Haute école d'ingénierie et d'architecture Fribourg
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Game Design & Development

Player's Mind

Hes·so
Haute Ecole Spécialisée de Suisse occidentale
Fachhochschule Westschweiz

Topics

- Design methods
  - Conceptualization
  - Prototyping
  - Playtesting
- Player-centered design
- Player’s mind
- Types of players and fun

Game Development Phases

- Conceptualization
- Prototyping
- Playtesting

Conceptualization

- This is the first phase of the game development process, it is the most crucial one (fear of the blank page)
- It is when you come up with ideas for your games
- Creativity is a nonlinear process, which can need to be supported for ideas on demand

Csikszentmihalyi's Creativity Stages

- Preparation
- Incubation
- Insight
- Evaluation
- Elaboration

Preparation

- Preparation is becoming immersed in a topic or domain of interest, a set of problematic issues.

Incubation

- Incubation is a period of time in which ideas “churn around” below the threshold of consciousness.

Insight

- Insight is sometimes called the “aha!” moment, when the pieces of puzzle, or an idea, fall into place.

Evaluation

- Evaluation is when the person decides whether the insight is valuable and worth pursuing. Is the idea really original?

Elaboration

- Elaboration is the longest part of the creative process; it takes the most time and is the hardest. This is what Edison meant when he said “invention is 99% perspiration and 1% inspiration.

Creativity Process is NOT Linear

- “The creative process is less linear than recursive. How many iterations it goes through, how many loops are involved, how many insights are needed, depends on the depth and breadth of the issues dealt with. Sometimes incubation lasts for years; sometimes it takes a few hours. Sometimes the creative idea includes one deep insight and innumerable small ones.”

  Mihaly Csikszentmihalyi

Think Differently and Spark Creativity

- To have new ideas it is important to:
  - Explore new domains
  - Do new activities
  - Go in depth in new topics
  - Analyze other games
  - Write down your thoughts (scribble, sketch, draw)

Share Ideas

- “If you have an apple and I have an apple and we exchange these apples then you and I will still each have one apple. But if you have an idea and I have an idea and we exchange these ideas, then each of us will have two ideas.”

  George Bernard Shaw

Support the Creative Process

- Some methods can help generating new ideas
- This is important when you need original ideas for your new game on demand (very important for professionals)

Brainstorming

- Brainstorming is a group creativity technique by which efforts are made to find a conclusion for a specific problem by gathering a list of ideas spontaneously contributed by its members.

Brainstorming Best Practices

- State a challenge
- Go for quantity
- NO criticism
- Welcome wild ideas
- Combine and improve ideas
- Vary the method
- Playful environment
- Put it on the wall
- Don’t go too long

State a Challenge

- A the very beginning, when you sit down to brainstorm, articulate the challenge for the session, clarify the **objective**.

Go for Quantity

- This rule is a means of enhancing **divergent production**, aiming to facilitate problem solving through the maxim quantity breeds quality. The assumption is that the greater the number of ideas generated, the bigger the chance of producing a radical and effective solution.

NO Criticism

- In brainstorming, criticism of ideas generated should be put 'on hold'. Instead, participants should focus on extending or adding to ideas, reserving criticism for a later 'critical stage' of the process. By **suspending judgment**, participants will feel free to generate unusual ideas. This is valid even when you are brainstorming alone: do not self-censor or edit your ideas.

Welcome Wild Ideas

- To get a good and long list of ideas, wild ideas are **encouraged** to have. They can be generated by looking from new perspectives and suspending assumptions. These new ways of thinking might give you better solutions.

Combine and Improve Ideas

- As suggested by the slogan "1+1=3". It is believed to stimulate the building of ideas by a **process of association***.

*Association in psychology refers to a connection between conceptual entities or mental states that results from the similarity between those states or their proximity in space or time.

Vary the Method

- Don’t rely on just one method for brainstorming: some structures might work fine for the group leaders but less well for other members. Try **alternate methods**: new ways of getting participants engaged, ask them if they prefer to do something in particular and give it a try.

Put It on the Wall

- It is important to get visual with your ideas. A favorite technique is writing on a **whiteboard** or on large pieces of paper taped to the walls and use also **post-its**. This can help get people out of their chairs and up on their feet talking and thinking. Writing on a whiteboard lends itself to big ideas, sketches, and side notes. When your ideas are on the wall, they can be seen and absorbed by the whole group. This helps combining and improving ideas.

Don’t Go Too Long

- Brainstorming is a high-energy activity. A good session will naturally die down after 60 minutes or so. The mind and body **need a break** after that much focused time. Do not push yourself beyond what is reasonable. Whatever ideas you have after an hour or so can continue to be worked on in the coming days.

Example


GOAL
imaginaryGuest
potgunvud4
DYNAMICS
SCENARIO
ACTIVE
SLEEP
AR

Alternate Methods

- List creation
- Idea cards
- Mind map
- Stream of consciousness
- Shout it out
- Cut it up
- Exquisite corpse
- Game jam
- Focus group
- Participatory design session

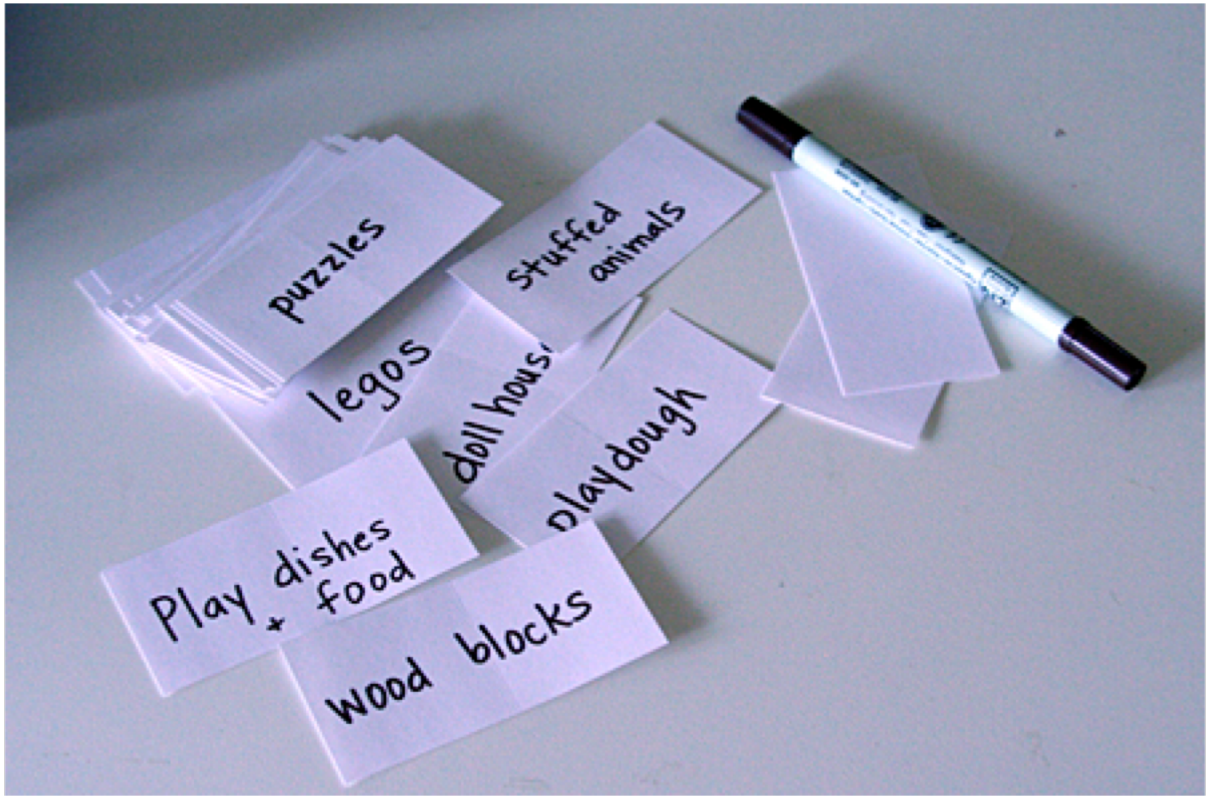
List Creation

- List out everything you can think of on a certain topic. Then create other lists on variations of that topic. This is greatly effective and allows to generate an amazing quantity of ideas. Indeed, the process of writing them down helps to freely associate and organize at the same time.

Idea Cards

- Take a deck of index cards and write a single idea on each one. Then mix them up in a bowl. Now take out the cards and pair them. This method allows generating unexpected concepts and combinations of words that can lead to new ideas.

