WAXHEART

GAME DESIGN DOCUMENT

Public Facing | Version 0.3 | Last Updated: May 19th, 2022

Info Hub	**Narrative Design Doc**	**Project Schedule**	**Demo Build** Password: *WaxHeart*

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Executive Summary

Wax Heart is a commercial-indie adventure game where you play as a wax boy with a lantern for a heart, journeying through a dark, ruined world in search of his lost memory. It's an atmospheric horror 3D platformer set in a sunless world filled with monsters and mysteries. The light from your lantern-heart helps you find your way through the darkness, but also alerts monsters of your presence.

Player Experience

Wax Heart takes you on an unforgettable journey - filled with moments of pure terror, sublime beauty, and puzzling mystery. Explore a dark, dying world full of rich details that capture your imagination, and slowly uncover the horrible truth about the world's fate, and the role you play in it.

USPs

- **A horror 3D platformer** - classic 3D platformer controls in an atmospheric horror setting.
- **You are the torch** - Play as a character who is also your primary lightsource. Light your own path, and keep the flame alive.
- **A rich world hiding in the dark** - Uncover the story of the wax-people and their fate as you explore over 5 unique areas.

Reference Games

- *INSIDE* & *LIMBO* by PlayDead
- *Journey* by ThatGameCompany
- *Little Nightmares* series by Tarsier Studios
- *Hollow Knight* by Team Cherry
- *Abzû* by Giant Squid Studios

Target Platforms

Initial release will support **Windows PC** and **Mac**, distributed on **Steam** and **Itch.io**.
We will support both *gamepad* and *keyboard & mouse* control schemes.

Game Mechanics Overview

Player Controls

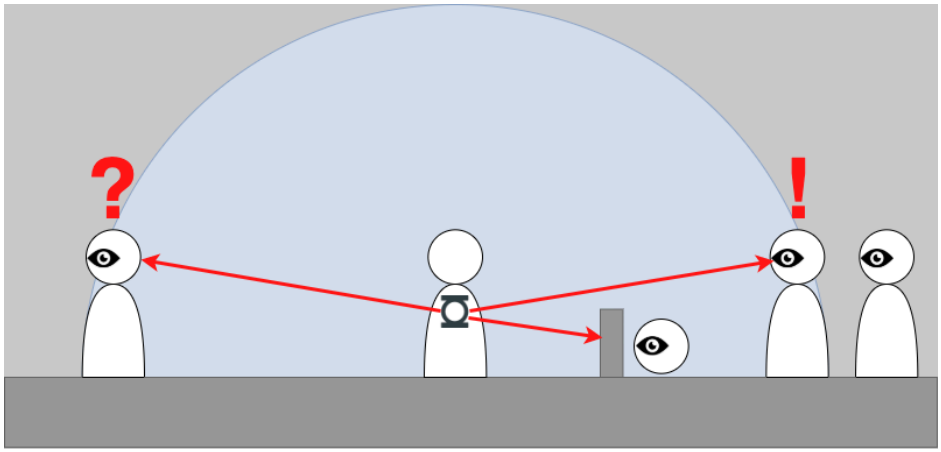
The player controls similarly to most other 3D platformers, with a few key differences. The player only has one jump, and moves at a relatively slower lateral speed than other platformer games. This choice is intended to play into the game's stealth mechanics - requiring the player to move carefully and methodically, rather than jumping around everywhere.

- 3D Platformer Movement
  - Single jump.
  - Accelerate over time *(no sprinting)*
  - Climbing
    - Automatically grab ledges, ladders, and pipes, and climb up them.
- Interaction
  - Pick-up/drop small objects
  - Push/pull large objects
  - Pull levers / Press buttons
- Death & Respawning
  - When the player dies, they respawn relatively close by. Typically, the checkpoints will be at the start of dangerous challenges.
  - Death is gruesome and dramatic. This sells the world's hostility, and makes overcoming challenges all the more satisfying.

Light Radius

The unique, core gameplay mechanic is the ability to control the intensity of the flame in your chest.
The intensity of the flame changes your **Light Radius**. Monsters and objects in the environment react to being within your light radius.

- "Heating Up" - Exert your will to burn bright and hot.
  - This lets you see more of the environment, but also makes it more likely for monsters to detect you.
- "Dim down" - Hold your breath to dim the flame.
  - This allows you to hide yourself from monsters, but only for a short period of time. This naturally creates moments of high-tension, and can be used in conjunction with the puzzle and narrative design to create many memorable, thrilling moments.



