the Fisherman

Last Will on Human Sentiments
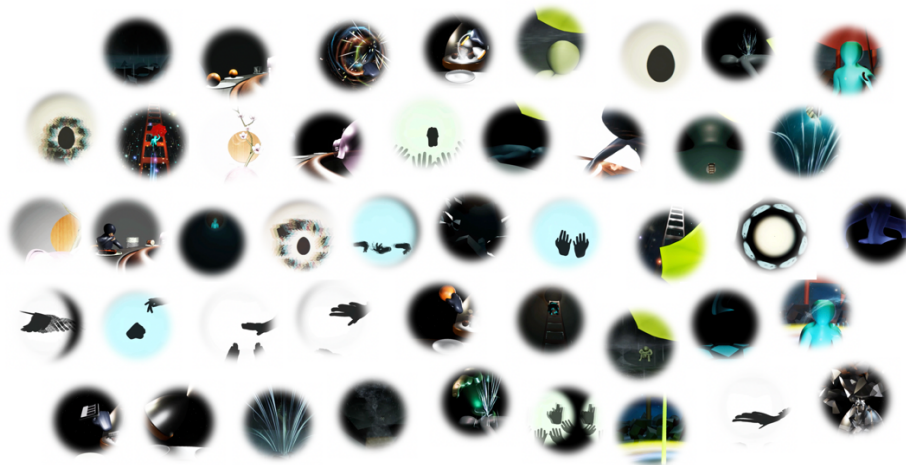
-Designed by Kunwoo Kim-

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What is The Fisherman?

    The Fisherman: Last Will on Human Sentiments is a perspective-driven audiovisual narrative in the medium of virtual reality (VR). The aim of this design is to provide an immersive environment for self-reflection, emotional exploration, and musical interactions.

    The overall narrative of *The Fisherman* is the following. On the vast sea, you fish for objects that remind you of your past perspectives on different human qualities, then deliberate what each meant to you. Fishing each object allows you to enter a scene that aesthetically portrays the perspective it embodies. The fishing takes course shortly before entering your afterlife. It can be the moment when life flashes back in the brink of death, or the time when you are about to enter a significant change in life. Nonetheless, you organize your past by various perspectives, rather than by chronological history.

    The Fisherman currently harbors three scenes: perspective on needs (*My Little Hunger, My Greater Hunger*), perspective on time (*My Fractal Metamorphosis*), and perspective on empathy (*Your Wet Shoes in My Rain*). Each scene consists of a unique environment infused with various kinds of audiovisual interactions, metaphors, and human sentiments. As the narrative progresses, each scene establishes a central musical theme pertinent to the message of each perspective.

    For a full video recording of *The Fisherman*, please visit www.kunwookimm.com

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The Beginning: Why Am I Here?

Narrative

You wake up on a boat surrounded by an endless grey ocean. All you hear is ocean tide breaking onto your boat. There is a fishing rod on your hand, but nothing else. You cast the rod into the ocean and wait. You feel something bite, and reel in. It is an inanimate object. You begin to recall something. A set of staircases appear in the ocean, leading you to submersion.

Mechanism

This scene is both the beginning and the end of *The Fisherman*. It also acts as a bridge between your scenes. Once you fish something, you leave the boat to enter the object's scene. After each scene is finished, you return to the boat to fish more. The ocean represents your internal self. In the beginning, there is nothing but the ocean. Waking up suddenly, you are amnesic to your reason and purpose of being here. Each time you complete a scene, however, an artifact of the scene appears on the surface. As you ponder through your past perspectives, your ocean begins to be filled with memories.

Completing *My Little Hunger, My Great Hunger*

Completing *My Fractal Metamorphosis*

Completing *Your Wet Shoes in My Rain*

Scene #1. My Little Hunger, My Great Hunger

– Human Perspective on Needs –

My Little Hunger, My Great Hunger

The Bushman in the Kalahari Desert talk about the two "hungers". There is the Great Hunger and there is the Little Hunger. The Little Hunger wants food for the belly; but the Great Hunger, the greatest hunger of all, is the hunger for meaning. – Sir Lawrence van der Post

My Little Hunger, My Great Hunger is an environment-oriented audiovisual narrative. It portrays human perspective on needs through the changes in the environment. The scene mainly investigates how Little Hungers transform into Little Hungers with Purpose, and finally into the Great Hunger.

According to Maslow's Hierarchy of Needs, human motivation can be derived from two kinds of needs: deficiency needs and growth needs. Deficiency needs, similar to the Little Hunger described by the Kalahari Desert's Bushman, motivate people when the needs are unmet such as food, safety, warmth, and belonging. On the other hand, Growth needs, perhaps described as the Great Hunger, stem from a desire to develop, improve, grow, and self-actualize.

Then are these two Hungers in the realm of binary or duality? How are they mutually related? Why do some people seek for more deficiency needs even though their needs are already superfluous? Why do some fail to reach the Great Hunger due to unmet Little Hungers? Do we have different capacities to the two Hungers? What is the general direction between the two Hungers? What is a hunger that exists between the two? In what forms do the "foods" exist in human society? How much choices are we given as members of the society? These questions shape the fundamental backbone of the scene, *My Little Hunger, My Great Hunger*.

Part 0. Overview

The various objects in the scene are metaphors that describe the qualities, directionalities, and interplay of different levels of needs. The use of these symbols is the main driving force of the narrative of this scene.

The scene takes place in a **conveyor belt restaurant** because it shares similar concepts to the real-world in terms of free will vs. possible choices. Just like how guests can only choose to eat what is on the conveyor belt, we have the free will of choice, yet the things we can choose are limited. Our free will is often bounded by the choices given by the fulfillment of needs required by our society or the laws of nature. For example, if you desire to pursue college level education, you must pay the tuition. If you desire to stay warm, you need a shelter.

In order to have a change in the pool of choices, we must fulfill the needs often from the bottom of the hierarchy. And it takes time and effort. In this scene, such action takes place in **the kitchen** part of the restaurant, which is portrayed as a cosmos to represent the vastness of external factors influencing our pool of choices. Inside the cosmos, there is an **hourglass**, symbolizing how fulfillment of needs leads to another by time.

In addition, there is a **piggybank** in the center of the conveyor belt. It represents both the capacity and result of fulfilling a need. For example, consuming materialistic needs fills up the piggybank with soil. However, once the soil fills up to the top, excessive consumption does not bring any more change to the piggybank. A piggybank was chosen because a cultural form of basic needs perhaps refers to money. Lastly, there are **human beings**, which are forms of our different desires for needs.

Narrative
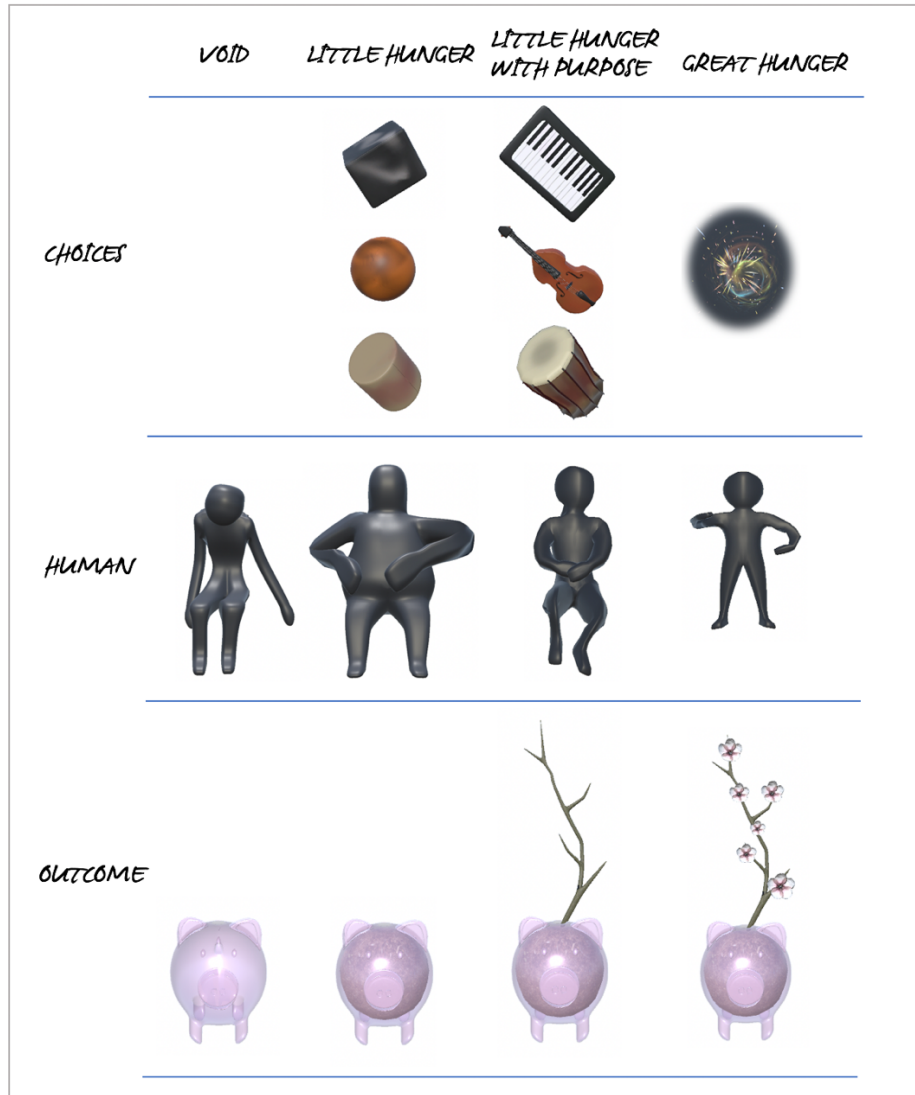
Going through the overall narrative, you climb the hierarchy of needs from Little Hunger to Great Hunger, expressed by the interplay of these environmental factors. The kitchen determines the pool of choices in the current level of the hierarchy of needs. The conveyor belt then carries out the choices. By consuming them, human beings transform into different forms. The fulfillments of the needs are then translated into change in states of the piggybank.

The narrative focuses on the importance of both Little Hunger and the Great Hunger. It does not state which Hunger is better in value. Rather, it focuses on the duality of the two hungers, with the middle ground being the Littler Hunger with Purpose. The central metaphor is

on the piggybank. As the Little Hunger is met, soil fills up inside the piggybank. As the Little Hungers with Purpose are met, a branch grows out of the piggybank. Lastly, when the Great Hunger is fulfilled, flowers bloom from the branch. Just as a flower cannot grow without its branch, and the branch without soil, opportunities to achieve the Great Hunger are often given by the fulfillment of Little Hungers.