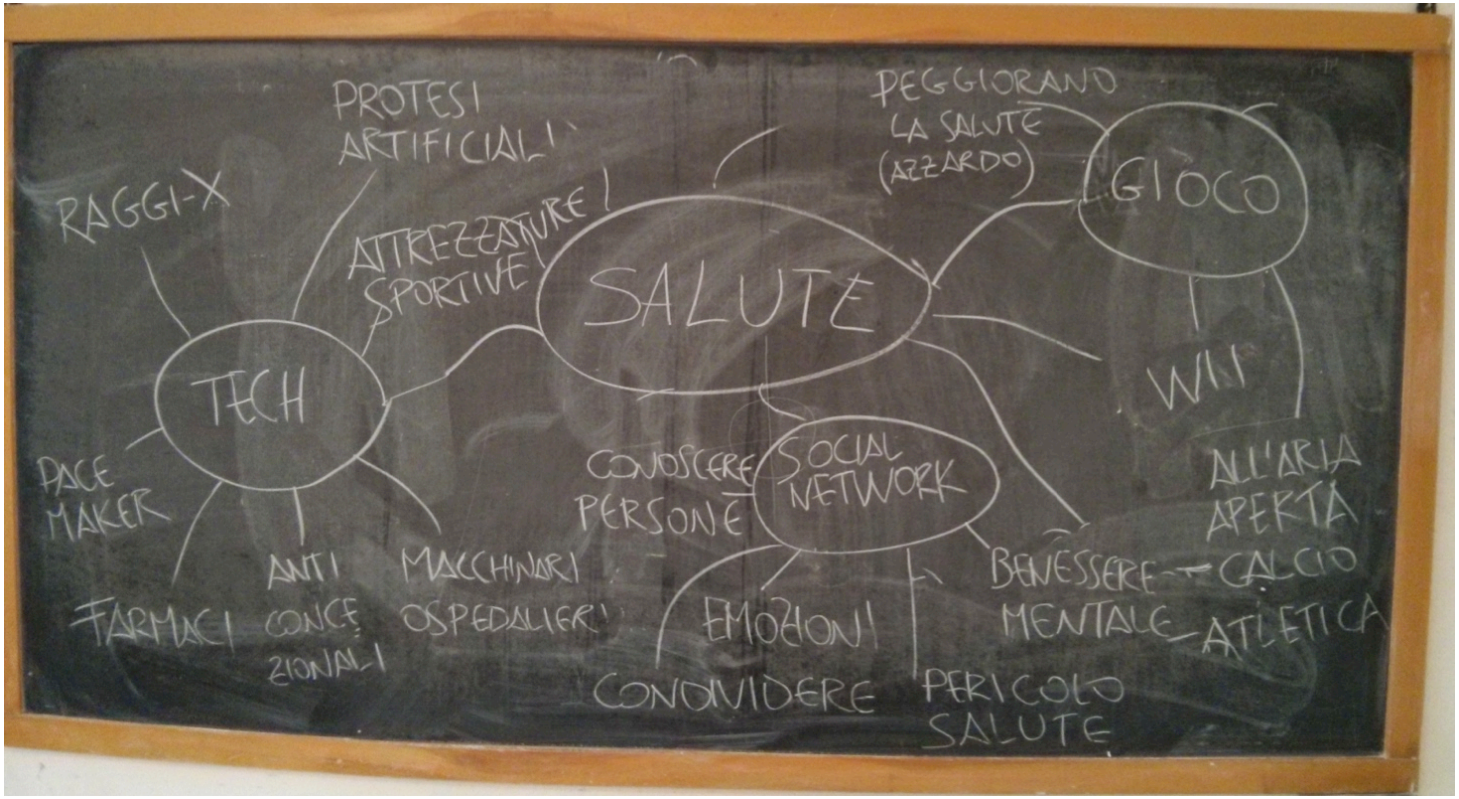
Idea Cards Example



Mind Map

- A mind map is a diagram used to visually organize information. You start with a core idea in the center and let related ideas radiate outward. You can use lines and different colored markers to connect ideas. Mind mapping provides a structure for thinking in a nonlinear manner. It is possible to work on whiteboards or using specific software.

Mind Map Example 1



Mind Map Example 2

Stream of Consciousness

- Sit down at your computer or with a pen and paper and start writing anything that comes to mind when you think of your game. Do not worry about being coherent or about punctuation. Just write as quickly as humanly possible. After 10 minutes of spewing words on a particular topic, stop and read over what you have done.

Shout It Out

- This is similar to stream of consciousness, but rather than writing, you shout out whatever comes into your head while a voice recorder is running. After 5 minutes of auditory abuse, go back and transcribe your mad ramblings.

Cut It Up

- Take a newspaper or magazine, open it up to any page, and cut random words and images out of it. It does not matter what they are. Anything that attracts your eye is fine. When you have a pile of pieces, start playing with them, matching them up, and try to come up with a game concept using this random collection. You can do the same using: https://en.wikipedia.org/wiki/Wikipedia:Random

Exquisite Corpse

- Exquisite corpse is a method by which a collection of words or images is collectively assembled. Each collaborator adds to a composition in sequence, either by following a rule (e.g. "The adjective noun adverb verb the adjective noun”) or by being allowed to see only the end of what the previous person contributed.

Game Jam

- A game jam is a gathering of game developers for the purpose of planning, designing, and creating one or more games within a short span of time, usually ranging between 24 and 72 hours.

Focus Groups

- A focus group is a form of qualitative research in which a group of people are asked about their perceptions, opinions, beliefs, and attitudes towards a product, service, concept, advertisement, idea, or packaging. Questions are asked in an interactive group setting where participants are free to talk with other group members. This method is effective for exploring the opinions of a specific target user group in order to inform design decisions.

Participatory Design

- Participatory design (originally co-operative design, now often co-design) is an approach to design attempting to actively involve all stakeholders (e.g. employees, partners, customers, citizens, end users) in the design process to help ensure the result meets their needs and is usable.

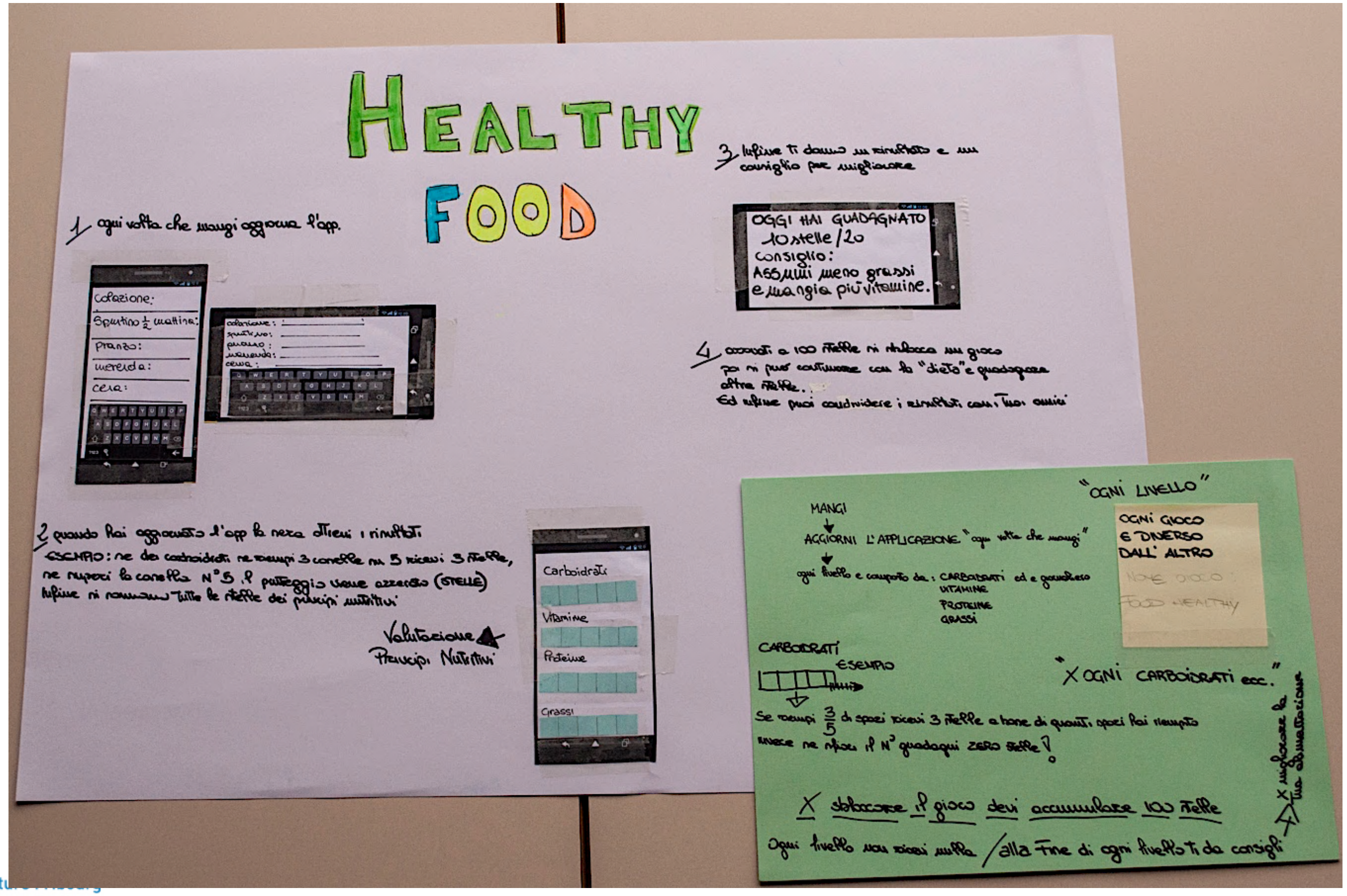
Participatory Design for Games

- It is possible to organize workshops with target users (and with other stakeholders, as often it can be for the design of serious games) to collaboratively generate ideas and produce lo-fi prototypes. The users are co-creators in the design process.

Example 1

Example 2

Example 3


HEALTHY
FOOD
1. ogni volta che mangi aggiorna l'app.
Colazione:
Spuntino ½ mattina:
Pranzo:
Merenda:
Cena:
3. Infine ti danno un risultato e un consiglio per migliorare
OGGI HAI GUADAGNATO 10 stelle /20
consiglio:
ASSUMI meno grassi e mangia più vitamine.
Carboidrati
Vitamine
Proteine
Grassi
"OGNI LIVELLO"
OGNI GIOCO È DIVERSO DALL' ALTRO
MANGI
AGGIORNI L'APPLICAZIONE
CARBOIDRATI
ESEMPIO
X OGNI CARBOIDRATI ecc.