Monsters & Stealth Systems

The monsters are threats that you want to avoid; they're the game's primary obstacles. If they detect you, they chase after you until they catch you, or you escape and hide long enough for them to lose interest. They are significantly faster than you, and escape is rarely an option.

(See specific monster designs for more details.)

Collectibles & Doors

Radiant Oils are the game's primary collectible resource. Each zone has a variety of oils the player can find, each requiring the player to complete some sort of challenge or puzzle.

Each *wax-sealed door* displays a number on its surface representing the required number of *Radiant Oils* you need to collect to open it. When the player has enough, they can interact with it, putting their hands on the surface, and heating their lantern. The heat melts the wax, and opens the door.
(**NOTE:** *Wax-Sealed Doors* are now only an abstract - each "door" could be skinned as something else.)

Directed Third Person Camera

By default, the in-game camera is *directed* - it adapts to the game's context to artfully frame the scene. Entering a new room, for example, will trigger the camera to move to frame the content of the room. The player can then adjust the position and angle of the camera through input, using it like a traditional third-person camera. The intent here is to enable cinematic composition, while also enabling free-exploration.

Narrative Systems

Cinematic Cutscenes

The first and final scenes will be shown via pre-rendered cinematic cutscenes.

Story Sequences

Story sequences are in-game story events where the player maintains control of their character during a significant story moment. During these scenes, the player's control of the camera is reduced, and the camera is artfully framed to bring attention to the subject of the scene.

Set Pieces (Environmental Storytelling)

Much of the world-building and non-essential lore can be gleaned through set pieces. These set pieces can be the subject of different in-game challenges, or props that are presented to the player as a detail in the environment.

(See the Narrative Design Document for more details.)

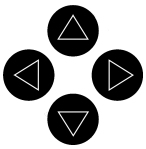
In-Depth Game Mechanics

Control Scheme

Supports *Keyboard & Mouse*, and *Gamepad*.

Default control scheme:

Alias	**Keyboard & Mouse**	**Gamepad**	**Action**	
[Jump Button]	Space	South Btn	Jump	Gamepad buttons are denoted by North/South/East/West:
[Interact Button]	E	East Btn	Interact	
[Dim Button]	Ctrl / Cmd	Right Trigger	Dim	

[Heat Button]	Shift	Left Trigger	Heat-up	
[Move Axes]	WASD, Arrow Keys	Right Stick	Move, or use current interactable	
[Look Axes]	Mouse	Left Stick	Move the player camera	

Control Remapper

Controls should be remappable, with disability support in mind.

Accessibility Options

- Remap the same action to multiple buttons.
- Remap multiple actions to one button.
- “Single stick mode” where you can hold a button to swap one gamepad control stick to the other.

Character Control

The player moves around in 3D space using traditional platforming controls.

3D Platformer Movement

- Single jump.
- Accelerate over time *(no sprinting)*
- Climbing
    - Automatically grab ledges, ladders, and pipes, and climb up them.

High-level Notes:

- Should feel like *LIMBO* or *INSIDE* translated into 3D.
- Camera control based on *Super Mario Odyssey*.

Clambering

LIMBO Clambering





- If below the top of the player's head, grab the ledge and pull yourself up.
- If below waist, step up to the surface.

Collectibles

The player collects *Radiant Oil*. Oil can be collected multiple ways - Lanterns & Corpses.

Lanterns

Lanterns can hang from lamp-posts, be propped up on poles, or be loosely placed in the environment.

- Hanged lanterns move physically on a joint.

Lanterns are collected when the player touches them

- Player IK looks at and reaches out to the lantern as they approach.
- On touch, the it plays effects

Corpses

Corpses with radiant oil inside of them. They also trigger when the player touches them.

Interactables

Many objects in the environment can be interacted with

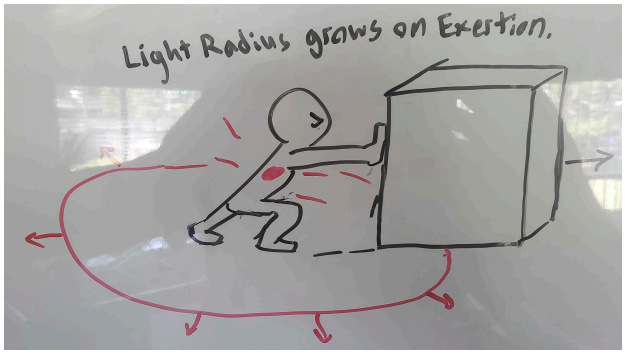
Ladders

- Players can start climbing ladders by either moving directly into them, or by interacting within a certain range.
- Player can jump off ladders

Push/Pull Blocks

(WIP)

Maybe grow on exertion?