Music

Quantization, FM Synthesis, and jazz progressions were mainly used to deliver the musical narrative of the scene. Chuck and Chunity were implemented to precisely clock the beats, to synthesize instruments, and to harmonize the overall music. Chuck also controls the timing of visual effects that correspond to the music.

Music is developed with the progression of the storyline. Fulfilling the basic materialistic needs brings a swing-rhythm pulse to the scene. Acquiring higher needs develop drum loops, bass lines, and rhythmic comping lines to the music. Lastly, fulfillment of self-actualization results in a melodic solo line. FM Synthesis was used to create timbres of the bass, rhythmic harmony, and the melody. Different modulation indices and ADSR envelopes were implemented to diversify the timbres of the instruments.

Jazz with a specific chord progression was chosen as the main genre of music, since jazz shares similarities to the narrative. It offers creative freedom for an ensemble of masterful musical aesthetics, but basic needs of rhythm and harmony often have to be met. The following score is the overall harmonic progression.
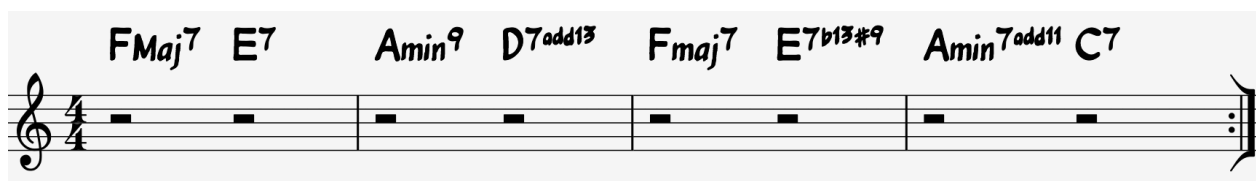
Visual Art

Blender was used to handcraft 3D models, animations, textures, and materials. Dynamic objects in the scene such as human characters were rigged using armatures and bones. Action

editor in Blender was applied to change the positions and rotations of the bones to deform the mesh and to save them as animation files. Shapeshifting objects such as soil, branch, and flowers were animated using shape keys. Below is an example of a rigged adult character, and its dope summary on the action of eating.
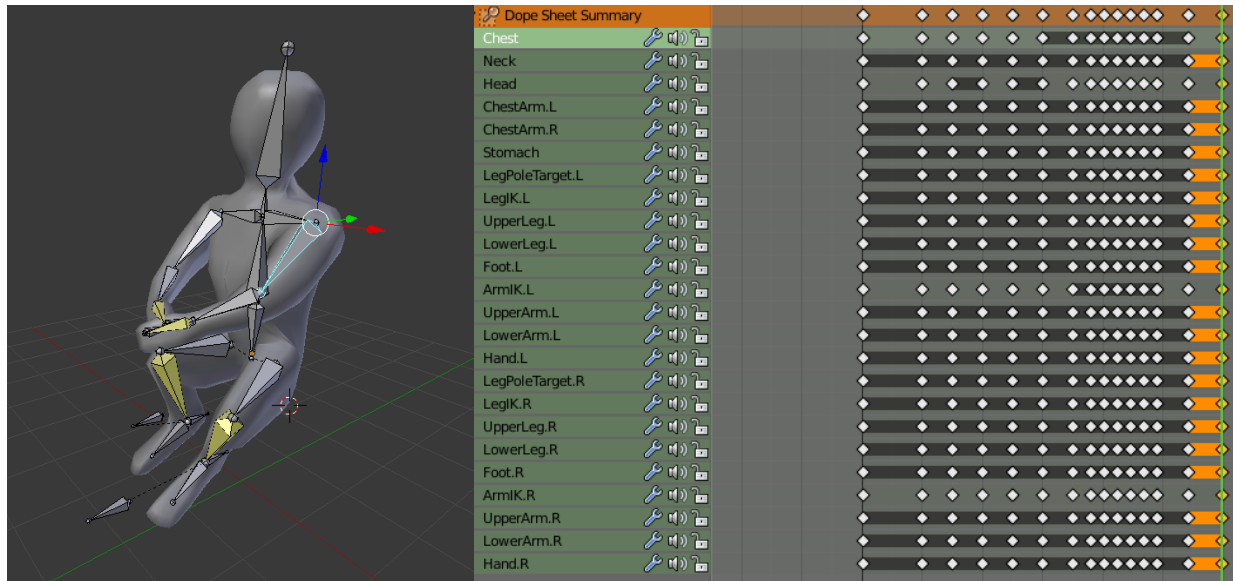

For complicated object textures and materials such as a wooden branch and metallic tables, texture maps were purchased from poliigon.com, and applied them using the node editor in Blender. Less complicated object textures such as the double bass, or the drum were hand-painted using UV mapping, texture paint, and image editor in Blender. Below is a node editor for creating a texture for a branch object.
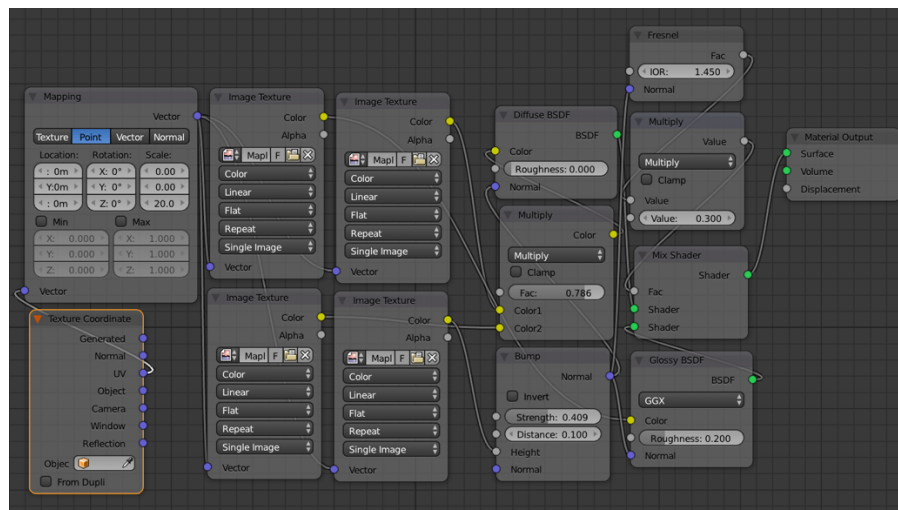
Part 1.1. Little Hunger: The Void
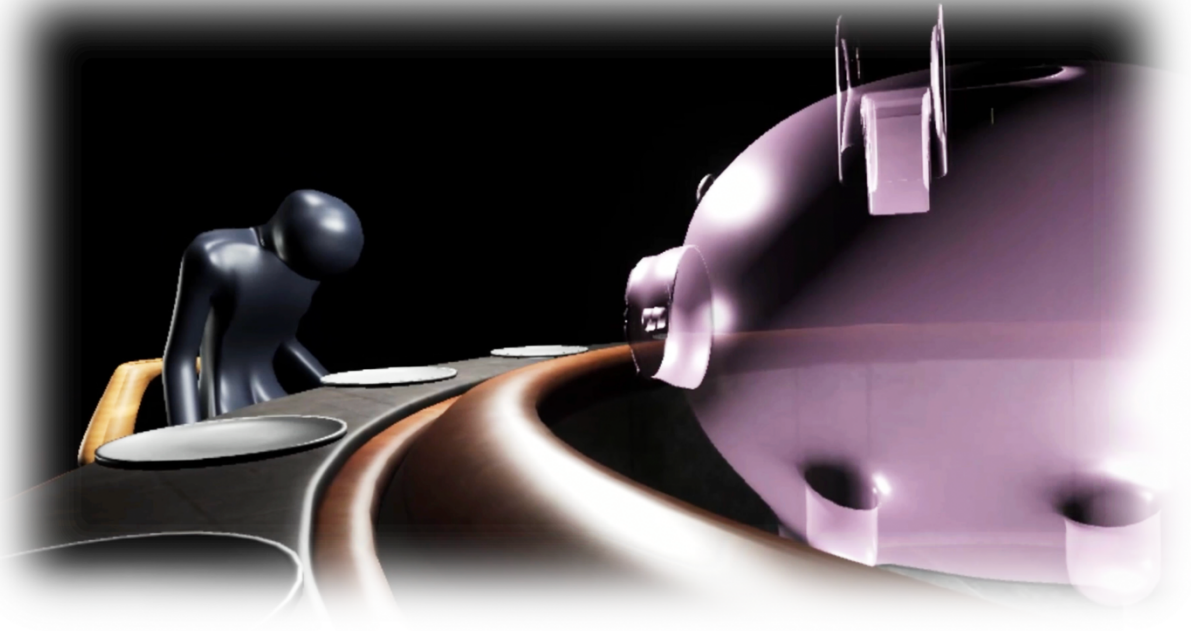
Narrative

     The scene starts with you, the player, sitting in front of a transparent piggybank and empty food plates revolving on the conveyor belt. After a few moments, you are transferred on one of the empty plates, revealing a malnourished human being on the seat. This is the time and place when all needs are deficient to a human being, and worse, no choices are given to fulfill the needs.

Music

     Two kinds of sound exist: pulses of noise and a bass drone. The pulses occur in random timings while the bass drone varies in loudness. In ChucK, a random factor is assigned to the duration of silence between the pulses and a low frequency oscillator to the bass drone. These sounds add nuance to the emptiness of the environment. These sounds are spatialized in Unity so that they exist mostly inside the restaurant area.