Prototyping

- Prototyping, the second phase of game development, is the creation of a working model of your idea that allows you to test its feasibility and make improvements to it.
- 2 types:
  - Physical prototypes
  - Digital prototypes

Physical Prototyping

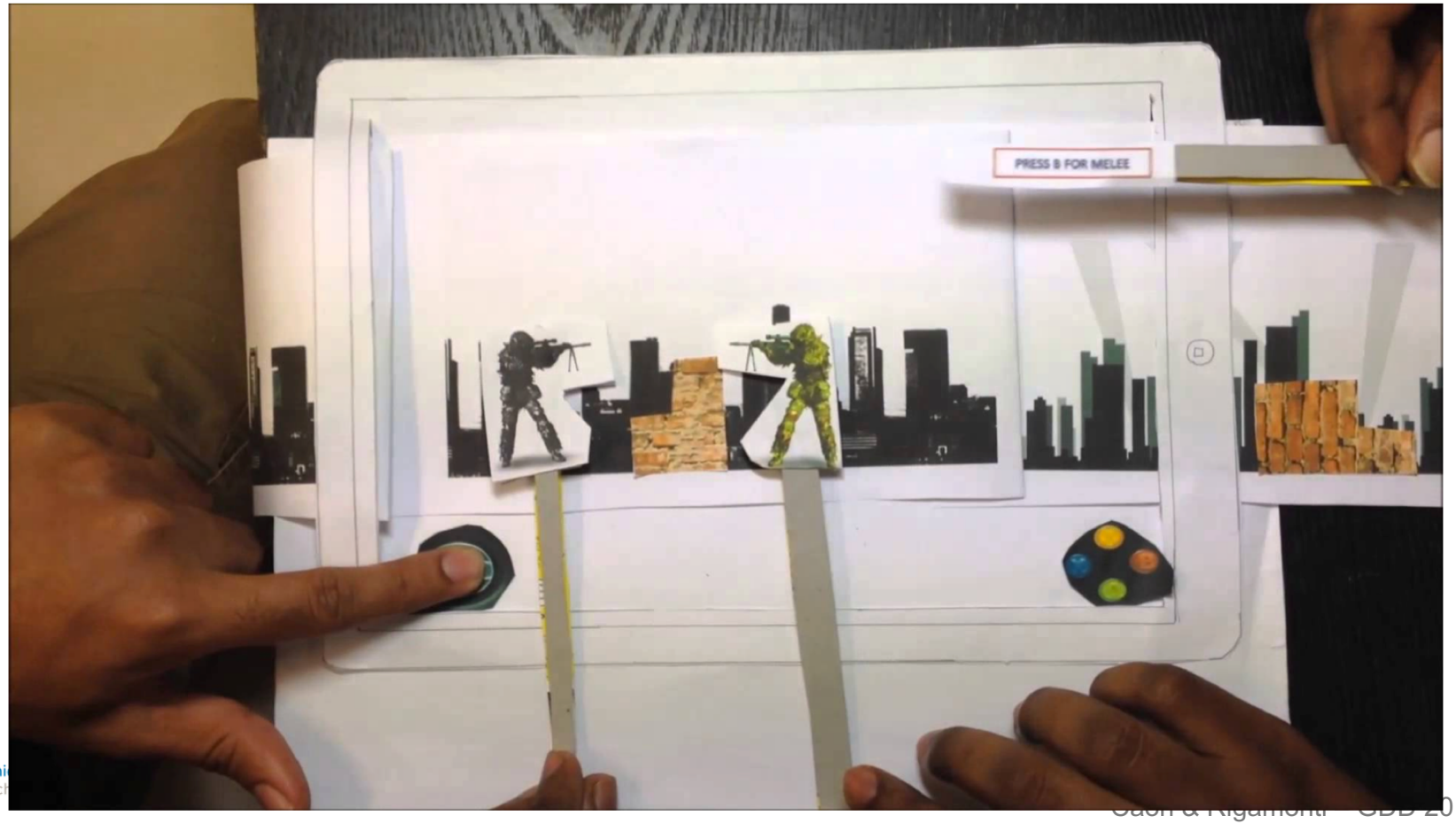
- Easy and quick
- Use paper, pens, objects and anything else you need
- Tangible interaction helps exploring new ideas
- It allows non-technical members to participate
- Paper prototypes of videogames are similar to tabletop games: they help formalizing the game because it implies making explicit the mechanics (no artificial intelligence, all the rules are applied by players)

Example 1

Example 2


Phone
PC
Glycemie
poids
option
Glycemie
poids
option
option
Glycemie
poids
Glycemie
poids

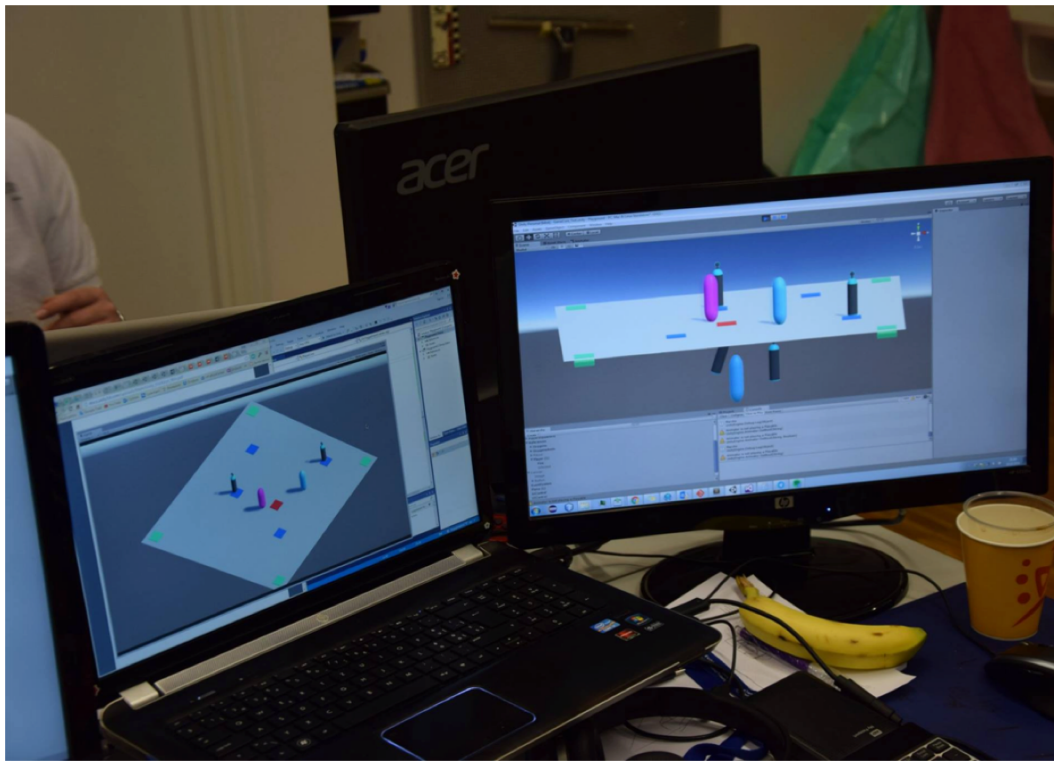
Example 3

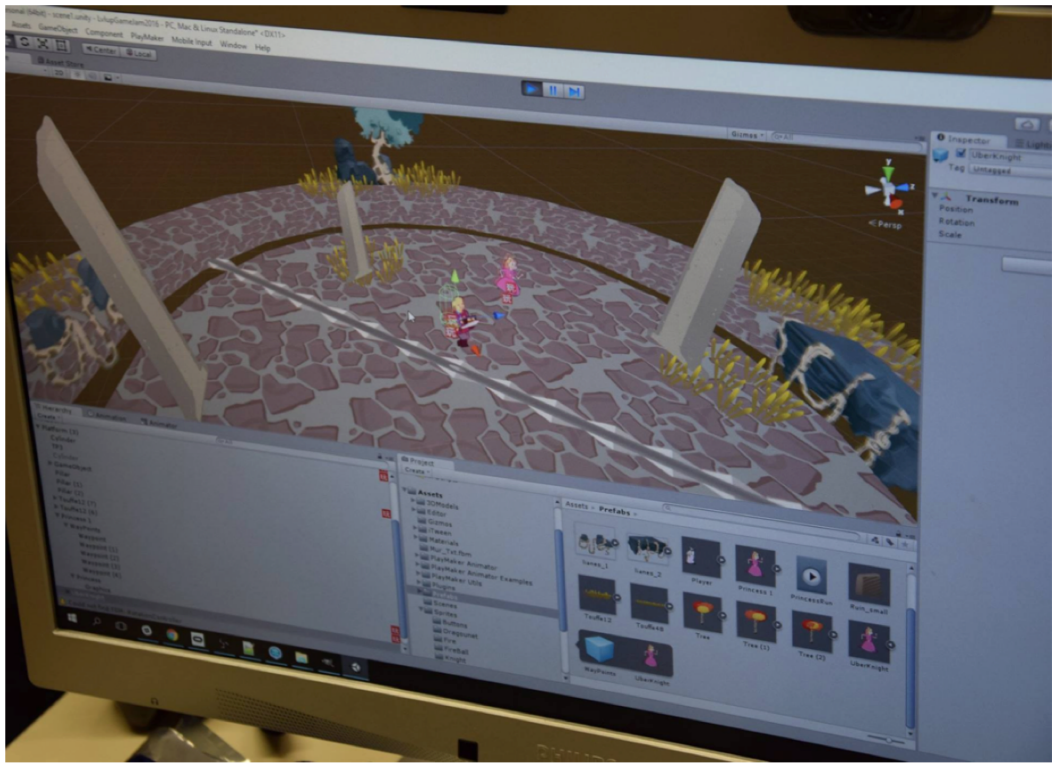


Digital Prototyping

- After having formalized and tested the foundation of the game mechanics with a physical prototype, it is time to move to the digital platform. The digital prototype extends the work done into a digital form and allows to test the essence of the game in its intended format.

