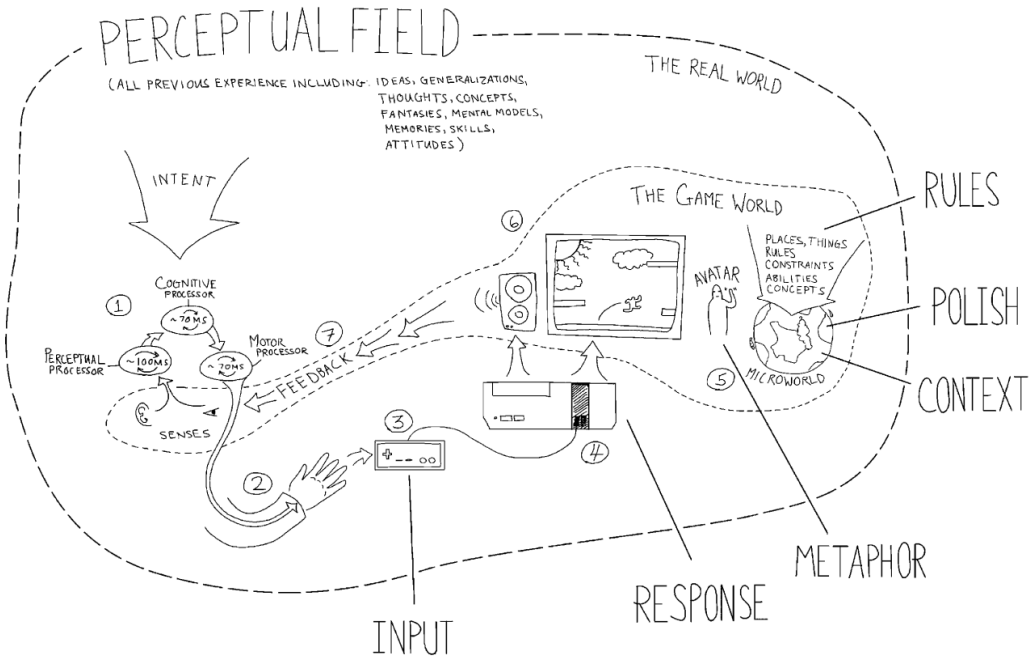
Lecture4 Game Feel Model of Interactivity

1. The Game Feel Model

The model of interactivity brings together all the elements of the the gamer, the game and the world around him or her.



The Human Processor

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- Stimulus comes in through the eyes, ears, fingers and proprioceptive scenes. It is **perceived at a cycle time** between 50 and 200ms
- If two stimuli are perceived within the same perceptual cycle, they appear **fused**, as animation, moving character
- If an action passes out through the motor processor and the response is perceived in the same perceptual frame, there is a strong bias toward **experiencing action and response as causal**
- If this is an ongoing process process, where perception, action and contemplation of the same object happen in rapid succession over and over again, the experience is one of control fusion—through my actions, **I feel I am controlling something external to me**
- When this process of ongoing control is able to flow uninterrupted and the intent being served is more complicated than a single, simple action then we have a **correction cycle**, which happens around 240ms and which is, at its core, **the experience of game feel**
- As this process is running, the **perceptual field is in the background coloring**, ordering and assigning meaning to all new experiences

- As soon as the experience happens, it is **incorporated into the perceptual field**, expanding it. Skills are built, memories are formed, life is lived

Muscles

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- The impulses from the human processor flow out into the real world
- The muscles of the hand execute the orders handed down by the **motor process**, which has in turn been directed by the **cognitive process**
- The hand provides tactile and proprioceptive feedback to the **perceptual processor**

Input Devices

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- The input device is the player's organ of expression to the computer
- All intent passes through the filter of the input device before it can be interpreted by the system and used to update the state of the computer's model of the game's reality
- The player has a particular intent at a given moment in time, and he or she expresses that intent to the system via the input device

The Computer

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- It accepts input at a certain rate, thinks about it for a certain amount of time, and then responds, sending signals to its output devices
- The response needs to happen **quickly enough** for the player to perceive the response as **instantaneous**—within one perceptual cycle (as little as 50ms) of receiving input from the player
- For game feel to occur uninterrupted, input from the player's muscles needs to travel through the controller, be processed and come back as changes in pixels and sounds **before one entire cycle of the player's perceptual processor has finished**
- The computer needs to perform its **half of the cycle faster than the player can perceive**

The Game World

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- For the player
  - the output devices are a window into the game world
  - the avatar acts as a proxy within that world
- The player perceives the game world actively, through the " body "of the avatar

- Experiencing game feel is feeling out the game world, making additional distinctions, and learning skills, concepts, and generalizations that make coping with the unique world easier
- A game world **slots itself into the player's action → perception → cognition cycle**, replacing the physical world's roles of **accepting input and returning feedback**
- A game world is **simpler, easier to understand**, and has **clear, finite goals**. This makes **learning game skills faster, easier to measure**, and, in many ways, **more appealing than real-world skills**

Output Devices

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- a monitor, speakers, controller's rumble motors, haptic feedback device and so on
- the player's window into the game world

The Scenes

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- The eyes, ears and hands (both tactile and proprioceptive senses) perceive the new, **changed state** of the game's reality and pass them along to the perceptual processor

The Player's Intent

Intent in a game world is designed by a game's creator

Part of game design is crafting goals, implicit or explicit, to motivate action in game worlds

A game world's logic is simple, easy to understand, and provides clear incentives, rewards and feedback for effort invested

It's safer than the chaotic and arbitrary nature of everyday life.

2. Summary

The game feel model

- **The human processor**: where perception and thinking happen and motor instructions are created
- **Muscles**: The motor instructions are executed as muscle movements
- **Input device**: The muscle movements are translated into a language the computer understands
- **The computer**: Where all processing happens, including integration of input with the current state of the game world
- **The game world**: The computer's internal model of the game's reality
- **Output devices**: The updated game state is output into a form the player can understand

- **Senses**: The player perceives the updated state through sights, sounds, touch, and proprioception