# A Model of Games, Game, Player

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  - and sheet music modeling the arrangement of sounds over time.
- In our modern lives, models are like artifacts: pervasive, important. Photographs, meters, indicators, price tags, audio recording . . . the list is endless.

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- All models are abstractions in some way or other; after all, they represent some- thing else, but that doesn't mean that particular thing is replaced by the model.
- Details are expected to be missing and imperfections expected to misrepresent reality, but as long as the model serves the intended purpose, we're happy.

# A Model of Games

- Programmer and designer Mark LeBlanc's MDA models the player experience.
- In the middle is Jesse Schell's "Elemental Tetrad", which describes the elements that make up the game artifact.
- Furthest right is a formal model, by Jesper Juul, which proposes necessary and sufficient conditions for something to be a game.

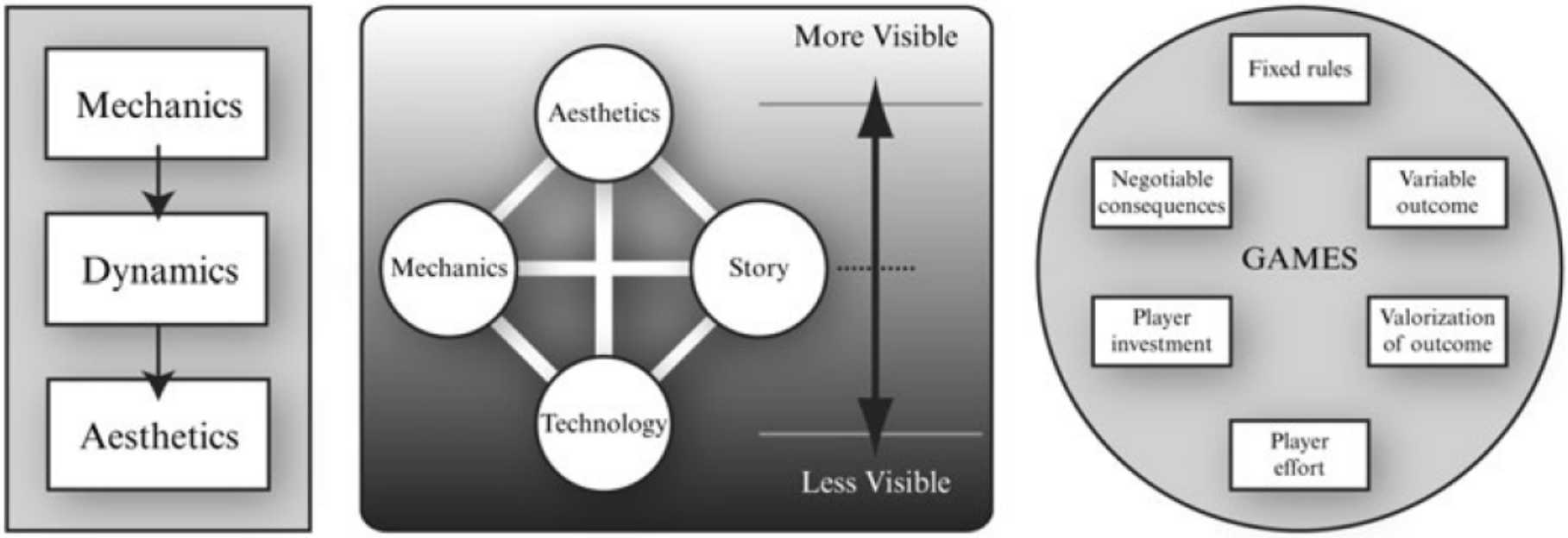


**Figure 1:** Three Models, MDA, Element Tatrad, "6 Game Features"

# A Model of Games

- The model of the player-game will organize some major features into two domains: **Player** and **Game**.
- Player can be thought of as *things directly concerning the player* rather than being just about some real person.
- Into Game, go *things that make up the game*. Arrows represent interaction.