Pickups
Some objects can be picked up and dropped by the player. For example, a key that can be taken to a door to unlock it.

Pressure Plates
Pressure plates can be used to trigger devices.

Pressure Plates can be weighted down by:
- Characters
    - The Player
    - Monsters
- Physical objects
    - Boxes
    - Pick-Ups
    - Any Rigidbody prop

Technical Requirements:
- Plates should be able to send signals to other systems when they're pressed and released.
- Plates should react physically when weight is on top of them; Move up and down (Spring Joint?)
- The amount of weight needed to press the button should be configurable.

Hazards
The player can be killed by environmental hazards.
Death is immediate and brutal.

Pit-falls
- Spikes?
- Water?
- Fall into the void?

Death-on-touch surfaces
For "Death Touch Surfaces", take a look at the "HOTEL" neon sign scene in LIMBO.

- Fire? Hot Metal? Things that melt you?
- Electricity???
- Ichor corruption?
    - Living surface made of hands that grabs you and pulls you down?

Crushers
- Piston machines?

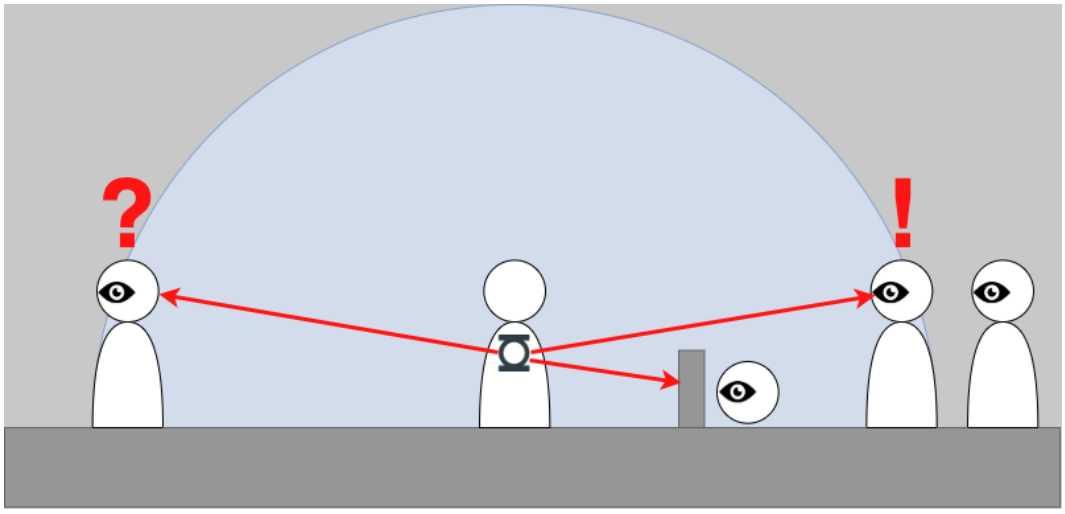
- Falling objects?

Lantern Control

The player can control their lantern, changing how much heat & light it gives off.

Light Radius System

Monsters and some props will be triggered when their light enters a light radius.



Dimming

The player can *hold their breath* to shrink their light radius for a short period of time. If they hold it for too long, they have to take a breath, and stun themselves.
The time you have left before you need to breathe again is indicated by a vignette screen-effect, and an audio queue.

Heating Up

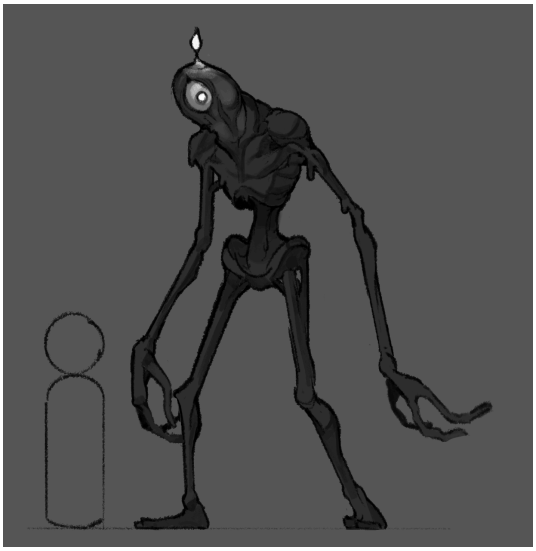
The player can heat-up to grow their light radius. This can be used to see more of the environment, and trigger objects that react to light.
In specific situations, the player can heat-up to melt obstacles.