Part 1.2. The Little Hunger –Kitchen
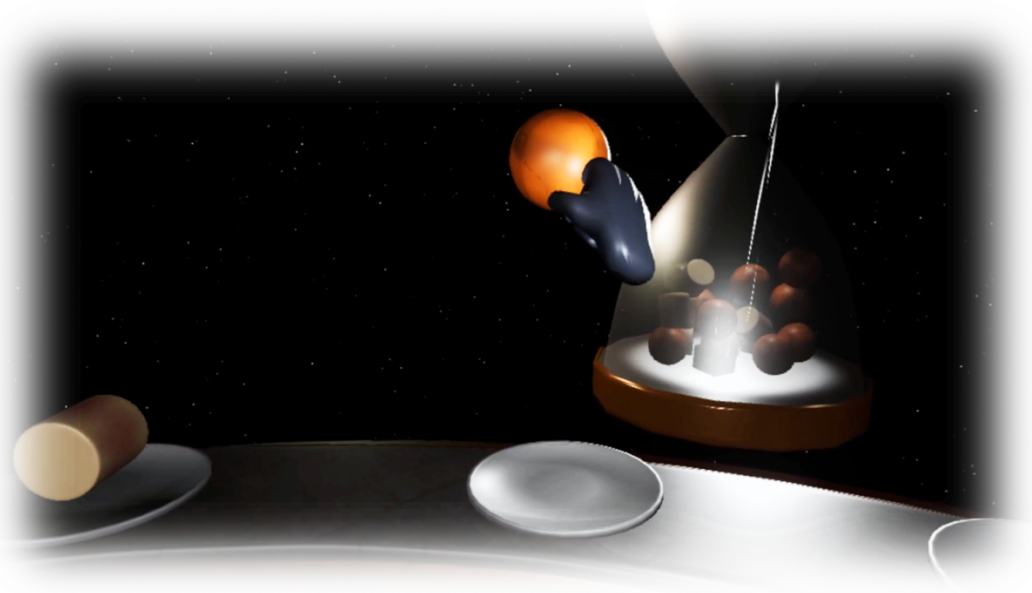
Narrative

The conveyor belt takes you to the kitchen and the hourglass is revealed for the first time. Soon, you exit from the conveyor belt and faces the hourglass inside the revolving belt. The hourglass produces food components that refer to the basic needs: consumable materialistic needs. These are in basic geometric shapes, representing its simplistic, yet essential nature for human needs.

You then grab each food and place them on the empty plates. This interactive component represents our action towards acquiring the needs. After a sufficient number of foods has been placed on the plates, you are again placed on one of the plates of the conveyor belt to return to the restaurant.

Music

Synthesized sounds of Rhodey in the Unit Generator are presented in a slow rhythmic ascension in perfect fifths. The root pitch begins anywhere on a given continuous frequency range rather than discrete note range. The tranquil tonal progression and its freedom from distinct Western tones bring nuance to the cosmic environment.

Part 1.3. The Little Hunger –Restaurant

Narrative

The malnourished human being is now transformed into a glutton, symbolizing a part of human self that only aspires for materialistic needs. Each time the glutton edaciously intakes each food, soil starts to fill up inside the piggybank. Even after the piggybank is completely filled-up, the glutton does not stop eating.

Music

As the glutton continues to consume food, the chaotic pulses and bass drones find order. The random factor that makes pulse timings irregular is slowly diminished to create a 120bpm swing-rhythm pulse. The bass drones gradually fade out as well. A master clock of a ChucK instance is created to control the beats. This portrays how basic needs form stability on which the Great Hunger can be established upon.

The sound effects from the glutton and the growth of the soil are matched to their animations. The glutton's eating motions and handwaving motions trigger instruments of the Shakers Unit Generator. The growth of the soil triggers pitch and gain interpolations of the BlowBottle Unit Generator.

Part 2.1 The Little Hunger with Purpose –Kitchen
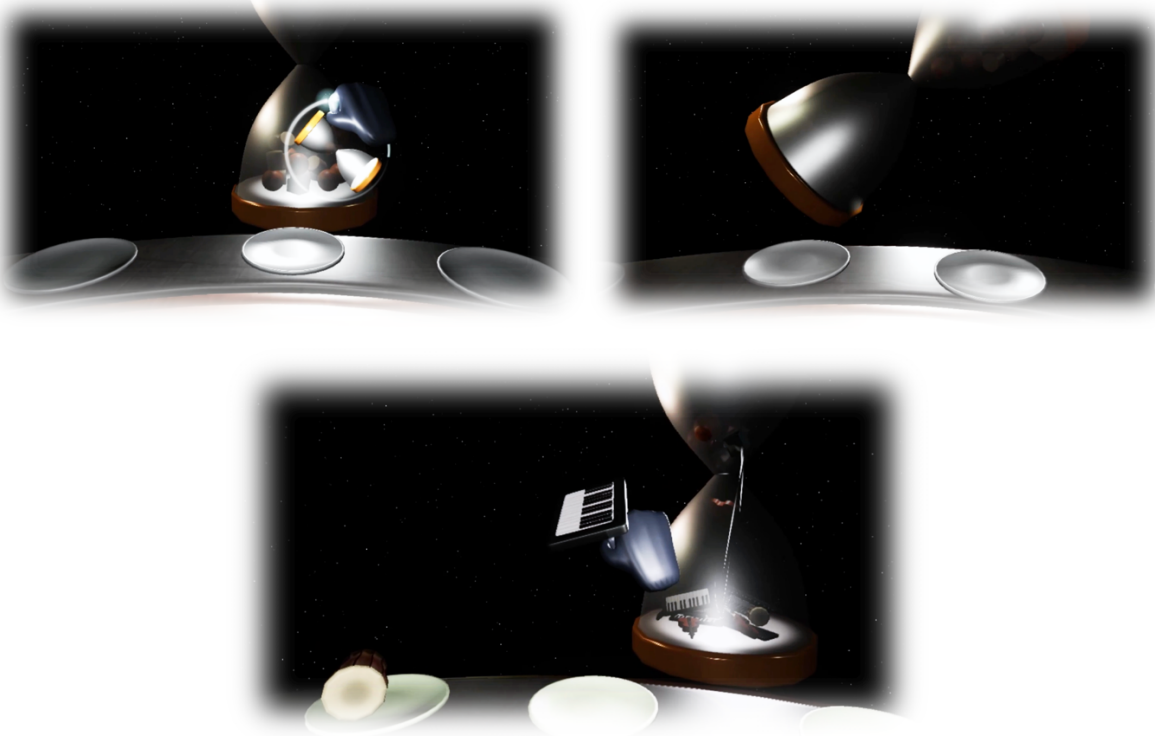
Narrative

As you return to the hourglass-facing position inside the cosmic kitchen, a miniature version of hourglass appears just in front. As you rotate the mini hourglass, the original hourglass rotates half a revolution, causing its simple geometric foods to transfigure into corresponding musical instruments of contrabass, piano, and a drum. This transformative moment is when materialistic needs turn into materialistic needs with purpose; when means-to-the-means turn into means-to-the-end. The plate color is also changed to green, suggesting a different nature of needs.

Music

The Rhodey arpeggios in the kitchen are now quantized to the pulses formed by fulfilling the basic needs. They are faster in tempo than before, and share the downbeats with the pulses.

Part 2.2. The Little Hunger with Purpose – Restaurant
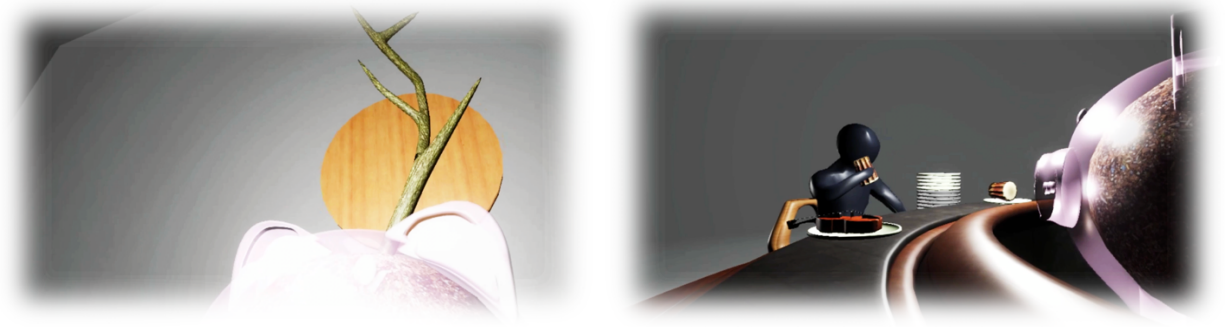
Narrative

The glutton is now transformed into a reserved human adult. As the adult consumes foods of purposeful materialistic needs, a branch grows out of the soil from the piggybank. The branch symbolizes an initial growth out of the basic needs.

Music

As the adult continues to eat, a drum loop, a walking bass line, and rhythmic comping lines begin to slowly kick in note-by-note on top of the swing rhythm pulses. The master clock ChucK script controls the rhythm and beats the three instrument loops.

Drum samples were recorded from GarageBand and a loop matrix was scripted to play certain samples on specific beats. A modulation index of 2, and a modulation ratio of 2 were assigned to the bass line FM Synthesis. A modulation index of 10, and a modulation ratio of 15 were assigned to the comping line FM Synthesis. Both lines have different ADSR envelopes.

Part 3.1. The Great Hunger – Kitchen
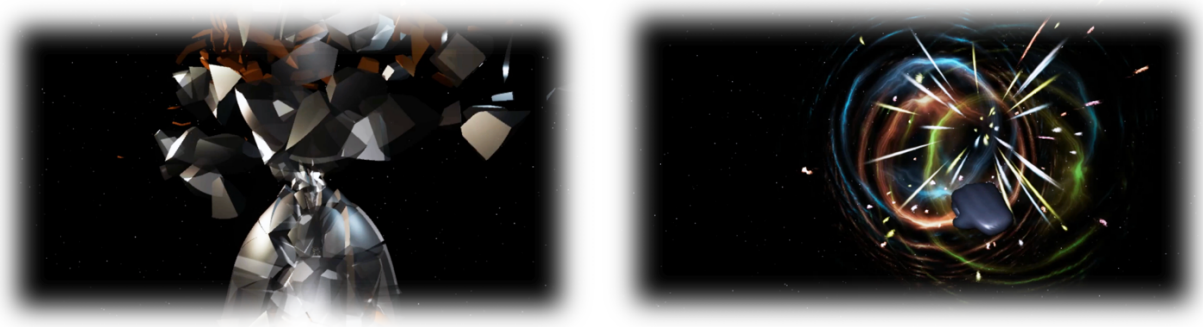
Narrative

      You return to the cosmic kitchen rotates the hourglass for the last time. The purposeful materialistic foods inside the hourglass slowly descend down to transform into a visualized form of the jazz music. This immaterial form of music is the symbol of achieving the Great Hunger. After the transformation is complete, the hourglass shatters into pieces because this actualization of Great Hunger can no longer be temporally changed in its form and meaning. The color of the plate also changes into red, showing the different nature of needs compared to the previous ones. You grab the immaterial music object and returns to the restaurant.

