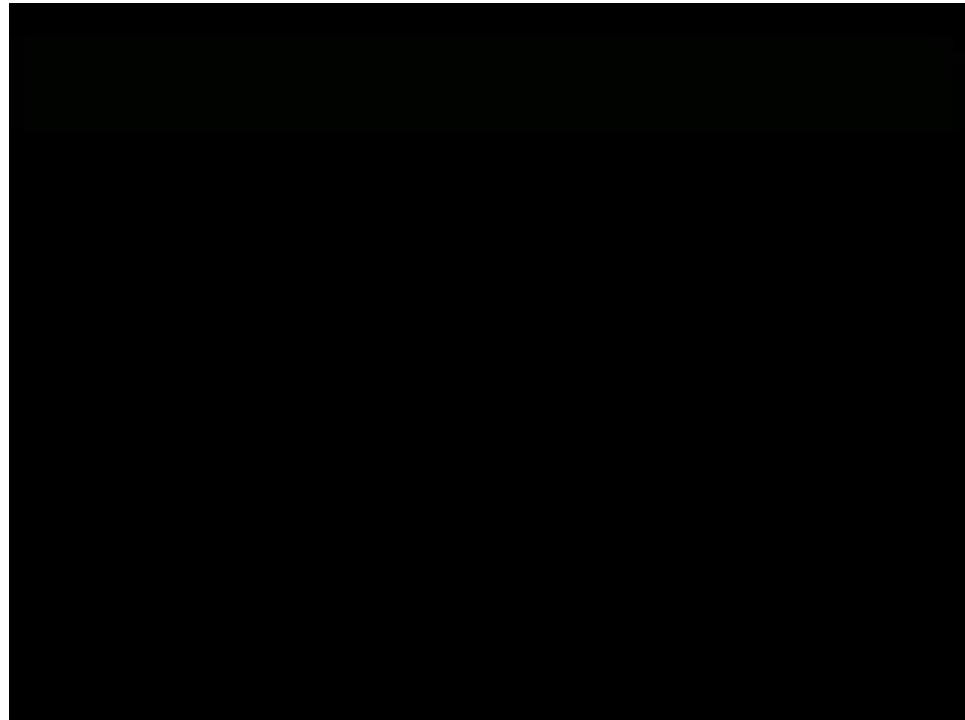


- 1971: Galaxy Game
 - ▣ Clone of Spacewar
 - ▣ Stanford, 10 cents in student union
 - ▣ Ran until 1979
- Bushnell/Dabney created custom arcade hardware for Spacewar clone
 - failure...
- June 27, 1972 Bushnell/Dabney founded Atari Inc. ... meanwhile...

Games on Television Screens (Consoles)

27

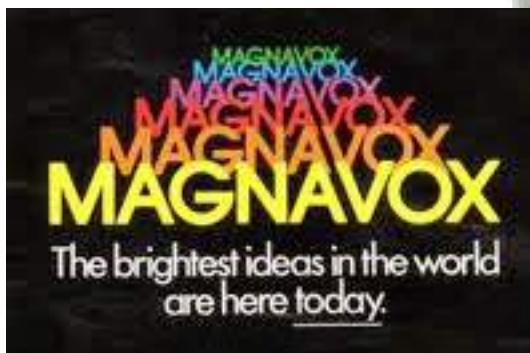
The original Atari, Inc. was a pioneer in arcade games, home video game consoles, and home computers. The company's products, such as **Pong** and the **Atari 2600**, helped define the electronic entertainment industry from the 1970s to the mid-1980s.



Games on Television Screens (Consoles)

28

The Magnavox Odyssey is the world's first commercial home video game console. It was first demonstrated in April 1972 and released in August of that year, predating the Atari Pong home consoles by three years.



70s Creativity, new game genres

29

- 1974, Tank designed by Steve Bristow
- 1973, Gotcha, pursuit
- 1974, Gran Trak 10, Driving/Racing
- 1976, Night Driver, sit down cabinet
- 1975 Breakout, SP Pong
- 1976 Death Race