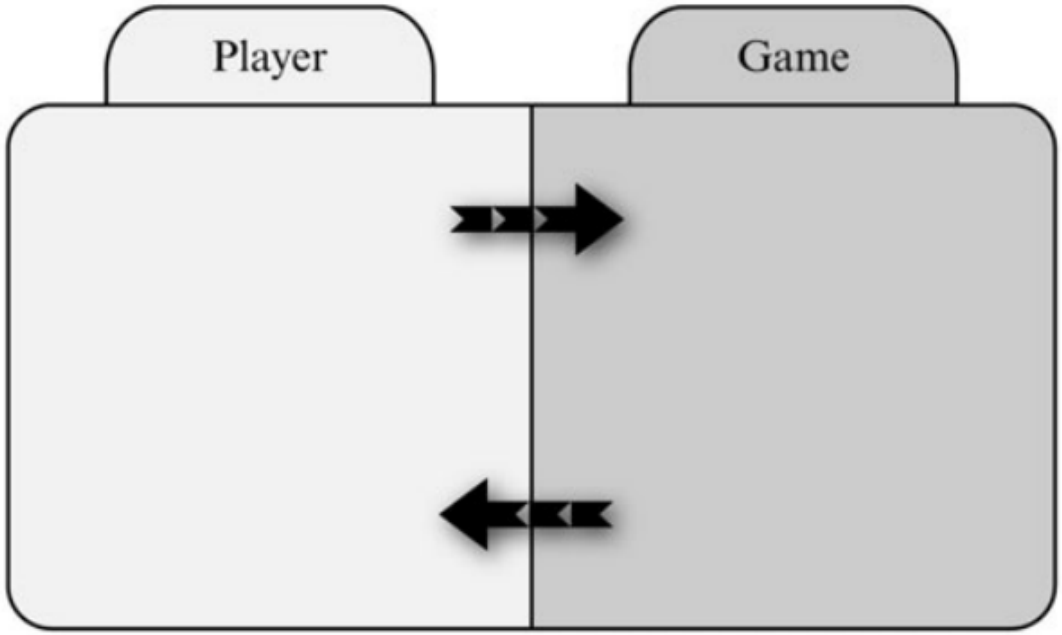


**Figure 2:** Player, meet Game

# A Model of Games

## The Game Half

- hardware (if it matters) and software (which always matters) definitely are the game.
- game system or gameplay system refers to just those that directly affect the things that the player will do
- Game content is all of the stuff forming and populating the universe that game systems govern.

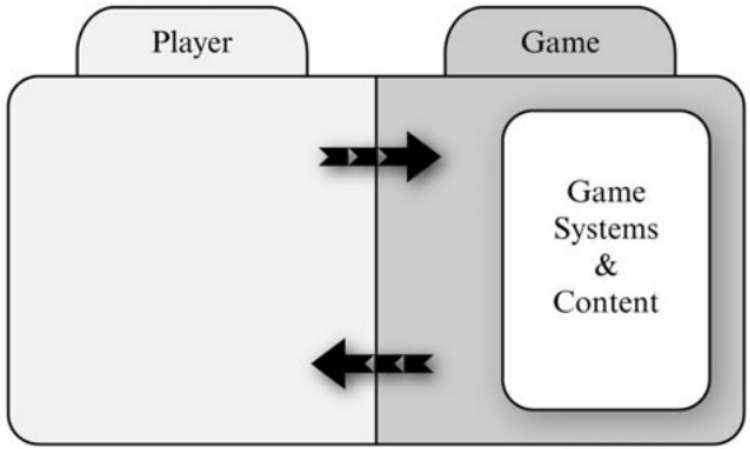


**Figure 3:** The Rules

# A Model of Games

## The Player Half

- The experience—the relevant perceptions, feelings, thoughts, intents, and actions.
- Experiences are enormous sets of mental stuff—packages of psychological and physical states all crammed into a box of percepts and memories and labeled with a context.
- Mechanics (game mechanics) are systems of interactions between the player and the game.
- In other words: what happens during play that affects the player.