Visual Art

      Whenever a drum beat, a bass note, or a rhythmic chord is played, Chunity sends an event signal to Unity to play a burst particle effect. ChucK's precise time control allows visual effects to occur at the exact times, while Unity's built-in clock lacks this control.

      The shattering effect of the hourglass was created by the Cell Fracture Add-on from Blender. Then, a rigidbody component and a convex mesh collider component were added in Unity. At the moment of shatter, a gravitational force was applied to each piece and Unity's physics created a natural shattering effect.

Part 3.2 The Great Hunger – Restaurant

Narrative

     The adult is now transformed into a child. A child represents a pure human entity, who seeks for truth and meaning. A child also represents a human being with fulfilled basic needs with the help from his or her parents. There is no food element in the restaurant other than the immaterial music object in the player's hand. When the player approaches the child, the child takes the immaterial music and consumes it for his or her Greater Hunger. After the child finishes eating, the player converges with the child and observes the flowers finally bloom on the branch of the piggybank.

Music

     Once the child takes the immaterial music object, a melody line is played on top of drum, bass, and piano lines. The melody line has a modulation index of 8 and a modulation ratio of 2. Its changes in pitch and rhythm correspond to the overall jazz progression established within the scene. The line consists of two motivic solo loops.
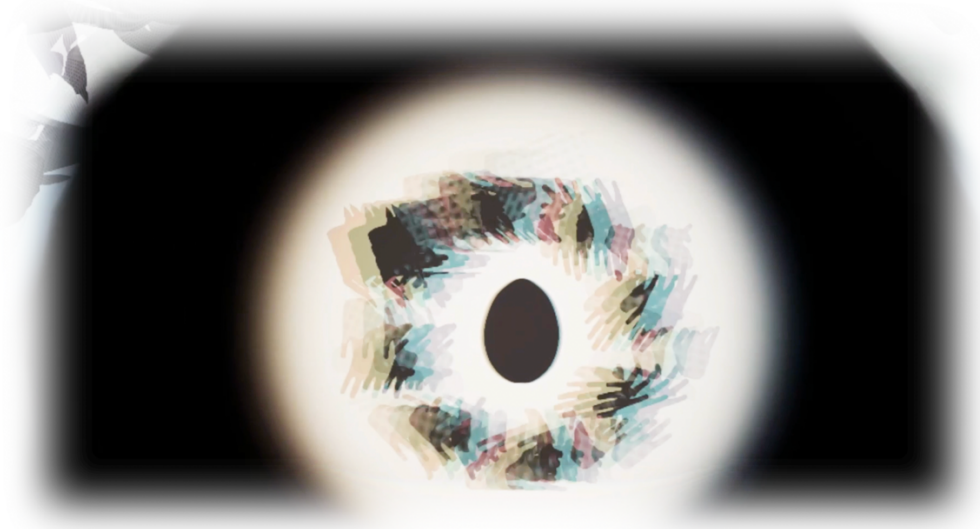
Scene #2. My Fractal Metamorphosis

– Human Perspective on Time –

My Fractal Metamorphosis

My Fractal Metamorphosis is an interactive audiovisual narrative integrated with a component of VR audiovisual performance. It portrays human perspective on time by interacting with the environment with hand shadows. The scene mainly investigates two qualities of time: the metamorphic quality of time and the continuous and discrete qualities of time.

First, time allows for a change, and more importantly, different changes for every individual. Although the time seems to govern everyone in the same way, it poses different meanings to everyone depending on what kinds of actions he or she took within a certain time frame. And change leads to another change. Thus, time permits recursive metamorphoses throughout our lives. Second, the way we are present in time and the way we remember the past in time are fundamentally different in nature. In the present, we perceive time as continuous flows of motion. However, when time escapes to the past, it transforms into discrete fragments.

Upon the end of time, if we look back to our past and organize all the discrete moments in groups of different metamorphoses in life, it may perhaps result in a fractal image that is unique to all individuals.

Part 0. Overview

This combination of the two perspectives on time is the main theme of this scene. The scene uses various methods in audiovisual interactions to embody this idea of fractal metamorphosis. First, shadows of hands and their musical counterparts are mapped to the VR controllers to portray the cause and effect nature of taking an action within time. Second, all shadow motions of the player are recorded in a data matrix, and they recur repeatedly in musical and visual forms throughout the scene. Third, zoetrope aesthetics are implemented to any recursive actions to represent how we recall them as discrete moments. Fourth, the concept of metamorphosis is applied to the shapes and animations of the hands as they change in form and function throughout the scene. Lastly, in the end of the scene, all of the past actions converge into a single point.

Narrative

The narrative of the scene is divided into four stages: larva, pupa, adult, and egg. In the larva stage, the two hands are separated and the interplay of the two create an audiovisual narrative, entirely based upon the player's choices. In the pupa stage, the two hands begin to collapse with each other to form a single entity. In the adult stage, the connected hands slowly transmute into a bird. In the egg stage, all of the hands performed in the previous stages collapse into an egg.

Each time the player finishes audiovisual expressions within each stage, the motions performed in continuous time are presented in discrete stop-motions. Eight different sets of hands of the past rotate around the cylindrical environment, creating a zoetrope-like aesthetics.

LARVA   PUPA   ADULT   EGG
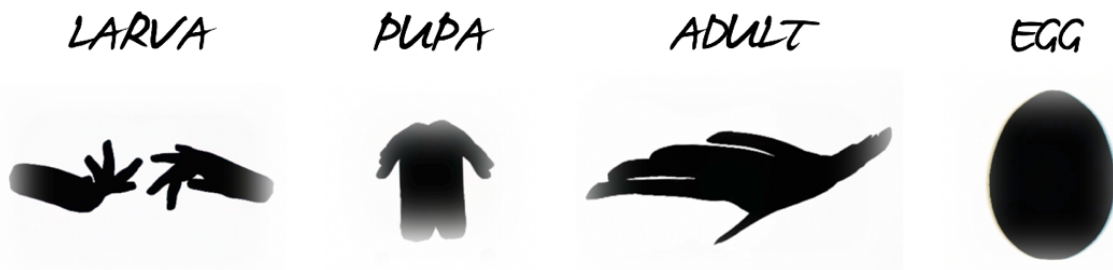
Music

The player has the control of melodic pitch, changes in gain, and the speed of the music based on their modes of expression. In addition, the outcome of individual controls of music is saved in a data structure in order for it to recur throughout the scene. The timbre of music transforms with the metamorphic narrative.

Granular synthesis using ChucK is applied to depict various features of the perspective on time. The rates of how grains are played change with the speed of zoetrope rotation actions. The grain sizes, grain lengths, and the grain gaps are changed to portray the continuous and discrete natures of time. The grain positions are changed to give a smooth transition between timbres.

A chord progression is predetermined, described in the diagram below. However, it is entirely up to the player for the lengths, melody line, and they dynamics within each measure.

Visual Art

The entire visual components of the scene are comprised of light and shadow interactions. Spotlights in various intensities and range were used to create effective outcome of the shadows. A set of 3D hands and handcrafted animations were created using rigged bones and the action editor in Blender. The transformation of hands to a bird was animated using shape keys. Then, a transparent material was applied to the hand's mesh, and set the mesh to only cast shadows. Therefore, the player would not see the actual 3D hands through the camera, but only their shadows. The visual aesthetics of a zoetrope was created using mathematical calculations in the polar coordinates.

Part 1.1 The Larva – Continuous Time

Narrative

You begin with a single spotlight with two shadows of hands. A grasping and stretching animation components are attached to the hands. The player has the full control over this animation by using the touchpad on the Vive Controllers. The positions of the hands are mapped to the controllers.


Music

Using these two components, animations and positions of the hands, the player has the expressive freedom over audiovisual features. First, the gain of the music is controlled by a mix of distance between the hands and the amount of hands grasped; closer the hands, the larger the gain, and the more stretched the hands, the larger gain.

Animation Control

Gain Parameter
&
Chord Change

Second, the melody of the music is controlled by the right hand's height within the spotlight; higher the height, the higher the pitch. 8 discrete notes were selected relative to each chord, based on the tonal hierarchy, and were spaced out in height. In order to prevent the hand to sweep through every note when changing the height position, a delay of 500ms was applied every time a change in pitch occurs.
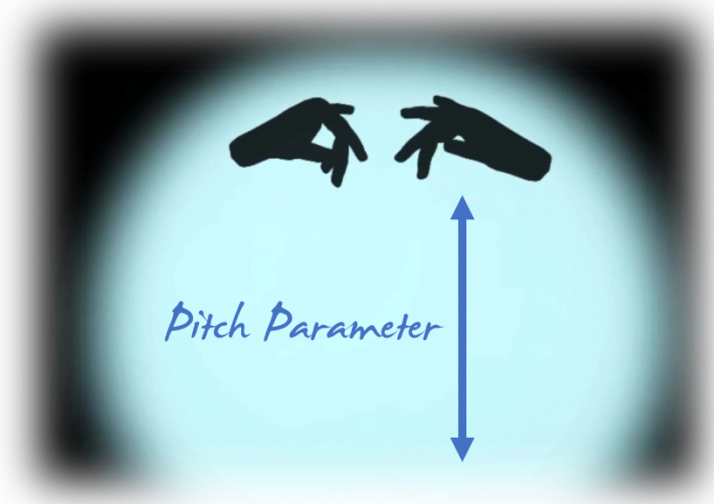
Third, the progressing to the next chord is determined by the animation of the left hand. If the left hand's grasp reaches full closure, the harmonic progression moves on to the next chord. This works organically with the gain control mechanism. Fourth, the audio of the chords is spatialized to the location of the left controller, and the audio of the melody to the right. This gives a sonic character to the hands. Lastly, by controlling the positions, rotations, and animations of the hands, the player has the visual expressive freedom. All parameter controls were smoothly interpolated.

Granular synthesis is applied for musical timbre for the chords and melody. Using a string ensemble sample and a flute sample from GarageBand recorded with the pitch of middle C, a ChucK instance granulates the sample with various parameters such as grain size, grain rate, grain length, grain gap, and gain. A DC blocker is implemented to prevent possible clipping. The pitches of chords and melodies are controlled by the change in grain rates.