Maze Games: Pac-Man

30

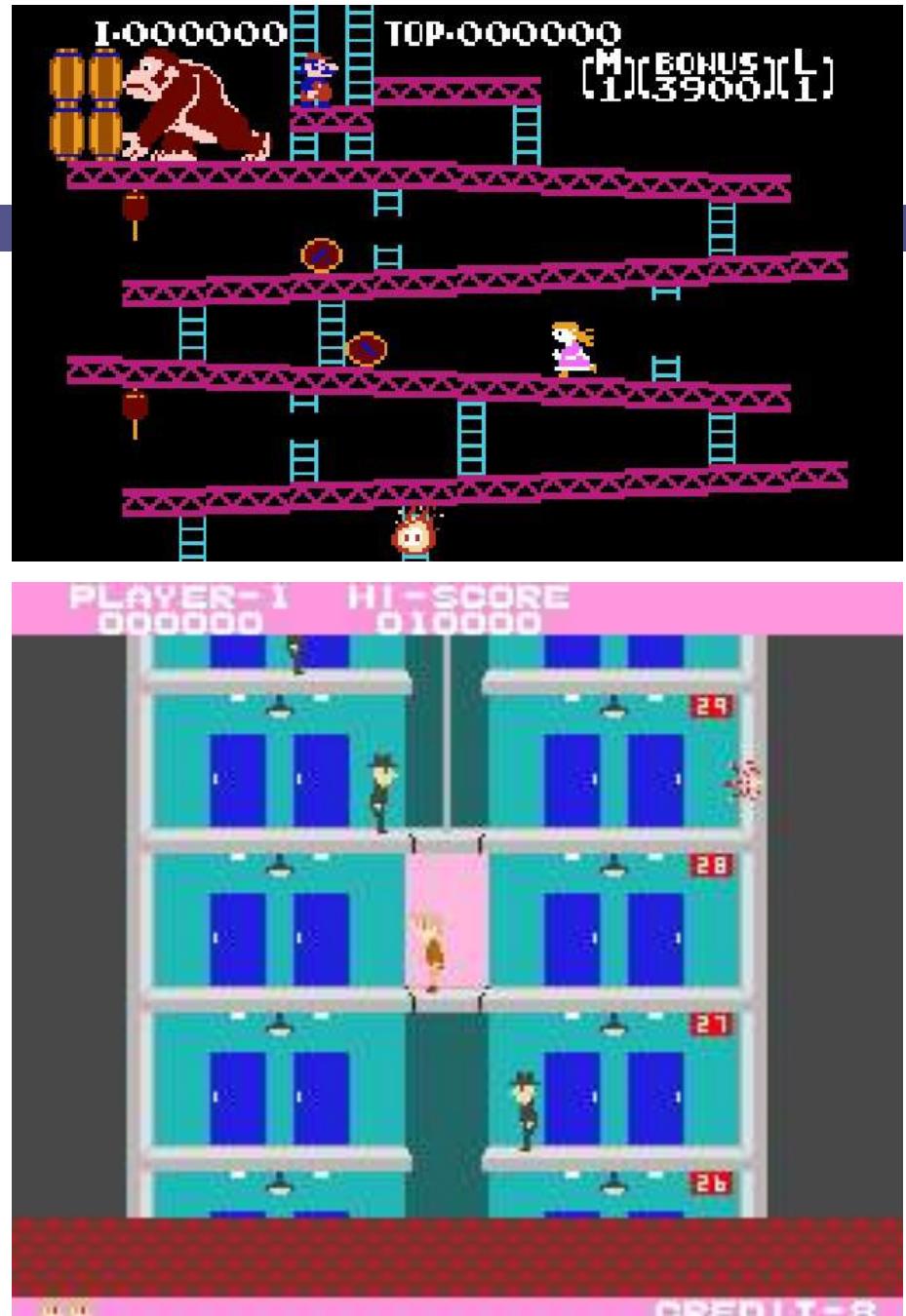


- 1980, Namco, Originally Puck-man but changed name before releasing in the US.
 - Best selling arcade game up to that point
 - First identifiable video character
 - Cover of Time
 - 1981, MIT students enhancement kits for pac-man ended up producing Ms. Pac-Man (4 mazes)

Platform Games

31

- 1981, Donkey Kong, Nintendo
- 1982, Donkey Kong Junior introduced Mario
- 1983: Elevator Action



80s

32

- 1982: EA born
- PCs, game source code printed in magazines
- Commodore 64
- 1983, Snipes, first networked **commerical** text-mode game
 - Maze War (university research game)
 - Spasim (3d multiplayer space sim), precursor to Doom and Quake
- Handheld LCD console

The golden era of adventure games

33

- LucasArts (1986–2000)