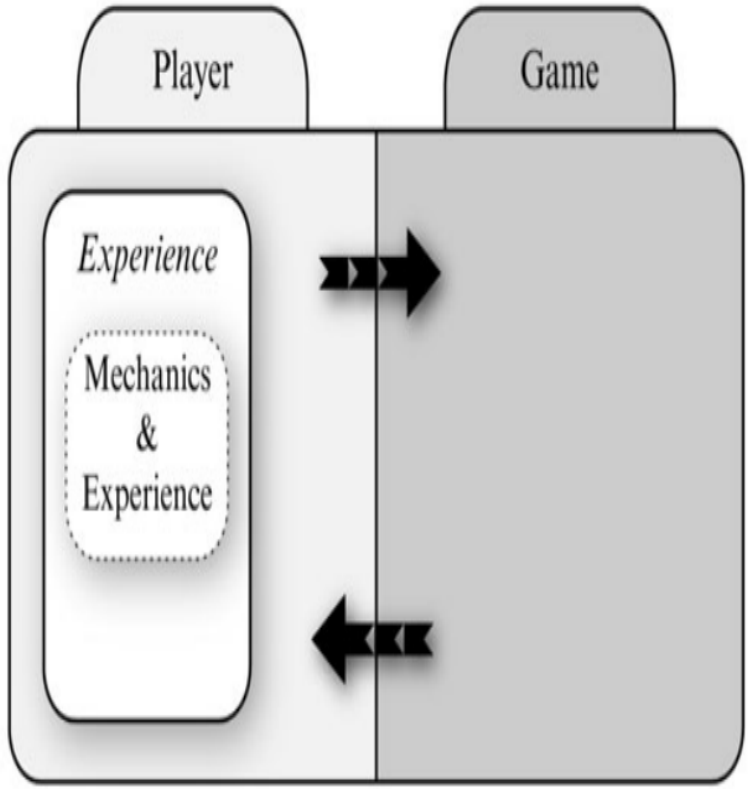


**Figure 4:** The Player's experience

# A Model of Games

## The Third Half

- Video games run on a "coprocessor system": one made of silicon and powered by electricity, the other inside the player's mind.
- the Player and Game are connected to each other via a system of interfaces—hardware and software devices that connect information and commands between device and user.
- the interface element contains all aspects of presentation and feedback, regardless of their mode—video, audio, haptic, etc.
- Players perform actions in the game, using the interface to signal their intentions to the game.

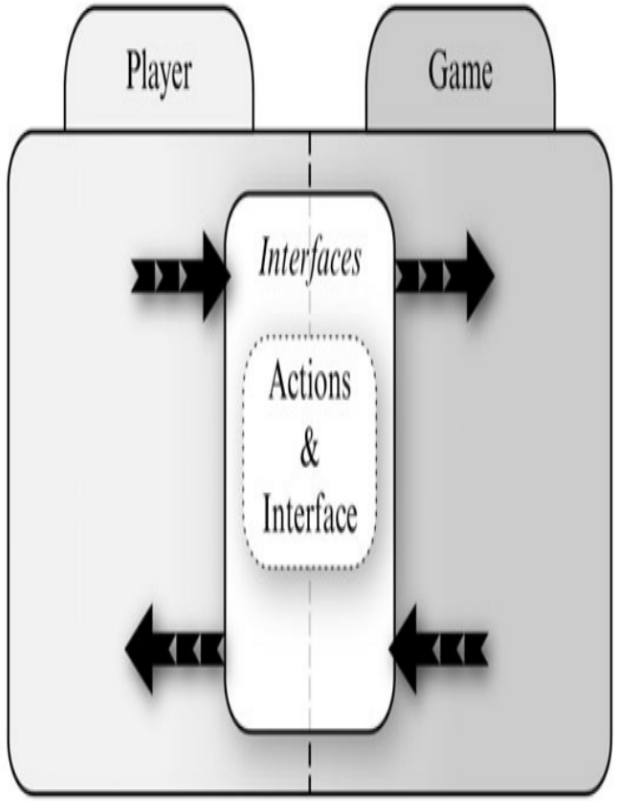


**Figure 5:** interfaces connect Player to Game

# A Model of Games

## All Together

Just remember that it's still a model, not a substitute for the real thing. As an abstraction, it should offer you a reasonable way to organize thinking while learning how to be a game designer the right way—making games!