Part 1.2 The Larva – Discrete Time
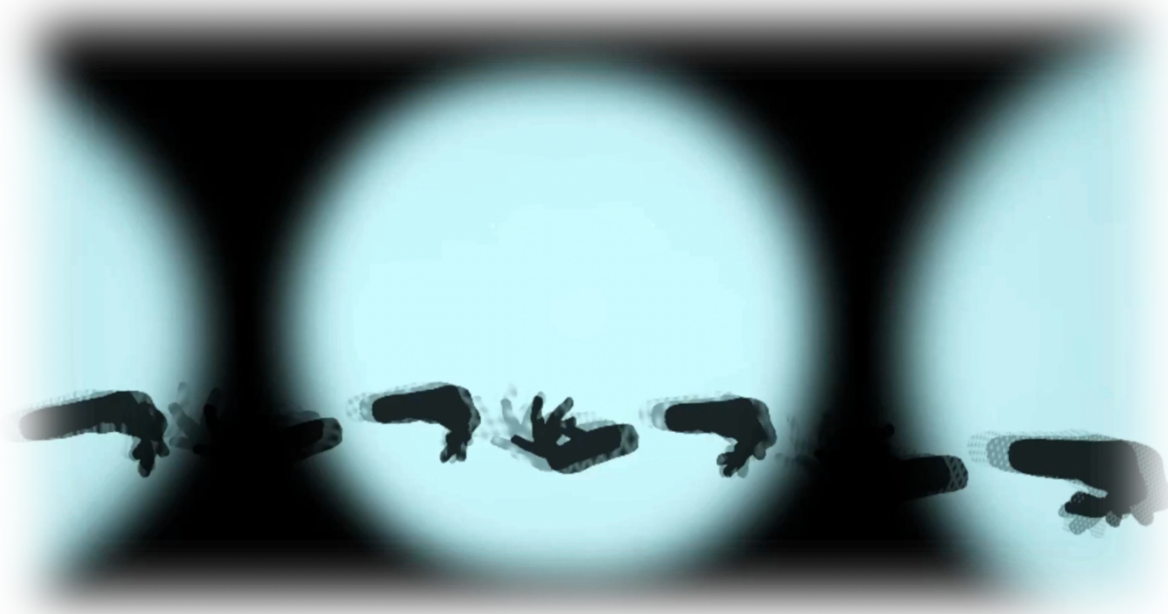
Narrative

After the player goes through the entire chord sequence, the concept of continuous time ends. The past motions are then presented recursively in discrete stop-motion with a frequency of 8Hz. The stage duplicates 16 hands in a chronological sequence and slowly speeds up their rotation until they reach 120RPM around a cylindrical environment around the user. Then the scene enters a zoetrope phase, where the rotations stabilize visually.
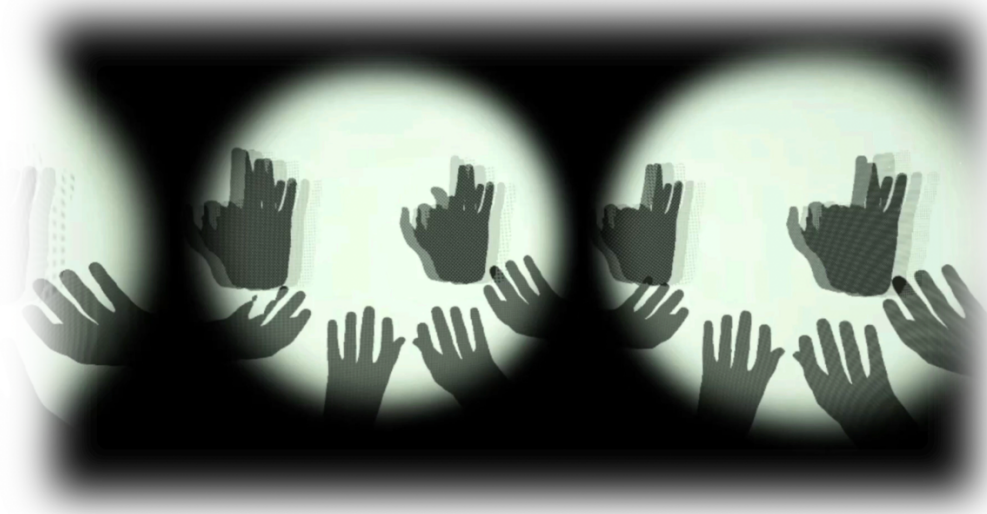
Music

As the RPM reaches its maximum, the grain rate increases to double its original rate to give a musical response. As aliasing happens within the visual component and appears to look slower, the grain rate decreases to its original rate. The grain lengths and gaps are changed so that they give natural vibratos and a subtle change in timbre. However, the melodic pitch, chord length, and gains that the player used as modes of expressions, are preserved and played back as discrete hand motions replicate the player's past motions.

Part 2. The Pupa

Narrative

      Next, the player moves up to the pupa stage. The previous musical statement created in the larva stage is represented as four hand motions on the lower spotlight, signifying the influence of past actions. In this stage, the player makes audiovisual expressions by colliding the two hands tied to the VR controllers. When collided, the hands fold up their fingers one-by-one, each creating a musical embellishment. The chord progression occurs whenever the two hands collide with each other. After going through the chord sequence once, the stage enters a zoetrope rotation phase, similar to the Lava Stage.

Music

Each embellishment pattern is dependent on the location of the current chord progression. The horizontal position of both hands determines the starting pitch of the first tone. Colliding on the left part of the spotlight creates lower pitched embellishments, and vice versa. The horizontal pitch mapping consists of an octave and a half of a D-major scale. The embellishments play neighboring tones of the pitch where the hands collided. The timbre of the tones was created by sampling a harp tone in GarageBand. An ADSR envelope was applied to change the timbre closer to a piano tone.

Part 3. The Adult

Narrative

Next, the player enters the Adult Stage. The previous musical statement created by the Pupa Stage is represented as four hand motions on the lower spotlight, signifying the influence of past actions. In this stage, the player controls the position and the rotation of the connected hands. Every time a chord progresses, the wings of the hands flap, and the overall shape slowly changes to a shape of a bird.


After the player goes through the chord progression, the spotlights enter into a zoetrope phase. However, the bird is not duplicated into zoetrope components. Instead, the bird flies around the cylindrical environment. This represents that metamorphosis, or a significant past change in life, sometimes transcends the nature of time and vividly remains with people in their present time.

Music

Change in timbre is the key musical change in this stage. As the hands transmute into a bird, the string ensemble and flute timbres transform into voice. Also, the music becomes more grandeur as a bass line slowly fades in. The vocal timbre of the melody line is an octave higher, further opening the range of harmony of the sequence. A choir sample from GarageBand was mixed to both the string ensemble sample and the flute sample, and by gradually moving the starting position of the grains, a smooth transition in timbre is achieved.

Part 4. The Egg
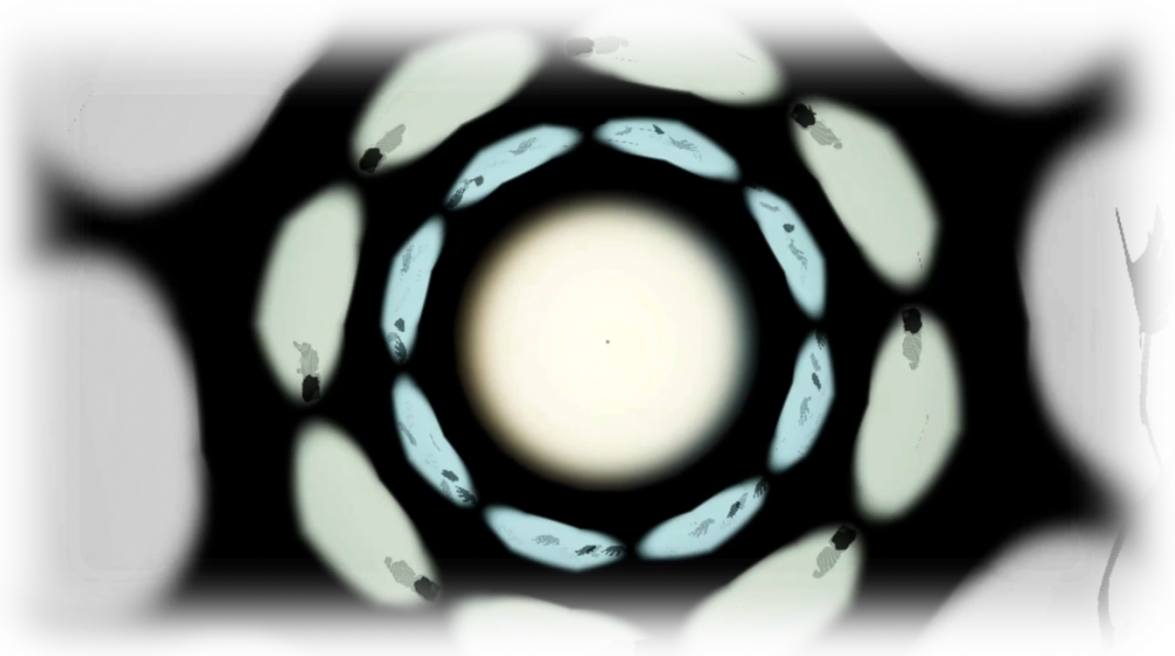
Narrative

In the Egg Stage, the player moves back to the original point, while observing the zoetrope motions of the player's past audiovisual statements with the hands as artifacts. The three stages of Lava, Pupa, and Adult gradually converge at the bottom of the cylindrical environment. In the end, the convergence creates a shadow of an egg, where all of the hands enter into. An egg is perhaps the origin of time, the compilation of all of our discrete moments in time. A more colorful spotlights are used to create a visually appealing finale.
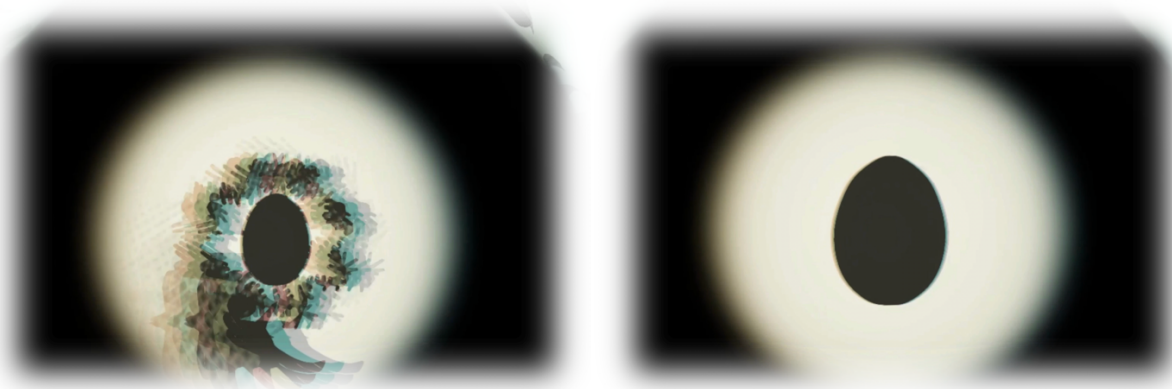
Scene #3. Your Wet Shoes in My Rain

– Human Perspective on Empathy –

Your Wet Shoes in My Rain

Your Wet Shoes in My Rain is an interactive audiovisual narrative with a focus on storytelling. The scene breaks down the qualities of empathy such as perspective sharing, nonjudgmental listening, emotional recognition, and communication, and portrays these qualities in a single storyline.