Digital Prototyping Example

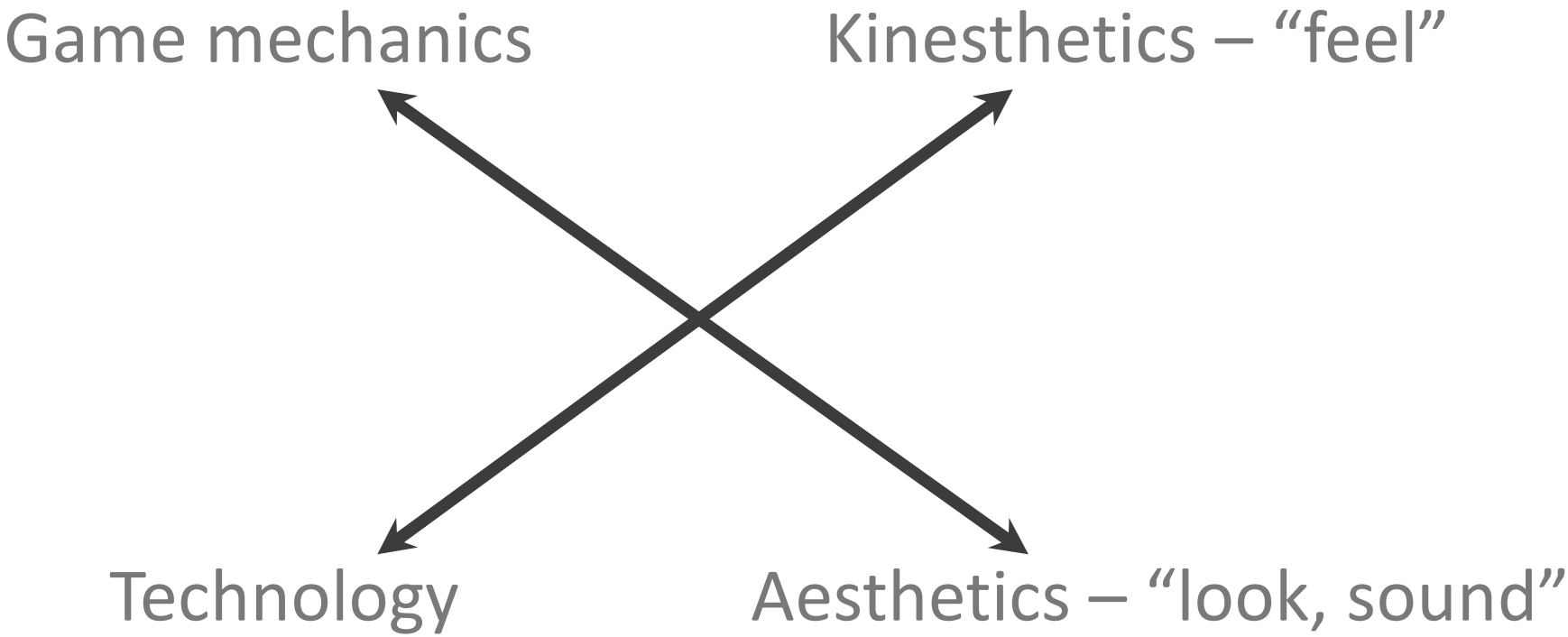




Digital Prototypes

- Made using elements needed to make them functional
- They are NOT finished games!
- They must be quick and simple
- Used to test models of core systems (game logic, special physics, environments, levels, et cetera)

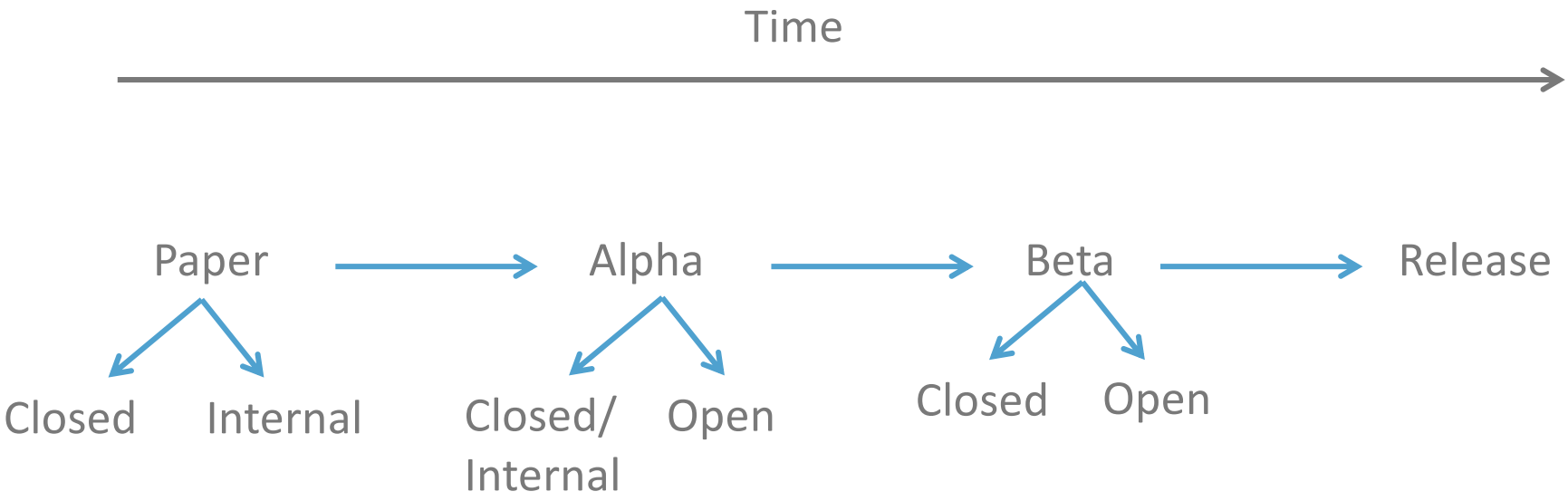
Four Areas of Investigation for Digital Prototyping



Playtesting

- A playtest is the process by which a game designer tests a new game for bugs and design flaws before bringing it to market. Playtests can be run **"open", "closed", "beta"**, or otherwise, and are very common with computer games, board games and role-playing games, where they have become an established part of the quality control process.
- You start playtesting with physical prototypes and continue through the digital prototypes till the end of the development process.

Improve through Playtesting

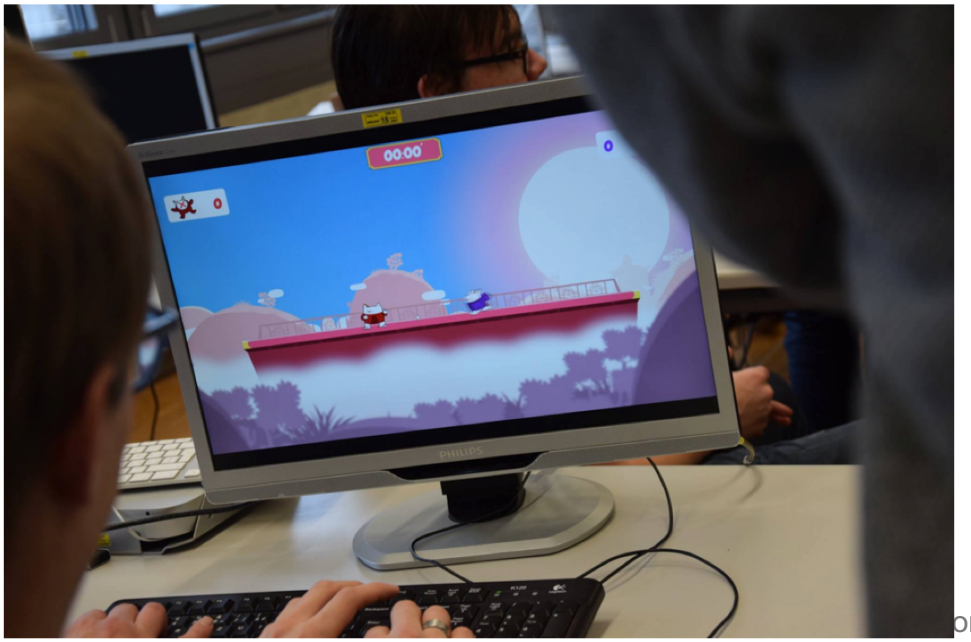


Open Playtest

- An **open playtest** could be considered open to anyone who wishes to join, or it may refer to game designers recruiting testers from outside. Prospective testers usually must complete a survey or simply provide their contact information in order to be considered for participation. The game designers and developers carefully observe the playtest session and take notes.

Closed Playtest

- A closed playtest is an internal testing process not available to the public.