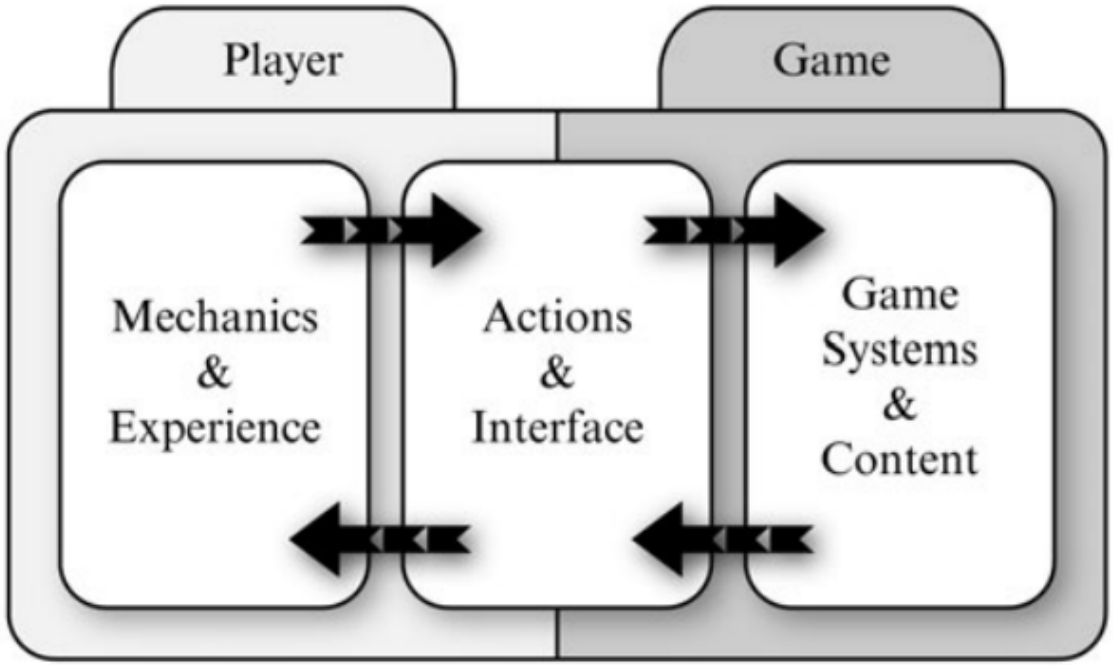


**Figure 6:** A model of the player-game relationship.

# Game

# Game

Ever since Plato, people have valued formal qualities as a way to fully explain and understand things.

Let's discuss a brief description of various formal elements typical of games. No assumptions are being made that any game has all of these, but most games have some. These elements are:

- Objectives
- Outcomes
- Uncertainty
- Rules and Structure
- Frames

# Game

## Objective

- Objectives are designed requirements that players must satisfy to accomplish a particular outcome.
- Encoded into the structure of the system itself, objectives are formal properties of the game, gating player progress.
- Objectives motivate player engagement with an offer of finite and solvable problems that players then work toward.
- An objective is not quite the same thing as a goal. Objectives are those things players get asked to do; goals are those things that players want to do.
- When a game offers one set of mutually exclusive objectives to everyone, it begins with a natural balance in place and effort is needed to balance and minimize the player concern for unearned advantages.

# Game

## Outcomes

- Games have a set of possible and uncertain outcomes that will result from the players' interactions.
- These conclude play—they end the game—and need to be measurable.
- We can say players need to eval- uate their performance for the game to be "meaningful." This is also why outcomes are usually unequal, and some results are better than others.
- Outcomes must also be agreeable, clearly present- ing the end of the game and the measures of performance.
- Winning and losing are the two classic outcomes. They are discrete and definitive results of competition, but even among classic examples of the type (backgammon, chess, etc.), games commonly can end without decision—a third outcome, the tie (draw).

# Game

## Uncertainty

- In a situation with many possible futures and no way to foretell which one will happen, you have uncertainty; it's any time that things are not certain!
- Uncertainty is necessary to the experience of playing games. Final outcomes that feel totally predictable tend to be boring or frustrating or both.
- Players need to feel as though the things that they want to do can be accomplished, but have some chance of failure, either through mistake or bad luck.
- Designers control uncertainty by requiring physical performance and mental strategy, as well as limiting the information.

# Game

## Rules and Strucutre

- Rules form the structure of each game, establishing an uncertain relationship between the player and her objective.
- By clarifying the manner of play, formal rules allow players to concentrate on exploring different strategies in uncertain systems rather than spending most of their effort on continually reinventing and maintaining the system itself
- Explicit rules are a basic formal structure of any game artifact. These are some- times called the "laws" of the game—binding, nonnegotiable, and unambiguous.
- Operations are rules describing the methods and procedures players use to play the game.
- Systemic rules define the possible conditions of the game and its events.
- Rules in electronic games are formed by the platform and software architectures. Advantages are no ambiguity and detailed rule system.

# Game

## Frames

- Games and playing create, in our minds, temporary spaces that are separate from the real world.
- The frame of a game is the understood context of play—"this is just a game"—the time and space setting apart playful and inconsequential activities from the serious and consequential.
- Feelings within the context of the game's frame are supposed to be safe and experi- enced without real-world effects.
- A betrayal in Diplomacy, which is part of the game, can be difficult for some players to enjoy and can be tough to forgive, lingering into the real world.
- Other feelings, like frustration or humiliation, can disengage players from the game entirely.