Monsters

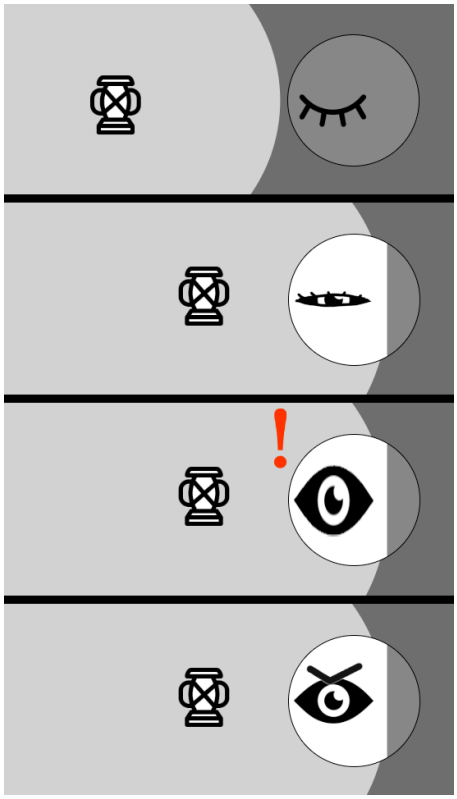
General Monster Rules

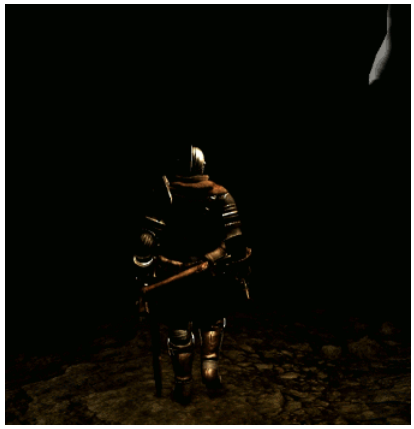
- All monsters are dormant until triggered by a light source.
- Cannot climb ladders.

Horrors



1. Tall, extremely corrupted monsters.
2. When triggered, they will wake up and run at you to kill and eat you.
3. Candle on head, visible from a distance.
    - Lights up when triggered
    - Does NOT emit a light radius (maybe?)
4. You cannot easily outrun them.
    - Get somewhere out of reach to get away
5. If the player becomes out of reach, they will prowl for a few moments before returning to their spot or patrol path.
    - Will go dormant again.





Shamblers

(WIP)

- Corrupted Candle People, not completely warped by ichor.
    - Around the same height as the player.
    - Basically zombies with melting faces.
- Slow, cannot easily catch the player.
- They have a small candle on their head that's very dim/ faded. It can be seen from a distance.
    - This does not emit a **Light Radius**.
- They can be triggered by any light source. When triggered, they will light up, and begin moving towards whatever triggered them.
    - Their candle will begin emitting their own **light radius**, similar to the player.
        - Smaller radius, different color?