Unlike sympathy, empathy requires us to be in the other person's shoes, recognize what the other person is feeling, and make a mutual emotional connection. This scene was inspired by the author's (Kunwoo Kim) personal experience. When his best friend's mother has passed away in a tragic accident, he could not say a word but to listen, since he could not emotionally connect with his friend's amount of grief. This scene embodies a personal wish on what he could have done for him.

The aim of this scene is to have the player aesthetically experience empathy step by step with the characters and environment of the scene.

Part 0. Overview

Audiovisual and interactive components are applied in ways that maximize the strength of the narrative. The overall lighting of the scene is mainly focused on human characters. Visual effects are intensified with the magnitude of empathy occurring throughout the scene. Different harmonic progressions are used to effectively deliver the emotions contained within the communications. Interactions occur on occasions where active responses are required. The ambience of the scene is human-centric in that the environment takes place in either the internal or external human bodies.

Narrative

The narrative proceeds in a linear storyline. The story aesthetically describes the basic process of empathy: being subject to grief or grievance, calling for empathy, connecting emotionally, receiving understanding, recognizing others in need, receiving a call for empathy, and lastly giving empathy. The flow of the narrative is carried by sets of metaphors and symbols such as rain, umbrella, and ladders. Details are explained below in different parts.

Music

Two kinds of chord progressions were used to describe the emotions of the player. The progressions are described in the diagram below. The first harmonic progression consists of relatively more tension notes and unusual harmonic movements. The second harmonic progression does not yield a drastic change, yet chord types and movements are stabilized. These were intentionally scripted to describe the emotions before and after receiving empathy. Empathy is not about curing the each other's grief, but rather stabilizing its magnitude. Additionally, empathy is not about silver lining one's pain, but rather being in the rain together. For similar reasons, timbre of the second harmonic progression is smoother and more open compared to the first one.

The characters within the scene respond to the player's musical statements by using melody lines that correspond to the player's chord progression. Granular synthesis and

instrument sampling with ADSR envelopes are used to create the sound textures of each instrument.


Visual Art

In order to emphasize the human characters within the scene, translucent materials with point lights are implemented to generate glowing effects. The rest of the environment uses minimal lighting to create a dark ambience. This enables the various particle effects to stand out as well.

3D human models were handcrafted in Blender. In addition to creating human animations using rigged bones in Blender, animations from Mixamo were applied throughout the scene. Other 3D objects were designed and animated in Blender and using shape key animations.

Part 1. Being Subject to Pain
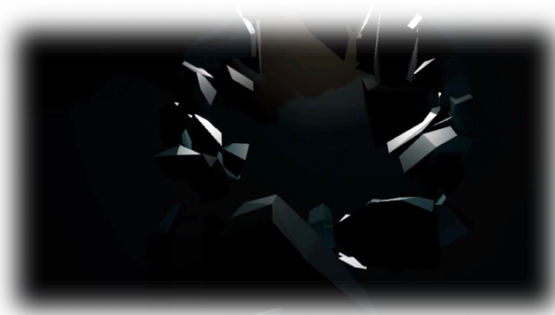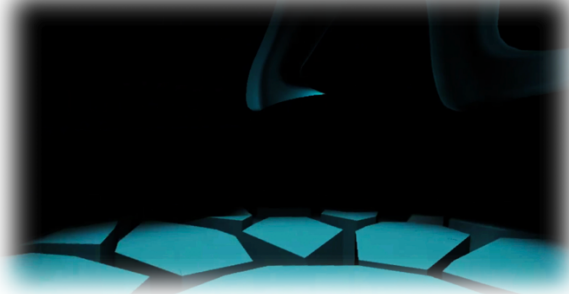
Narrative

      In the beginning of the scene, you are placed in a dark place, only enabled to observe the footsteps that pass by. The footsteps represent bystanders or people who are unable to recognize your pain. Soon the ground breaks down in a fissure, and you fall down into the dark cave. A heavy rain pours on you.

Music

      No music is present in this part of the scene except for the sound effects of various footsteps, ground breaking, or rain. Three different footstep samples are implemented, and a random range is added to their rates in order to have more variance.

Part 2. Calling for Empathy
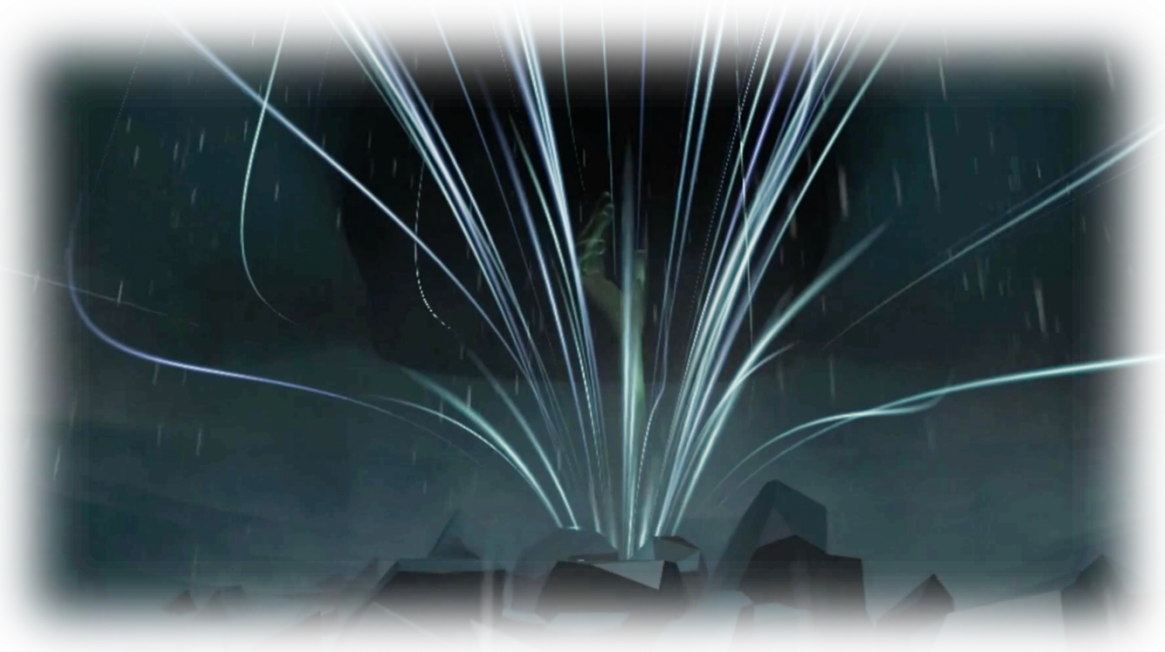
Narrative

Stuck inside the dark, rainy cave, the player makes a call for help to the outside. Each time the player makes a call, an arm reaching towards the exit grows out from the ground. After completing a musical statement, the arm flies out of the cave.

Music

Sets of chords in the first harmonic progressions are used to generate musical calls. The chords are generated by using a jazz organ sample from the GarageBand with grain length and position adjusted so that it inherits the natural vibrations of the sample. The length and gain of each chord are governed by user interaction. As the player waves around the controller, its velocity is translated to the gain value with interpolation. When the velocity reaches near zero, the chord proceeds to the next set of harmony.

Visual Art

A trail renderer is attached to the player's hand, which entails an effective visualization of the hand's velocity. A particle system is attached to the bottom of the arm that grows from the ground. As the particle system emits particles towards the exit, the size and velocity of the particles increase with the arm's growth to emphasize the strength and direction of the arm. The hand of the arm is constantly animated to grasp the air, underlining the narrative of calling for help.
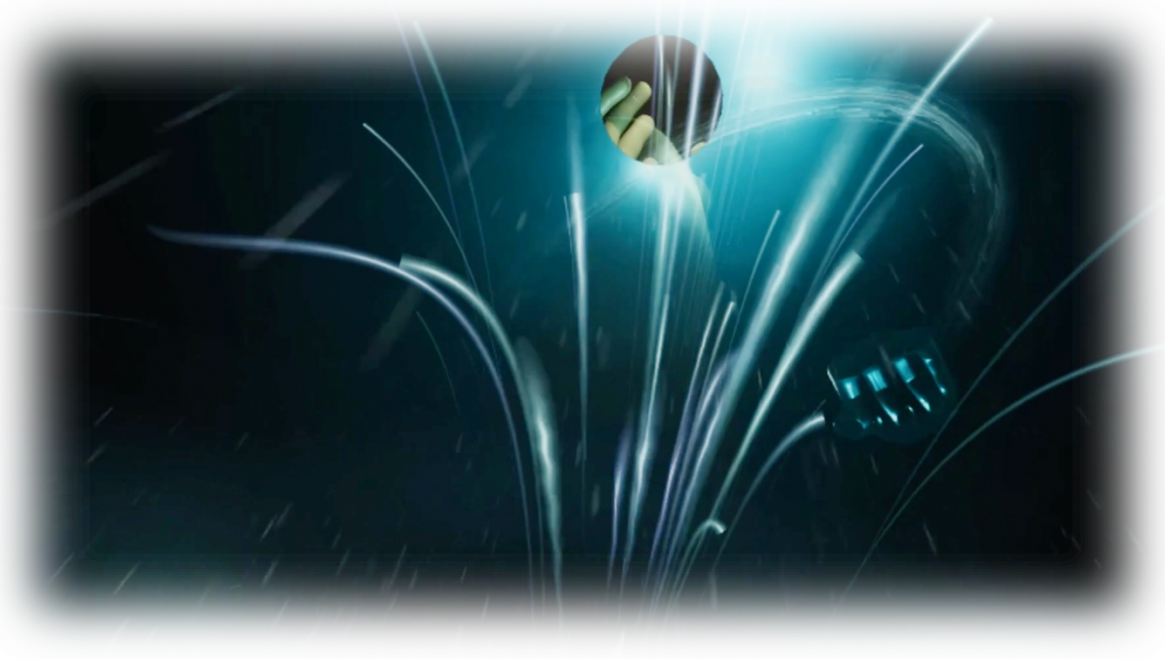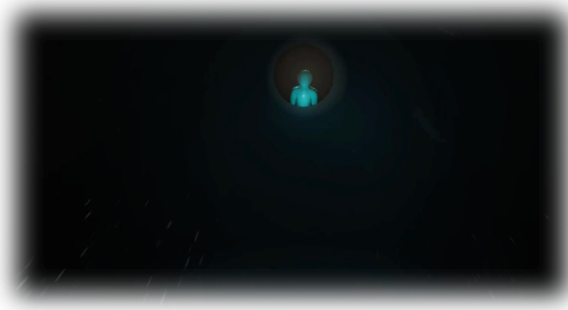
Part 3. Emotional Connection