# Game

## Player

- There is nothing for a game designer to value more highly than the player.
- Most of today's veteran game designers grew up playing games.
- They tend to come from very similar stock, having tuned their awareness and sensitivities playing hardcore games.
- Passion and excitement have been forged in experience to create the sensibilities that guide them through each day's work.
- Times are changing and the audience is changing with them.
- But how can designers create a successful game for people potentially different from them?
- The answer is by becoming deeply interested in **people and psychology**, and most importantly, learning how to listen.

# Game: Player - Emotions and Feelings

## Emotions and Feelings

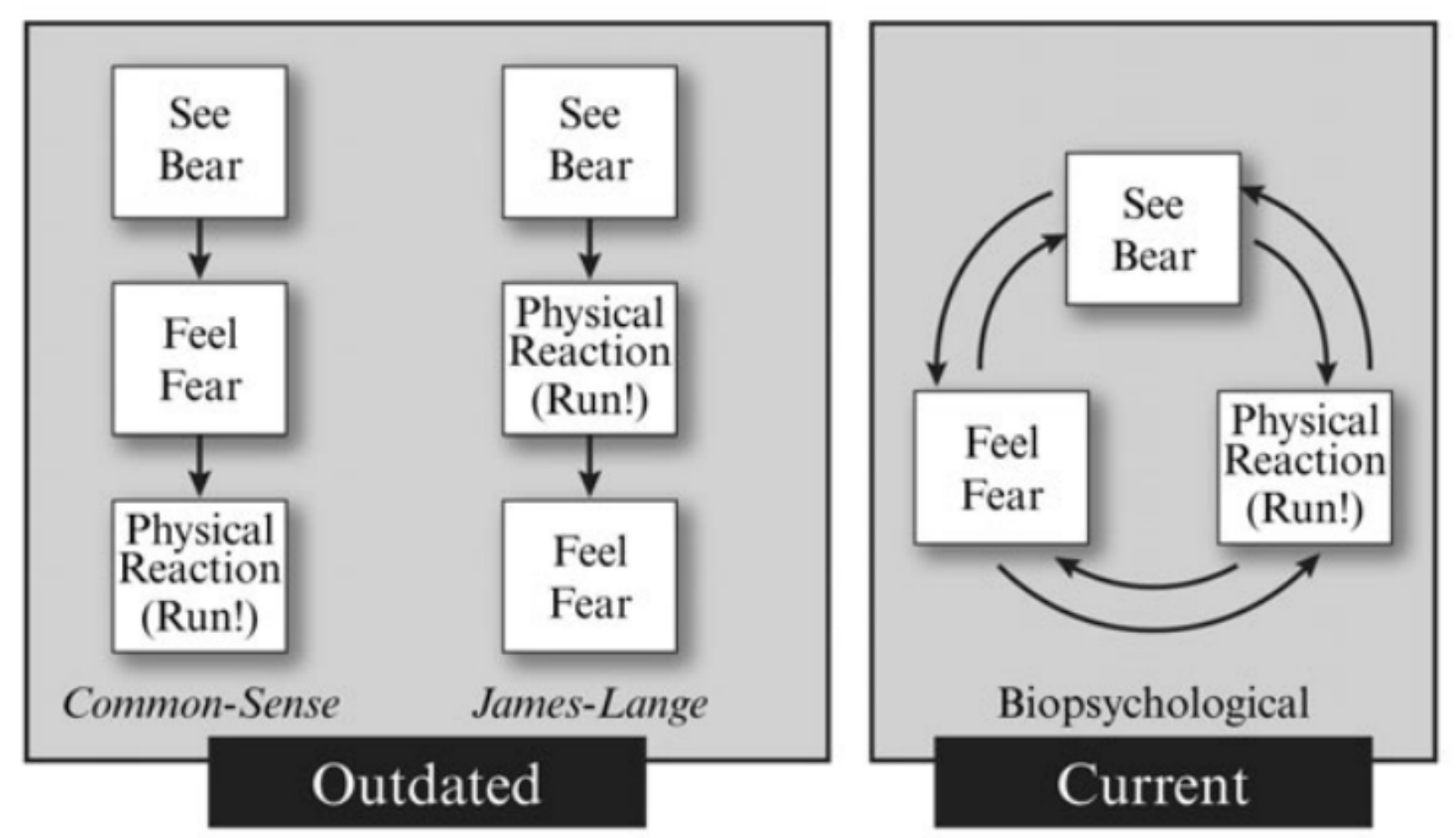


**Figure 7:** A modern theory of emotion

# Game:Player - Emotions and Feelings

## Emotions and Feelings

The process looks a little like this.