Beta Playtest

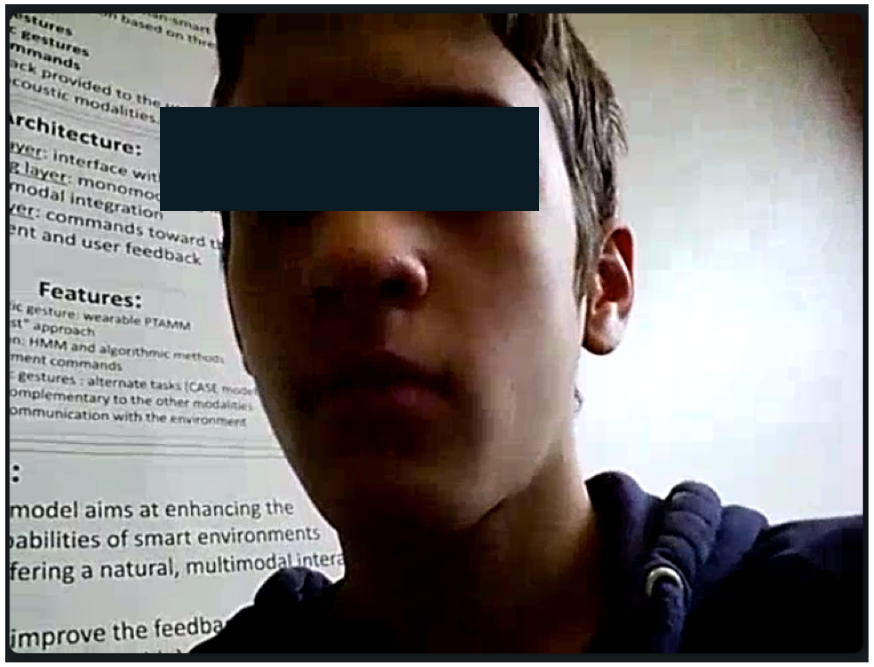
- Beta testing normally refers to the final stages of testing just prior to going to market with a product, and is often run semi-open with a limited form of the game in order to find any last-minute problems. With all forms of playtesting it is not unusual for participants to be required to sign a non-disclosure agreement, in order to protect the game designer's copyrights.

One-Way Glass Observation

Think-Aloud Protocol

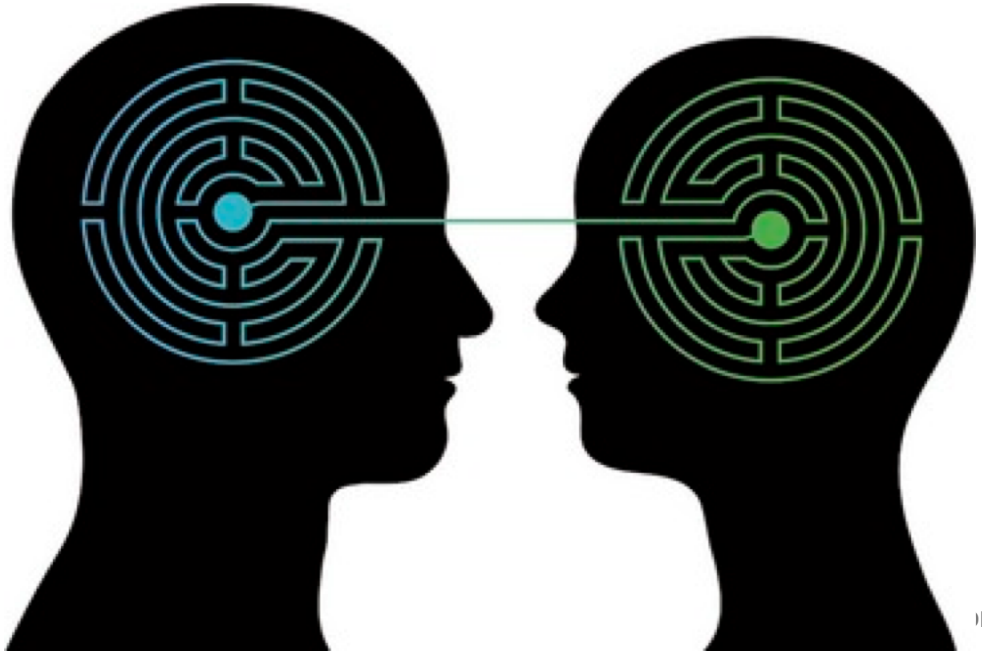
- Think-aloud protocol is a protocol used to gather data in usability testing in product design and development, in psychology and a range of social sciences. It can be used during open playtesting. The external player has to play with the game saying aloud what he thinks while the session is recorded with audio and the face of the user.

Think-Aloud Protocol Example



Empathy

- The ability to understand and share the feelings of another.



Empathic Design

- Empathic design is a user-centered design approach that pays attention to the user's feelings toward a product. This usually implies ethnography and design research to identify people’s unmet needs. In this case, it is to understand the players’ perception, emotions and desires.
- Adopting a player-centered design can help in creating empathy between the development team and the target users.

Player-Centered Design (PCD)

- The player-centric approach, inspired by the user-centered design practices, includes the players starting from the early stages of the game design process and involves them throughout all the design and development. The design is driven and refined by player-centered evaluation and the process is iterative.

Ernest Adam's PCD Process

- One of the most popular player-centric processes was presented by Ernest Adams in his 2010 book, Fundamentals of Game Design. He divided the game design process into three stages:
  - Concept
  - Elaboration
  - Tuning

PCD Process Stages

- Concept – Imagining the game and defining the way it works.
- Elaboration – Transmitting information about the game to the team who will build it.
- Tuning – No new features, only small adjustments to polish the game “before the game launch.”

Concept

Design stages	Methods and tools
Getting a concept	Idea generation, benchmarking, affinity diagrams, business model canvas, concept drawing, and game advertising
Defining the audience	Potential players interviews, focus groups, personas, stakeholder map, scenarios
Determining the player's role	Use cases, player journey maps, player experiences maps, stakeholder map, and similar games safaris
Fulfilling the dream: first steps for the gameplay definition	Group and individual interviews, experience prototype, Five Whys, What if…, mood boards and storyboards

Elaboration

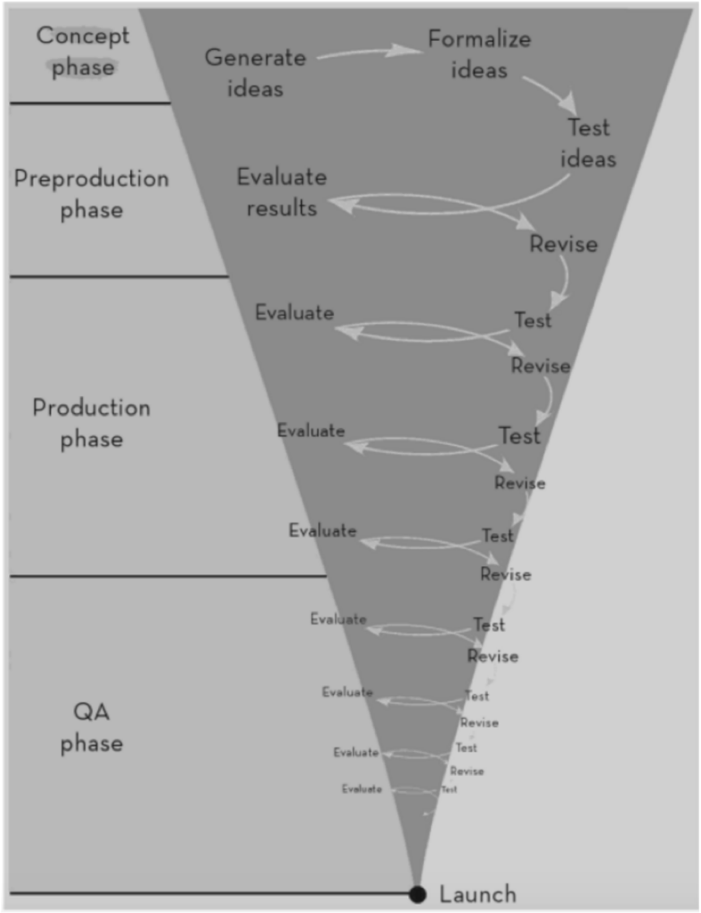
Design stages	Methods and tools
Defining the primary gameplay mode	Paper prototypes, focus groups and interviews, player expectations maps, and player lifecycle maps
Designing dramatic elements	Potential players interviews, focus groups, personas, stakeholder map, scenarios
Designing the core mechanisms	Players brainstorm and team brainstorm, paper prototypes and prototype simulators, expectations maps, interviews, and focus groups
Build, test, and iterate	Paper prototype, simulation prototypes, net promoting scores and semantic scale, player storytelling

Tuning

Design stages	Methods and tools
Build, test, and iterate	Beta test prototype, net promoting scores, semantic scales, heuristic evaluation, task analyses, grid and usability testing, UX questionnaires, interviews, storytelling

Development Process

- Spiral model: iterative incremental process
- Building on previous prototypes progressively validating ideas



Players' Mind

- Mental abilities for gameplay
  - Modeling
  - Focus
  - Empathy
  - Imagination