    - This can be a player, another monster, or a prop.
    - If its the player, they will lunge at them from a distance.
    - After a period of time not in the light of another light source, they will go back to a dormant state, and stop moving.
- Attacking:
    - Slow telegraphed wind-up, then a jumping lunge.
    - Will jump onto player, grapple them, and bite into them.
        - The player is effectively dead the moment they are grappled.
            - Prototype: Lunge just kills on the spot. Don't worry about grappled state.
- Attacking other monsters
    - The current design is that they will NOT lunge at other Shamblers.
        - They will move up to each other, just bump into each other, then go dormant after a period of time.
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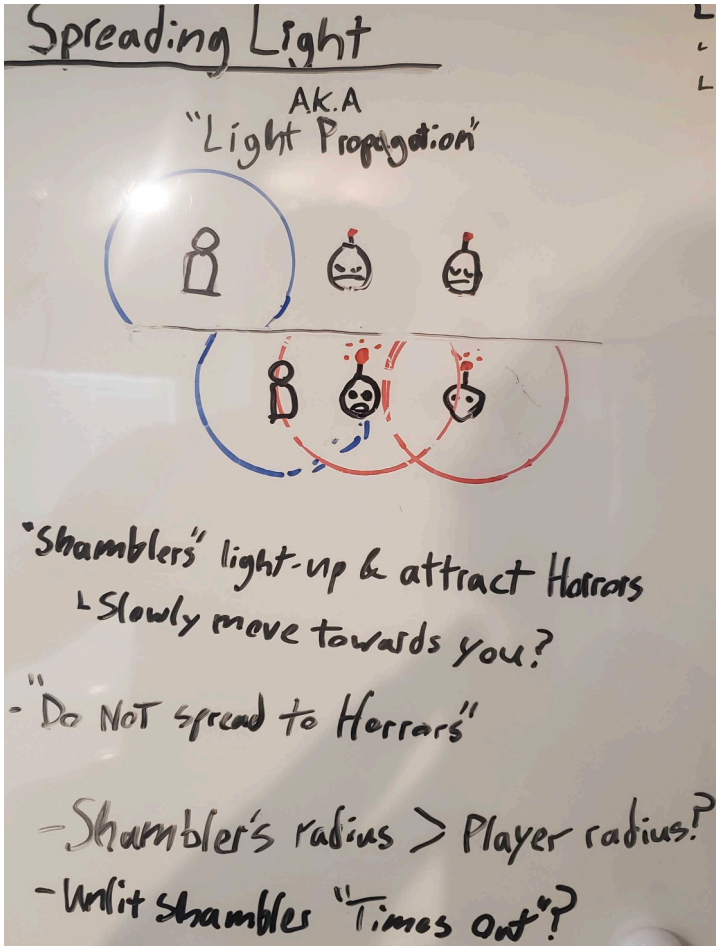
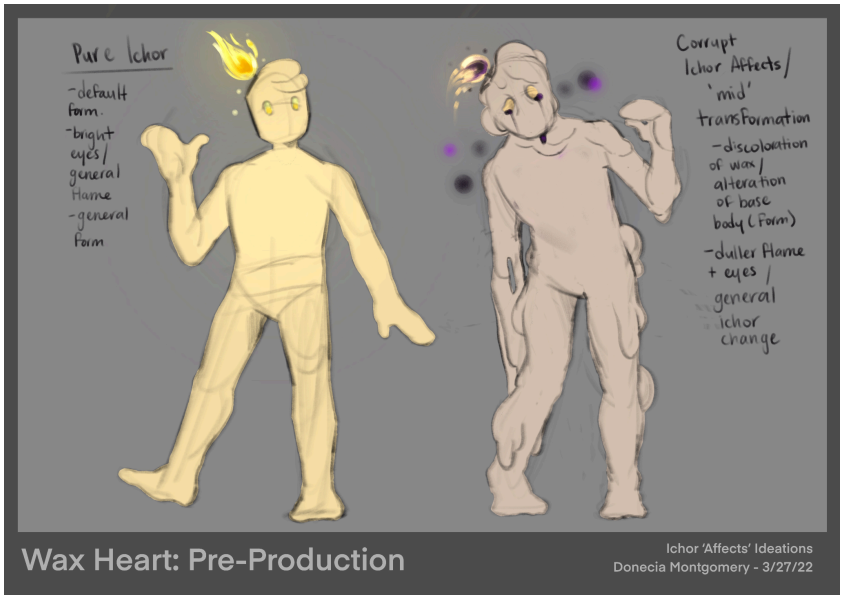




Cinematic Camera System

Directed Third Person Camera

By default, the in-game camera is directed - it adapts to the game's context to artfully frame the scene. Entering a new room, for example, will trigger the camera to move to frame the content of the room. The player can then adjust the position and angle of the camera through input, using it like a traditional third-person camera. The intent here is to enable cinematic composition, while also enabling free-exploration.

Camera State Config:

1. Cinemachine Virtual Camera
    - Position, look target, behavior, etc.
2. Post-Processing Config
3. Fog & Mist Post-Processing Config

Camera Rig

Default camera rig behavior.

- Three different basic camera states based on player control and context:
    - Default State
    - Dimmed State
    - “Heat-Up” State
- Each of these have their own camera state config.
    - Orbital camera controlled by player. (Different config based on state?)
    - Post processing config
    - Fog & Mist config

Technical Notes:

- These states should probably work like SceneCameraVolumes below. (Perhaps at lowest priority?)