The golden era of adventure games

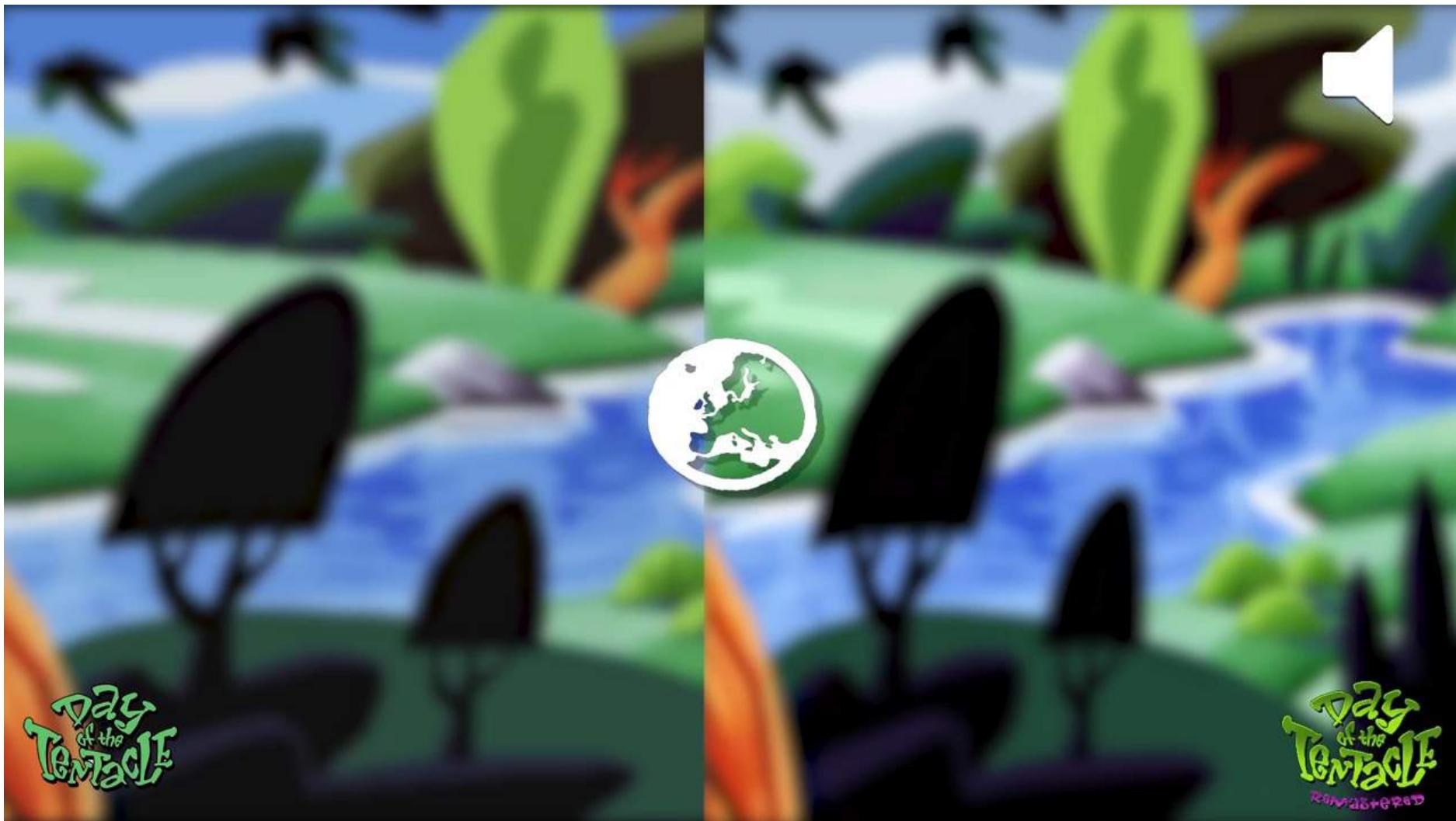
34

- LucasArts (1986–2000)
- Sierra (1979–1999)



The golden era of adventure games - Remastered

35



Ron Gilbert's last adventure game (2016)

36

Thimbleweed Park™



Readings for Friday!!

37

- Adam Rademacher: “Ten Things I Wish Uni Had Taught Me”
- Arnold Hendrick: “Hiring Game Designers”



Notes:

We will **discuss** them – so, do read them, and be prepared to ask and answer thoughtful questions in class.

Don't just read – please also use your **brain**...

History of Computer Games: Documentary

38



Questions?

39



For more information contact:

mary.barreto@staff.uma.pt