Narrative

Shortly after the hand flies outside the exit, a person looks down at the player from the hole. Then the person puts down a ladder and climbs down with an umbrella. Then the person opens up the umbrella and scales down to the player's eyelevel, and walks towards the player. The person places the umbrella on the air so that both can share it, and sits down on a stone, prepared to listen.

A sympathetic person would look down the hole and leave. However, the narrative is suggesting that an empathetic person makes the effort of climbing down to your cave to share the rain with you. Scaling down to the person's eyelevel is portraying that empathy is about listening without judging and emotionally connecting with the person.
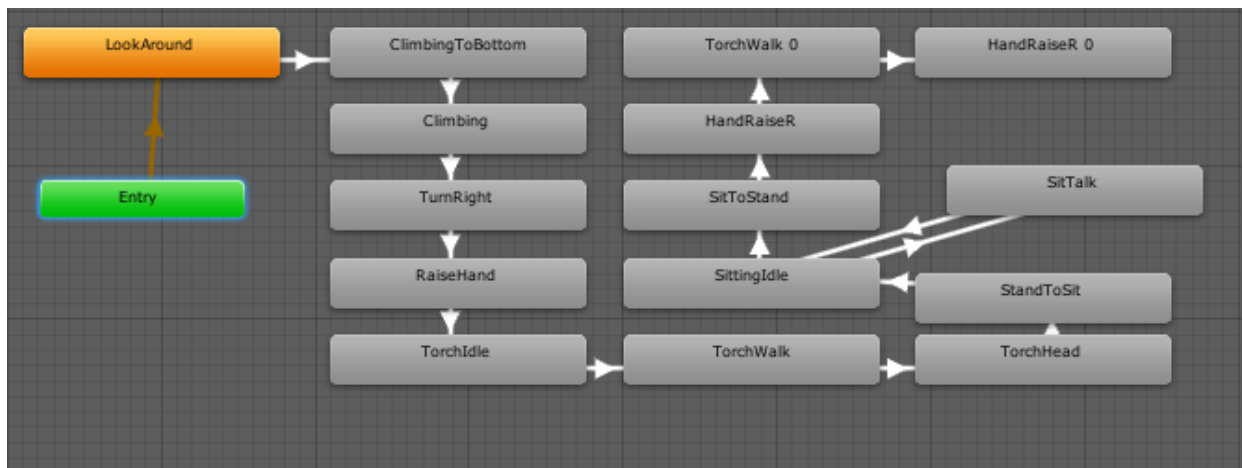

Music

As a response to the player's musical calling, the person echoes the first harmonic progressions with piano chords. This emphasizes the narrative of emotional recognition and connection. The piano tones are generated by sampling grand piano samples from GarageBand with an ADSR envelope attached to reduce the sharpness of the attack.

Visual Art

The person undergoes a big arrangement of animations in order to reach the player. A sequence of IEnumerators in Unity is used to precisely script each of the timings and movements in positions and rotations. Red point lights are attached to the person's umbrella, which gives a warm color of lights for the first time in the scene. This insinuates the warm intention of the person. Below is an example of an animation controller of the person within the scene. Each block contains an animation data and the script sends triggers to activate each in the right time.

# Part 4. Sharing Empathy

Narrative

This is the climax of the narrative, where both the player and the person comprehensively share each other's feeling towards the pain. The player and the person exchange musical communications under a shared umbrella. The ambience of the scene begins to change. It stops raining and bright particles start to spawn from the sky and the ground. A circular light gradually embraces the two people in musical dialogue. The music becomes more stable. After the dialogue ends, the person bids farewell, and leaves the player's cave.

Music

The musical communication between the player and the person is done with the second harmonic progression. Harmonies contain less tension tones and progression is relatively more stable than the first. Along with the warm colored particle effects, a sense of calm is infused in the audiovisual ambience. The player communicates with granulized chords, while the person responds to the chord with piano arpeggios. Gain and length of each chord are controlled by the player.

First Harmonic Progression
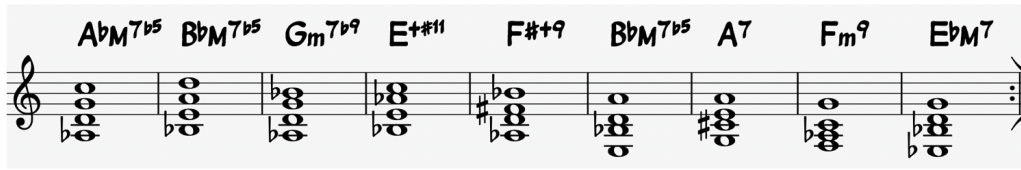
Second Harmonic Progression
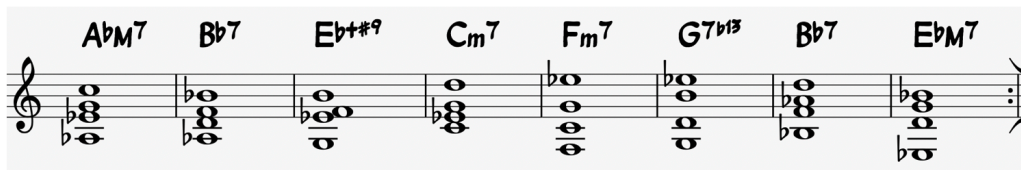
Visual Art

To control the particles to spawn more and closer near the player, a gravitational force was added in Unity physics. This force increased as the chord progressed, pulling environment-scale particle systems towards a point between the player and the person. Empathy is not only sharing, but also bonding. Sharing a communication on a truly empathetic level is both powerful and beautiful.
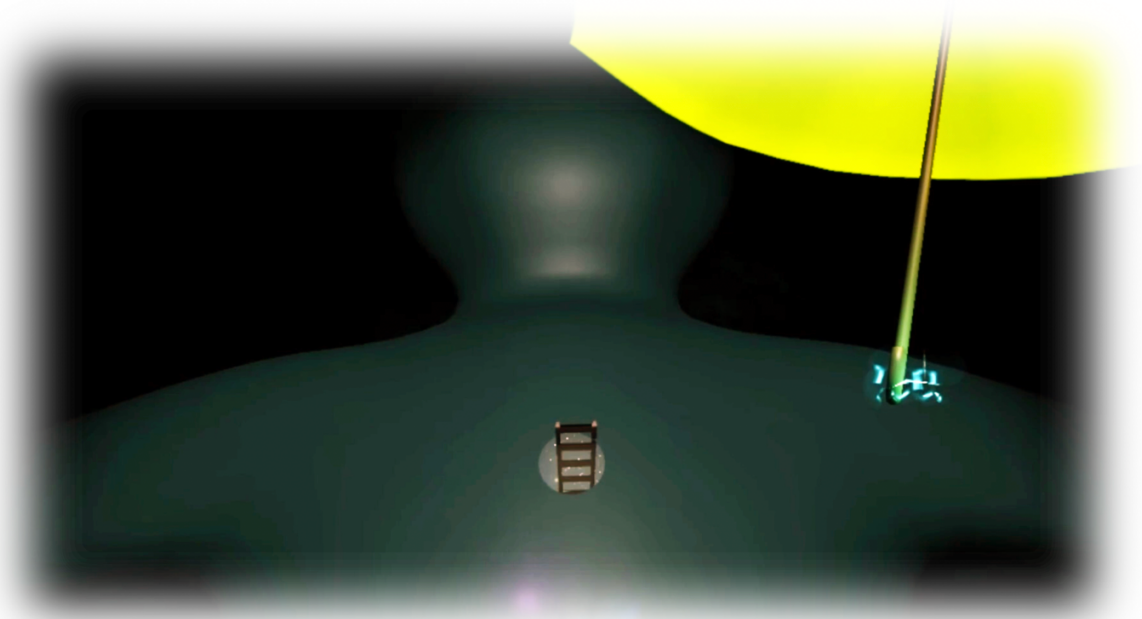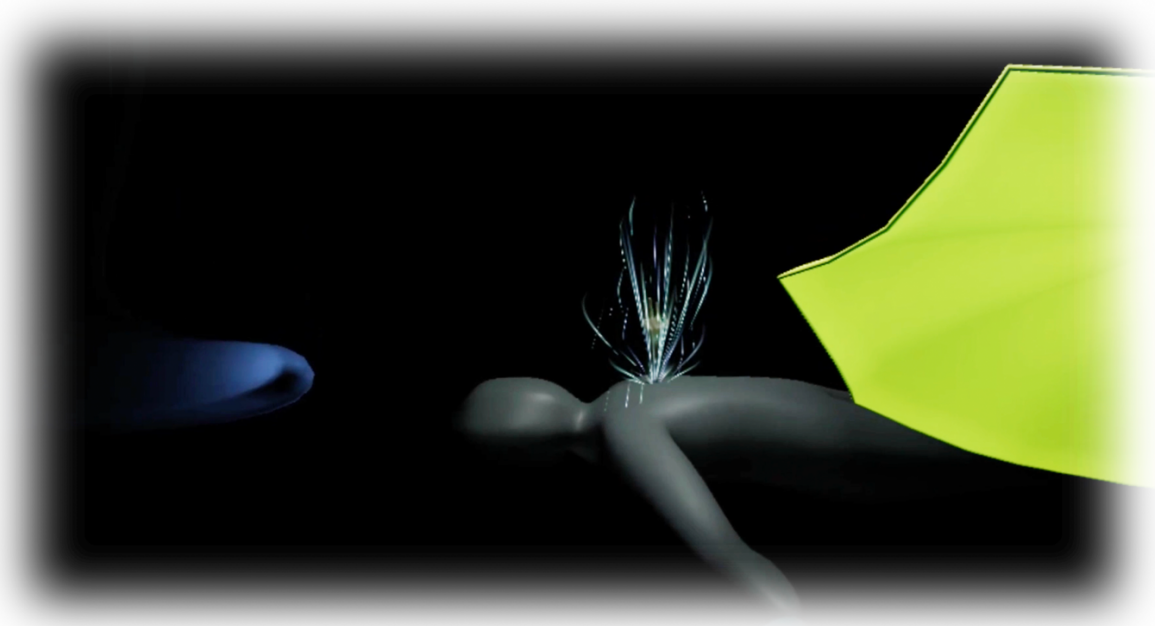
Part 5. Recognizing Others

Narrative

      After the person exits from the player's cave, an umbrella appears for the player. The player grabs the umbrella and opens it to also fly out of the cave, and to the sky. The player realizes that the environment itself was the player's body. Shortly after, the player realizes that there are others, who are in similar pain.