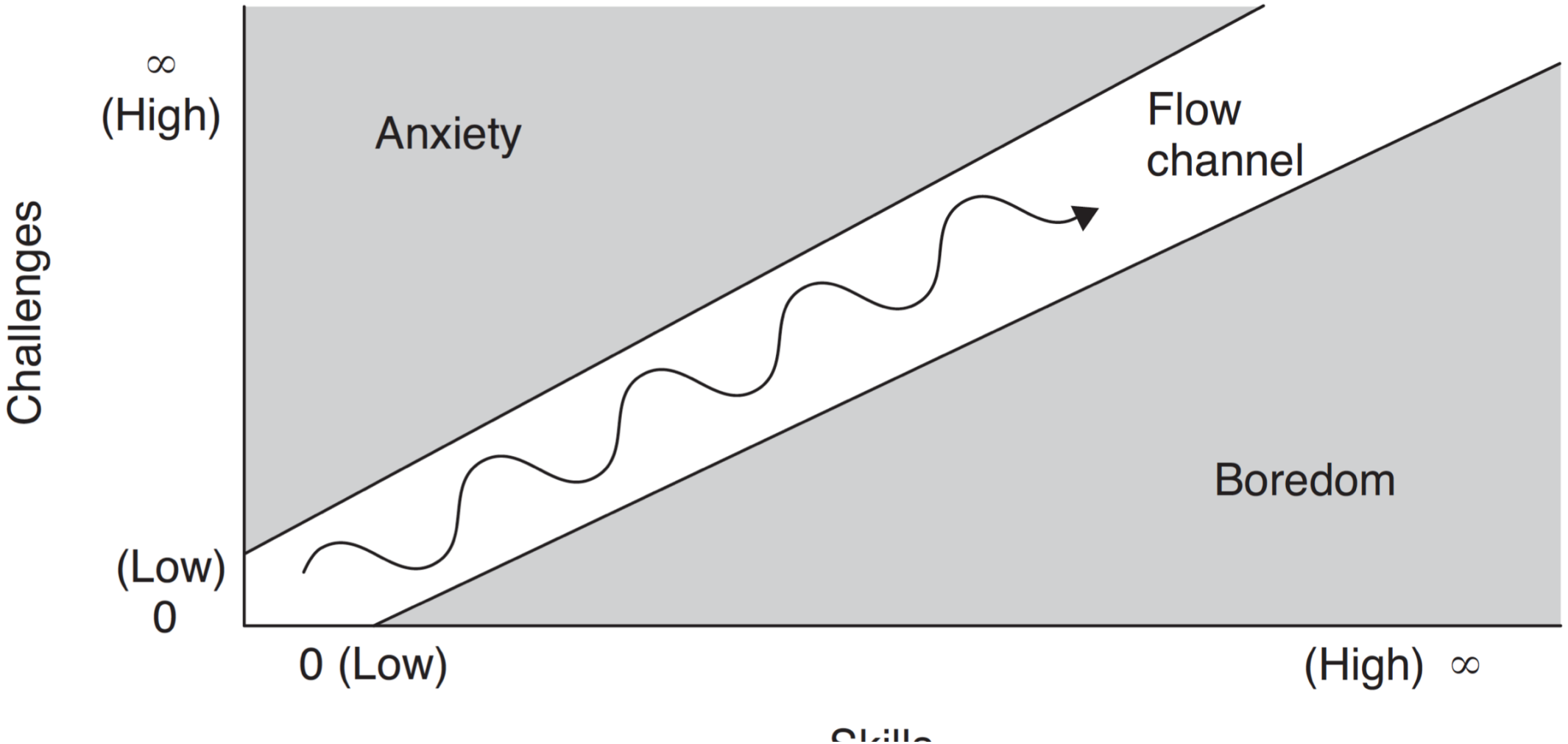
Modeling

- Reality amazingly complex
- Our mind simplifies the reality with models
- Models make things plausible
  - Comics are models: easier to interpret
- Games are models of the reality
  - Find the right model for your game!

Focus

- Sense of the world by focusing or ignoring things
  - During a party we can filter non interesting noises and focus on a discussion
- The game experience has to be interesting enough to capture player's attention
  - Clear goals
  - No distractions
  - Direct feedback
  - Continuously challenging

Csikszentmihalyi's Flow Channel



Empathy (with the game)

- The ability to project ourselves into the places of others
- Useful to make players part of our story world
- Project player decision-making capacity into the character(s)

Imagination

- Used everyday for **communication** and **problem-solving**
- Able to complete a brief information
- Adapts itself very fast to a new context
- The art of compromise: what you should show the player or not

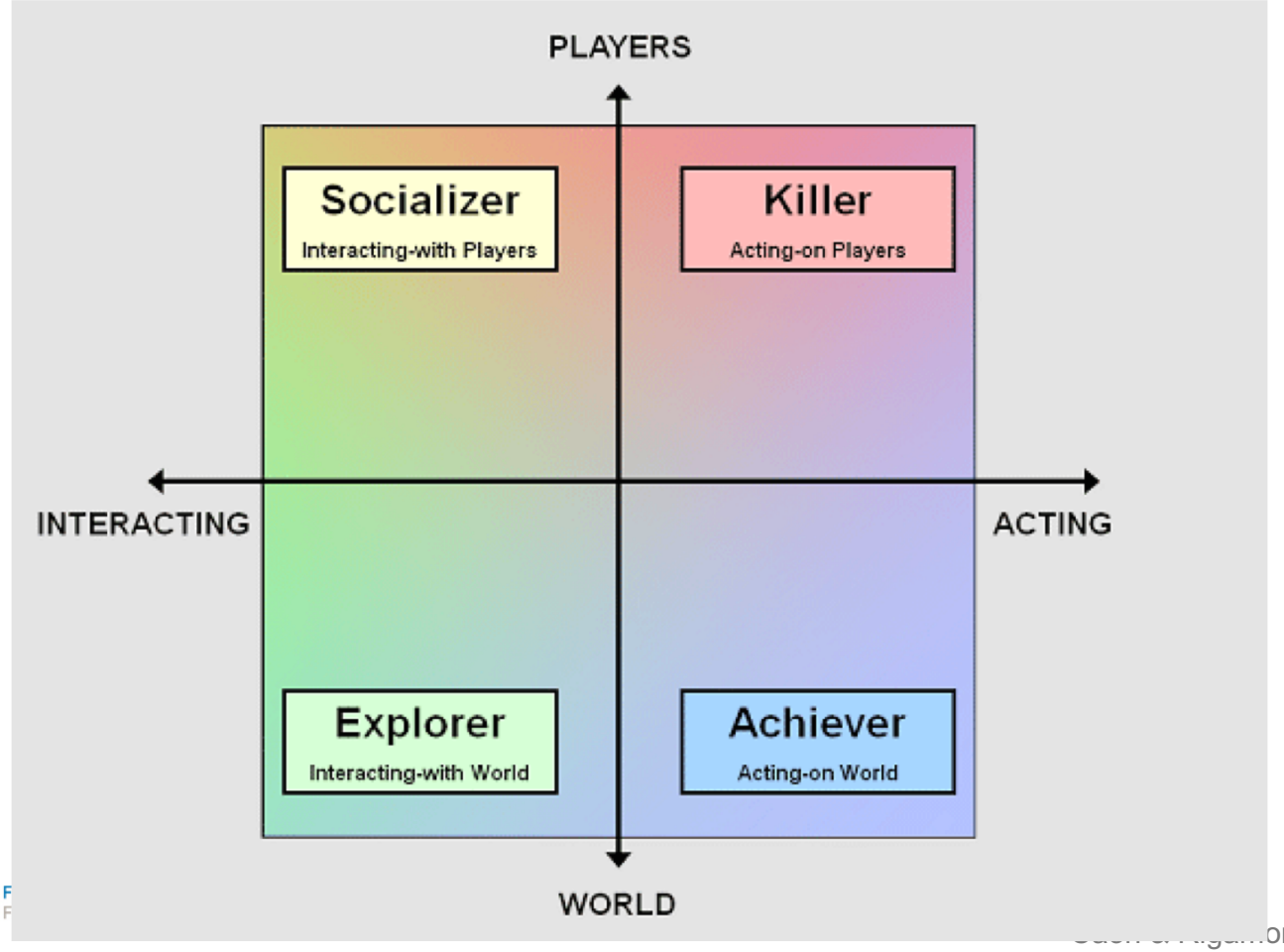
Bartle Test

- The Bartle Test of Gamer Psychology is a series of questions and an accompanying scoring formula that classifies players of multiplayer online games (including MUDs and MMORPGs) into categories based on their gaming preferences.