The camera rig is the default behavior, and control can be seized by SceneCameraVolumes.

Scene Camera Volumes

Trigger volumes that change cinematic behavior and configuration.

In order to enforce control over each “scene” (rooms, puzzle areas, cinematic moments, etc.), we layer trigger volumes that change camera config and behavior.

Each volume controls the current Camera State Config:

- Cinematic Virtual Camera
    - Position, look target, behavior, etc.
- Post-Processing Config
- Fog & Mist Post-Processing Config

!!! NOTE: These might need to set “Camera State” config for ***ALL Camera Rig States.*** Further research is needed.

Technical Design Spec

- ★ Should work similarly to Cinemachine’s virtual camera priority systems.
- ★ Separate the state control mechanism from the triggering mechanism.
    - We want to activate a SceneCameraVolume via physics trigger, or through code from another event.
- ★ Volumes should be layerable; I should be able to place one inside of another.

Pseudo-Code

On Trigger:

- ➢ On Player Enter:
    - Add to list of active SceneCameraVolumes
    - (In Manager) If highest priority:
        - Set as active camera volume.
        - Blend to active volume’s config/behavior:
            - Cinemachine Virtual Camera (if using one)
            - Post Processing Config (if overriding)

            - Fog & Mist Config (if overriding)
- ➢ On Player Exit:
    - Remove from list of active SceneCameraVolumes
    - (In Manager) If highest priority volume changes:
        - Blend to next highest priority SceneCameraVolume.
            - Default camera rig if no others.

In Manager:

- ➢ OnChangeActiveSceneCameraVolume(SceneCameraVolume newVolume, <context params>)
    - Blend to active volume's config/behavior:
        - Cinemachine Virtual Camera (if using one)
        - Post Processing Config (if overriding)
        - Fog & Mist Config (if overriding)
    -
    - Pass the context in which this was triggered. This will be really useful, architecturally.
        - Other volume was exited?
        - New volume entered?
        - Hard set via code?

SceneCameraVolume config options:

- Volume could only change one config/behavior, or change all of them.
    - E.g: Only override cinemachine cam.
- Trigger only once vs every time.
- Allow the player to take back control of the camera by moving the camera control stick.
    - A timer between when the trigger activates, and when the player can take control back.
- Option to use previous volume's configurations?
- Control over transitions between Post-Processing configs:
    - Blend speed, etc.

NOTES:

- Post-Process config state blending exists already for both Unity PP Stack and Fog & Mist.
- You might be able to base this off the Cinemachine Post Processing system:
  https://docs.unity3d.com/Packages/com.unity.cinemachine@2.3/manual/CinemachinePostProcessing.html
  https://docs.unity3d.com/Packages/com.unity.cinemachine@2.7/manual/CinemachinePostProcessing.html
- If the camera rig state is a huge issue, we might be able to apply *relative deltas* from a default for all of them.
    - E.g: "Dimmed is always 50% less blue and has a vignette."

Gameplay Design Notes

Core Design Pillars

Core

"A journey through a dark world."

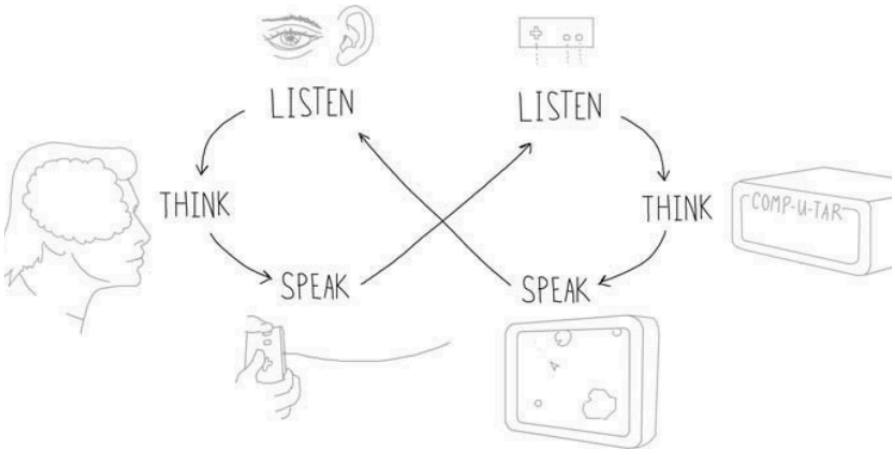
Design Pillars:

1. Immersive Game Feel
2. High quality visuals
3. Evocative story

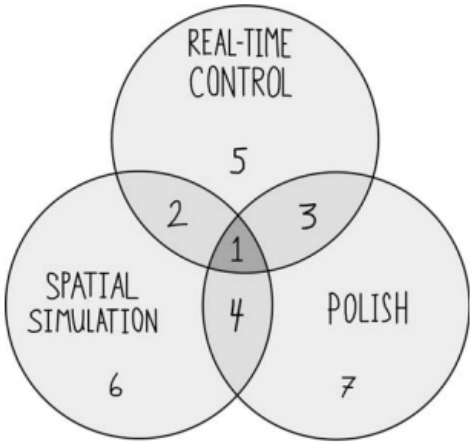
Game Feel

"Real-time control of virtual objects in a simulated space, with interactions emphasized by [juice]."

In-depth explanation: Defining Game Feel - Steve Swink
Presentation PPT: Defining Game Feel



URE 1.3 **The conversation between human and computer.**



4.1 Types of game feel: we want to put every game somewhere on the diagram.

Creating Game Feel

1. Real-Time Control
2. Spatial Simulation
3. Polish

Experiences of Game Feel

1. The Aesthetic Sensation of Control
2. The Pleasure of Mastering a Skill
3. Extension of the Senses
4. Extension of Identity
5. Interaction with a Unique Physical Reality

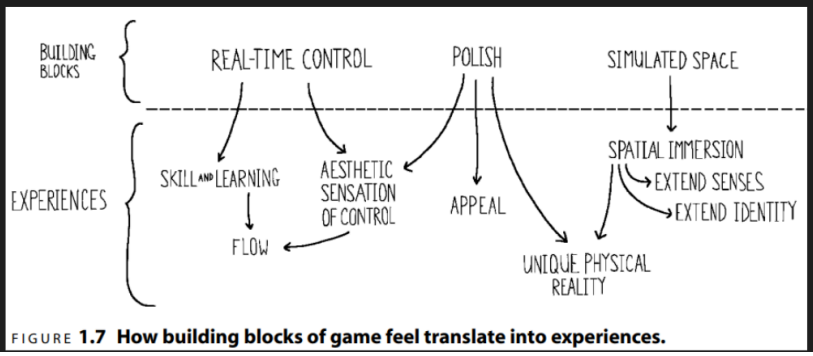


FIGURE 1.7 **How building blocks of game feel translate into experiences.**

Thesis Research

RESEARCH QUESTION

How does the experience of “Game Feel” influence the player's interpretation of a game’s narrative?

THESIS STATEMENT

The qualities that give a game “game feel”, as defined by Steve Swink, create a heightened sense of presence and immersion in the player that are imperceptible to passive, spectating audiences. This state of immersion can have a significant influence over the players interpretation of and affect towards the games narrative. With this in mind, game designers can leverage and manipulate the components of “game feel” to create a unique narrative experience that can only be experienced through gameplay.

Goals & Motivation

Moment-to-moment goal: **“Get from point A to point B without dieing.”**

With props, this becomes **“Starting from point A, get PROP from point C to point D, *SO* I can get to point B**.”

Mechanics & Goals

Goal

Get from A to B without dieing. AND get ★.

Rules

- I die when...
  - I'm detected by monsters AND I fail to escape. (safety == C) (C should == B ;)
  - I fall to my death.
    - "Journy + INSIDE" would likely have a lot of "Fall to your Death". → This NEEDS incre Tight & Fair platfo controls! (Embrace This???)
    - AKA: "I fail to platform correctly"
- The environment works against me.
  - Traps & Hazards

Mechanics

I can succeed because I can...

- Move in Space
- Avoid being detected
- I can use the environment to my advantage
  - Block detection
  - Traverse space
    - ↳ Escape monsters
  - Remove Threats

Depth

It's Challenging because...

- I have little time to respond.
- I need to plan/think carefully.
- I need to understand how X works
- I need to know how to react to Y.
- If I {Mechanic}, {Problem} will happen
- I need to execute perfectly
  - + correct order.
  - + quickly

Pay Attention → Need light to see, understand & Plan,

Ideas

- Monsters that
- Environment