1. Something worth feeling comes up—present or remembered.
2. Signals run between emotion systems and conscious systems (cortex).
3. The emotion system generates responses.
4. The cortex is using explicit memories to recognize and understand.
5. The cortex uses information from 3 and 4 to make choices.

# Game: Player - Emotions and Feelings

## Emotions and Feelings

- Emotion systems are quick and often accurate (the subject of the book Blink), but the cortex isn't just along for the ride.
- People spend a good part of their lives unaware of the emotions that they are hav- ing. And when they do feel something, they make sense of it by referring to the context of the situation they are in.
- Players have preferences, feelings they like to have during entertainment, and feelings they do not like.
- Not everyone enjoys hunting and gathering. A designer needs to understand the audience that will be playing the game.
- Emotions are not just for entertainment. Emotions are also covering our goals and everything we care about.

# Game: Player - Thinking Is Feeling

## Thinking Is Feeling

- From antiquity comes a common belief about our minds: one part rational, moral, and recently evolved; one part irrational, reckless, and rooted in the primitive parts of the brain.
- Much of our thinking and calculating, that stuff that most people feel like they have a firm cognitive grip on, is actually leaping up from emotional systems that have channeled the answer to us before we were hardly aware of the question.
- we need the brain's emotional systems to let us know when the "right" answer has been reached. It feels good when we think we have the right answer.

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- **Why do we play games again? (We play because it feels good!)**

# Game: Player - Working Memory

## Working Memory

- ***Working memory***, or short-term memory, is one of our most important cognitive systems.
- It allows us to keep a limited amount of information, roughly $7 \pm 2$ items at any one time, for a few seconds, while other portions perform computations on it.
- When a new task is begun, the old information is bumped out to make room, and if we aren't done with the first, too bad.
- Keep the demand on your player's lower range of memory retention if you want them to remember. Higher if you want them to forget.
- Any professional dealing with the abilities and capacities of others must respect both of these precious capacities; don't squander or abuse them. As
- As a designer, you must balance the decisions and choices you ask of your players at any given moment so as not to frustrate them.
- This includes overwhelming them with information or requiring that their attention be spread over too many areas at the same time.

# Game: Player - Attention

## Attention

- A boy and a girl are talking and a host comes and interrupts.
- That is **selective attention (attention)**, the process of focusing; tuning in on things you care about and out on things you don't.
- it's how we turn our focus on things that seem to matter, allowing us to effectively prioritize goals.
- The most important studies of attention conducted in the 1950s produced several findings:
  - **Limited capacity:** Identifying both messages at once is difficult.
  - **Conditions for attention:** One message can be identified and the other ignored if the messages had different properties (pitch, location, etc.).
  - **Consequences of selection:** Listening to one message while ignoring the other resulted in only the crudest recollection of the ignored message.

# Game: Player - Psychological Quirks

## Psychological Quirks

- There are a number of thinking and feeling oddities that influence decision making and emotional evaluations.
- Sometimes there are specific circumstances that must be at work, but other biases are in full effect regardless of the situation.

## Psychological Quirks: Framing Challenges

- Put one way, a problem is easy.
- Put another way, our brain can have trouble under- standing the context of the question, failing to find a good strategy for reasoning.
- Hence, the way a puzzle is presented matters.

# Game: Player - Psychological Quirks

## Psychological Quirks: Conditioning

- Conditioning is a type of learning through association or reinforcement.
- The best known of these is classical conditioning. In classical conditioning, one stimulus that does not elicit a particular response, naturally, is paired with another that does until the subject learns to respond to both in the same manner.
- Operant conditioning describes learning where a behavior is encouraged or dis- couraged by its consequences.
- Positive reinforcement rewards a behavior (the operant) with a positive outcome, making that behavior more likely.
- In negative reinforcement, the behavior is encouraged by the threat of a bad outcome should the subject choose to stop the actions.

# Game: Player - Psychological Quirks

## Psychological Quirks: Aiming at Audiences

- Your audience is a set of people—from none to everyone—with enough interest in your game to give it some attention.
- Increasing that number of people is a complex and uncertain problem, but there is a lot you can do to help improve your chances.
- The basics of this approach are simple: don't try to please everybody, because it is nearly impossible for everyone to like your game.
- Stype of Approach:
  1. Identify groups to aim for—your target audiences.
  2. Model their preferences.
  3. Create a list of aesthetic goals informed by the model.
  4. Use the model for guidance in design.

# Thank You