Bartle's Taxonomy of Player Types

- 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's Diagram



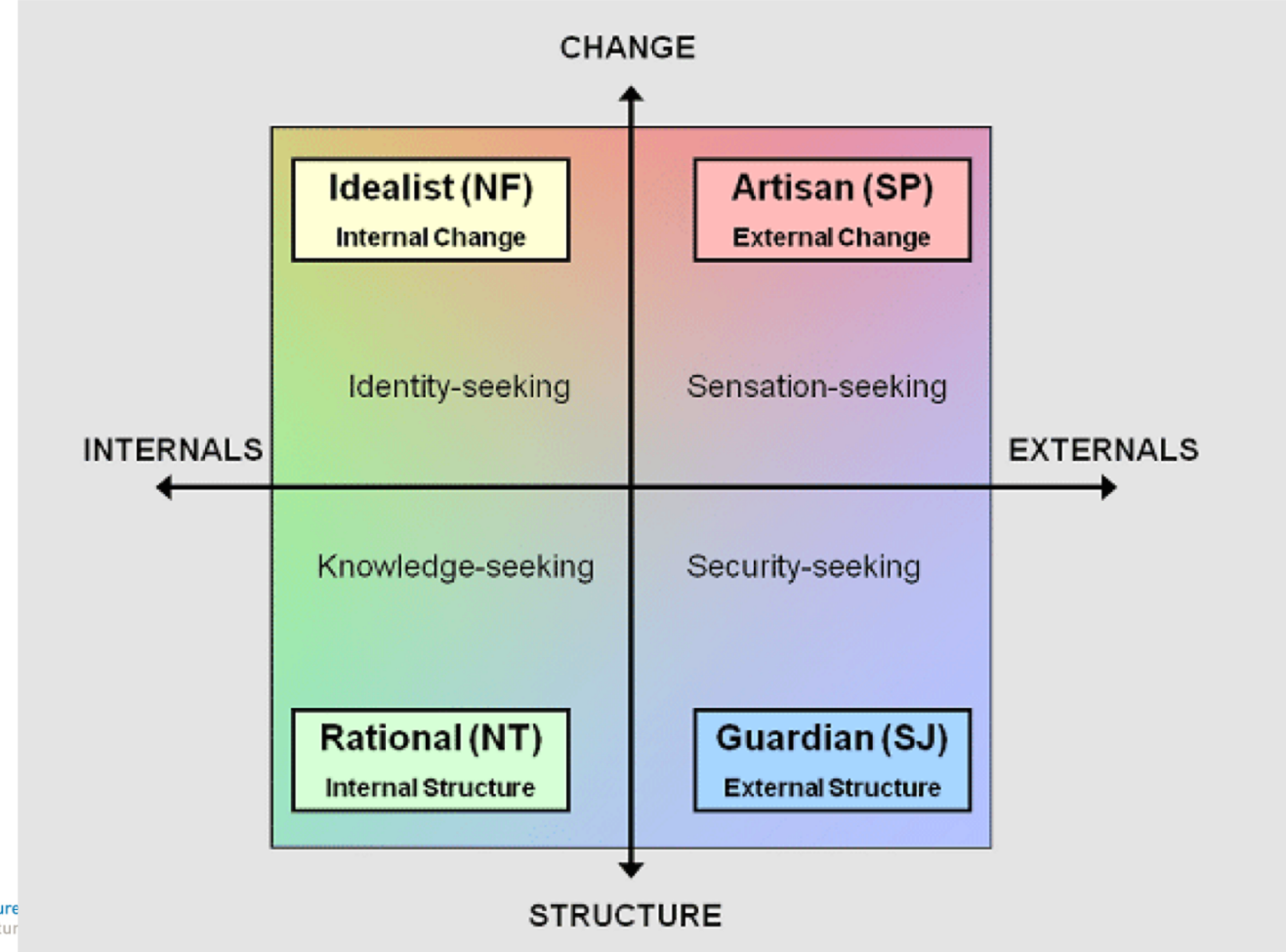
From Personality Model to Temperaments

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

The Four Keirsey Temperaments

- Artisan: (External Change) wants the power to be free to act at will on people and things
- Guardian: (External Structure) wants the security of possessions obtained by following the rules
- Rational: (Internal Structure) wants the satisfaction of understanding how things work
- Idealist: (Internal Change) wants people to cooperate toward happiness, “self-actualization”

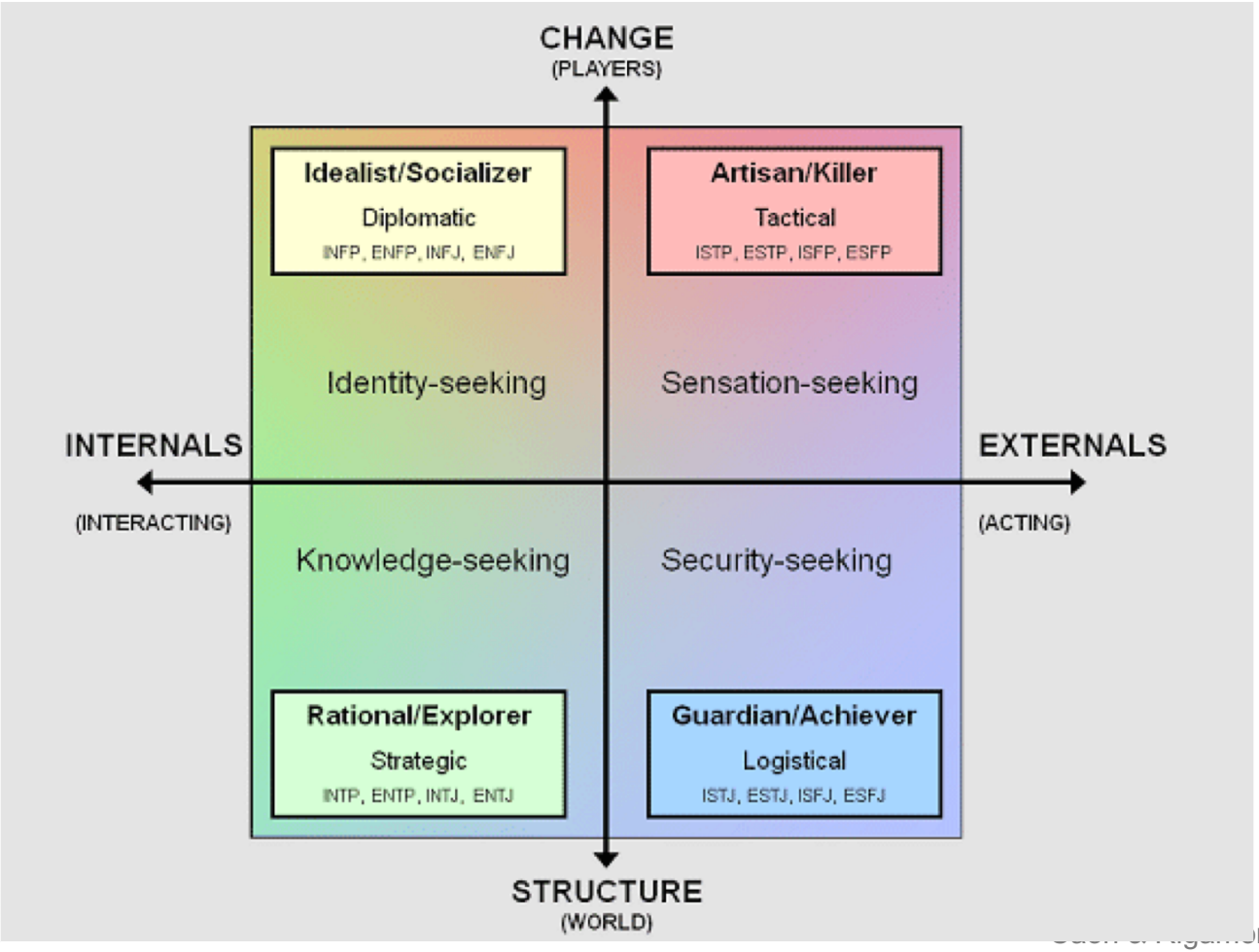
Keirsey Diagram



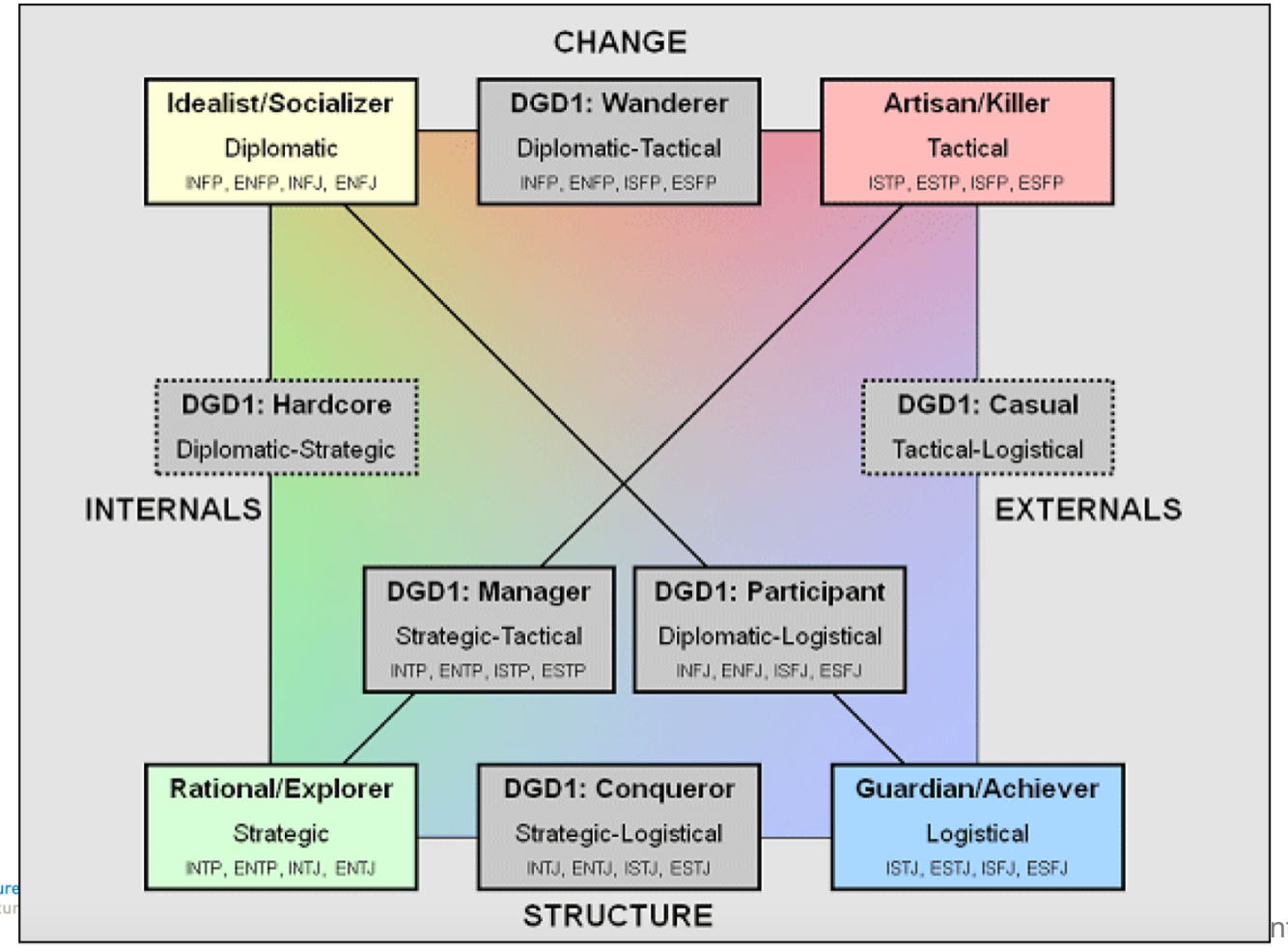
Keirsey + Bartle

BARTLE	STEWART's correlation	KEIRSEY
Killer	Acting (on) Players = External Change	Artisan
Achiever	Acting (on) World = External Structure	Guardian
Explorer	Interacting (with) World = Internal Structure	Rational
Socializer	Interacting (with) Players = Internal Change	Idealist