Being subject to a certain hardship and having it empathetically shared with others, we acquire perhaps a third eye that enables us to see such hardship in others. Giving empathy begins with seeing myself in other people's shoes, and feeling what it is like.

The umbrella is used as a choice factor. The scene does not proceed unless the player opens the umbrella. It offers an opportunity for the player to stay and meditate until the player wishes to exit from the environment.

Music

The musical communication that the player and the person shared is now played without any active interaction. In addition, a bass instrument accompanies the music. This depicts how the experience of empathy remains with us, and it affords us the ability to perceive others who need it.

Part 5. Offering Empathy
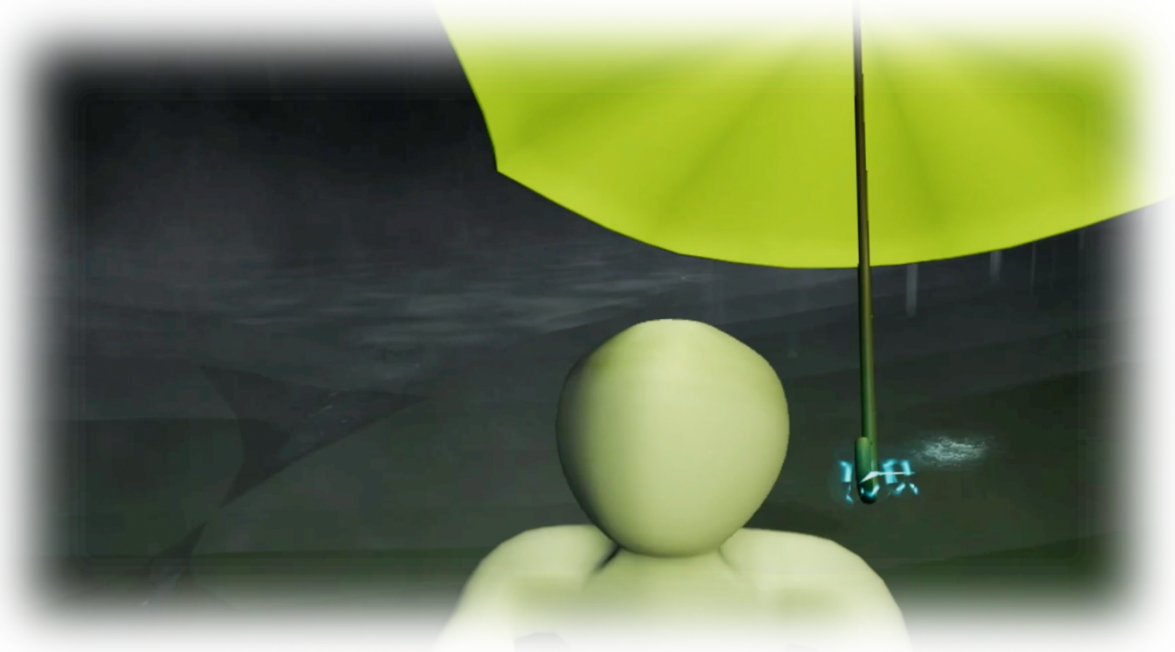
Narrative

      After you recognize the other person in need of help, the other person's arm, similar to the player's when the player made a call for help, flies towards the player. The arm guides the player to the hole in the other person's body, and you see the person sitting in the rain. You fold your umbrella, and decide to put down a ladder to climb down to the person's cave. Slowly, you walk towards the person, and offer your umbrella. The scene ends as the person looks up towards you.
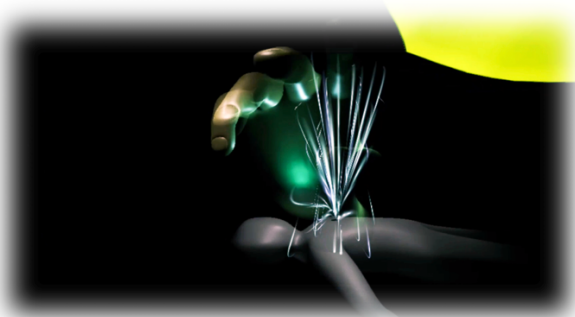
      It may not be our choice to recognize others in similar pain. It is an internal human quality to feel sympathetic towards others. However, initiating an effort to connect and

communicate about it, is an active choice. In the scene, the ladder does not appear unless you decide to fold your umbrella. The scene ends before the actual communication occurs, suggesting you to complete the empathetic action in the real world.

Music

From the point of recognition, a melody line is added to the second harmonic progression to portray the voice of the other person calling for help. A French horn sample was retrieved from the GarageBand and was manipulated by granular synthesis to blend the timbre with the overall musical aesthetics. A predetermined pitch array with gain controlled by a low frequency oscillator set the parameters for the melody. Towards the end of the scene, time is calculated so that the instruments smoothly transition into a perfect cadence, to mark the ending of the music with the scene.

The Ending: My End, My New Beginning


Narrative

After you have explored through all three scenes, the next 'object' you fish is the entire ocean. The ocean faces right at you. You begin to go closer to the ocean. The water gradually solidifies its form, slowly showing the actual shadow of yourself, walking towards somewhere. You realize that this is your ending. You fish for the last time: yourself.

Music

　　Facing the ocean means that you are facing your internal self. Thus, the sound of ocean tide breaking into your boat slowly changes to your heartbeats. And you begin to hear music for the first time in the fishing scene.

　　The music used in this scene is a direct recording of the author (Kunwoo Kim) improvising on the acoustic piano while thinking about the meaning of *My End, My New Beginning.* Every music that has happened so far in the previous scenes went through some kind of synthesis. By using an acoustic recording for the first time, it gives a sense of difference, a feel of an ending. The heartbeats gradually slow down to a stop, insinuating the arrival of death.
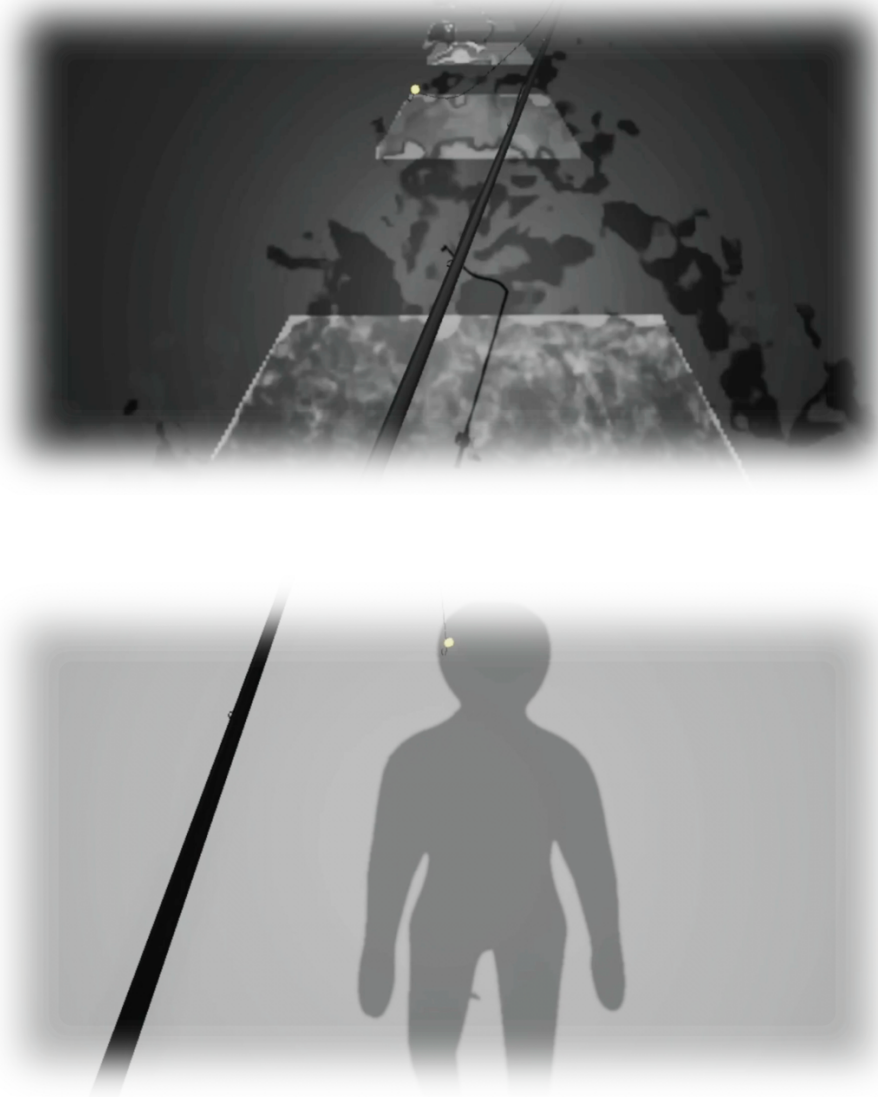
Acknowledgement

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