Keirsey + Bartle Diagram



Keirsey + Bartle + Bateman Diagram



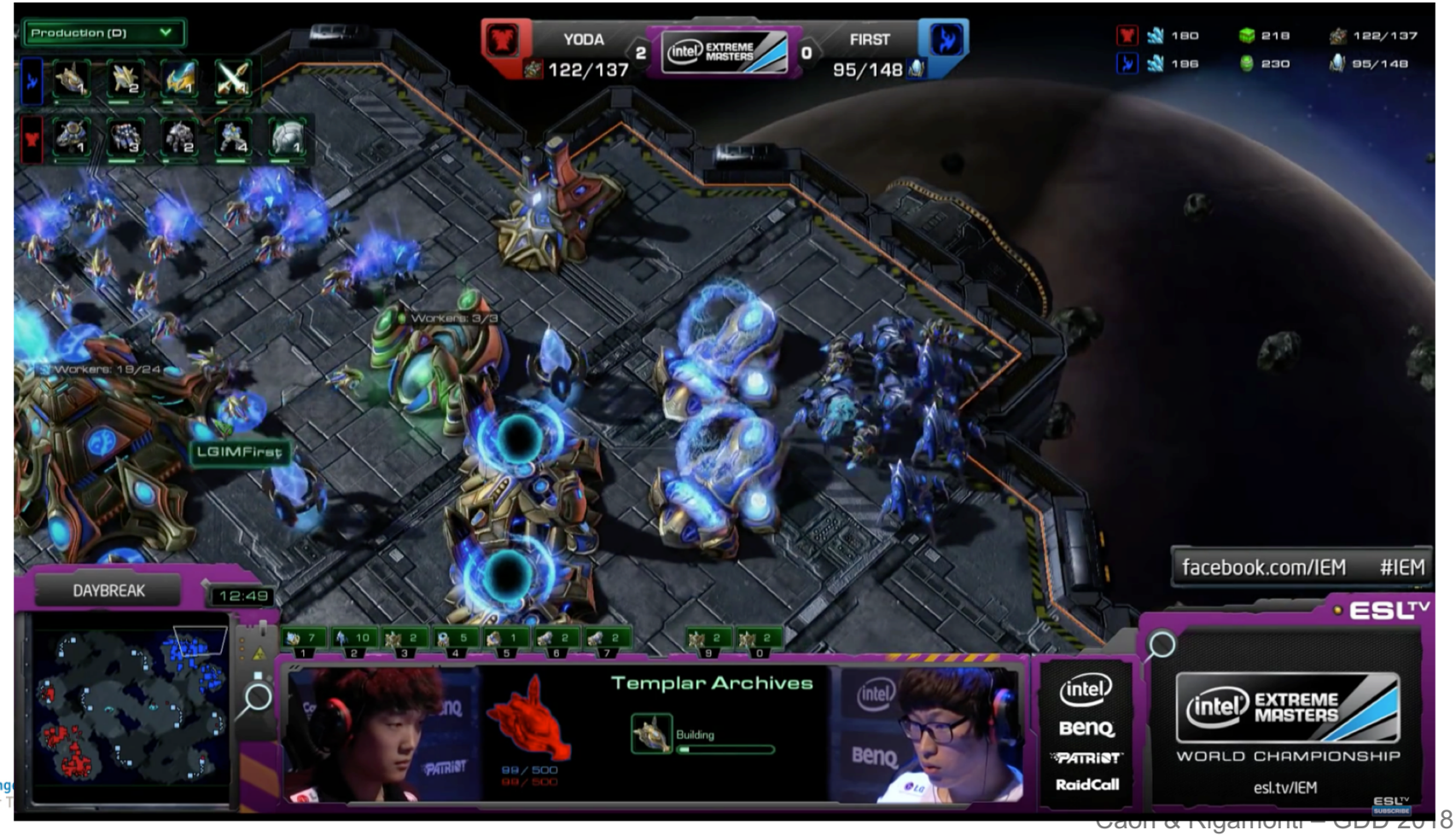
Lazzaro's 4 Keys 2 Fun

- People Fun: (Friendship) Amusement from competition and cooperation
- Easy Fun: (Novelty) Curiosity from exploration, role play, and creativity
- Hard Fun: (Challenge) Fiero, the epic win, from achieving a difficult goal
- Serious Fun: (Meaning) Excitement from changing the player and their world

People Fun Example

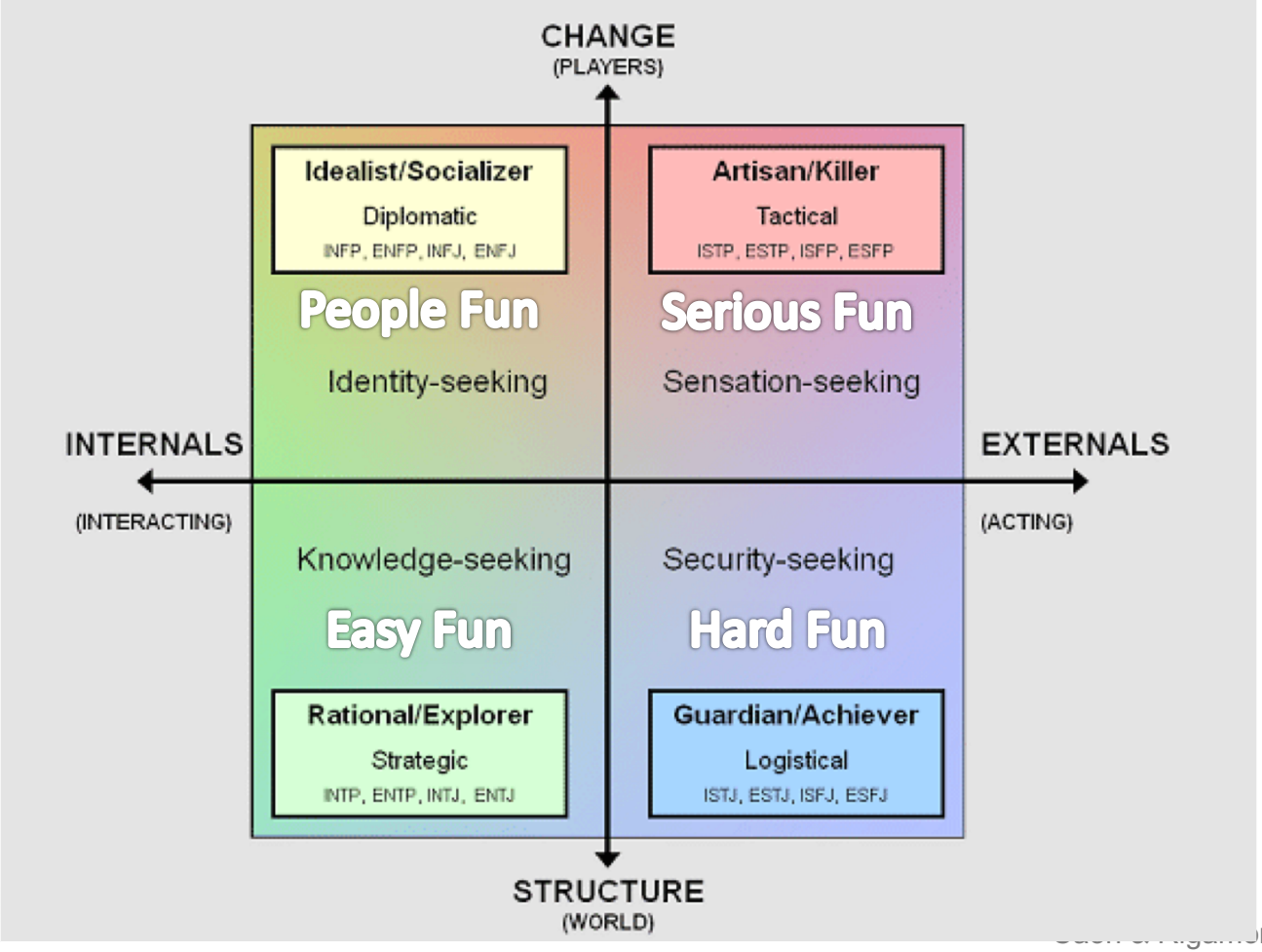
Easy Fun Example

Hard Fun Example



Serious Fun Example

Keirsey + Bartle + Lazzaro Diagram



Warning

- The aforementioned taxonomies must be used carefully, they are an approximation: reality is always more complex than that.

Wrap-up (Exam)

- Use design methods during the game development phases (Conceptualization, Prototyping and Playtesting)
- Know the Player-centered design approach
- Understand the player's mind (Modeling, Focus, Empathy and Imagination)
- Remember the types of players (Bartle's diagram and Keirsey's temperaments) and fun (Lazzaro's)