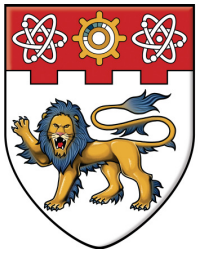
ART AND GAMES
THE DEVELOPMENT OF *TRIVIUM*



NANYANG
TECHNOLOGICAL
UNIVERSITY

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NANYANG TECHNOLOGICAL UNIVERSITY
SCHOOL OF ART, DESIGN & MEDIA

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NANYANG TECHNOLOGICAL UNIVERSITY
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Trivium – The Impact of Interfaces on Multiplayer Gameplay

Submitted by:
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**A Final Year Project submitted to the School of Art, Design & Media,
Nanyang Technological University in partial fulfillment of the requirements for the
Degree of Bachelor of Fine Arts in Interactive Media.**

Academic Year 2008/2009

Trivium – The Impact of Interfaces on Multiplayer Gameplay

By Zhou Xuanming

Introduction

Trivium is a multiplayer game in which three players, each interacting with the game via a unique control interface, cooperate with each other to beat the levels presented to them. The motivation for creating such a game stems from our interest in exploring the possibilities of a cross-platform multiplayer game (for example, multiplayer gameplay between an Xbox 360 and a PC), the difficulties in such a task, and the possibilities of commercial viability.

Trivium in Detail

Trivium requires three players to play this game simultaneously. As mentioned earlier, each player interacts with the game using a different control interface; these interfaces are namely a mouse, a joystick and a keyboard. The game is viewed from the side, and resembles a traditional two-dimensional platformer while being rendered completely in a three-dimensional engine. The objective of each level is simply to get to the end of that level.

The goal of the design was to create a tight dependency triangle that rewarded cooperation between the three players and presented no overlap of roles.

The joystick player controls the movement of the female lead character of the game, and can perform moves such as jumping, double-jumping, running and dashing via the input of the correct combination of keys and directions on the joystick. His or her main role in this game is to stay alive, navigate past hostiles and reach the exit of each level.

The mouse player plays the role of the main offensive force of the team. Using the cursor to point and shoot at enemies on screen, this player deals the fastest and most direct form of damage to enemies.

The keyboard player offers supportive assistance to the team. There are many letters floating around in the space around the lead character that the keyboard player can use to form words. Forming words out of any of these drifting alphabets will cause them to explode and damage nearby enemies. However, some special letters, when used to create words, may perform special tasks such as replenishing health, healing the team, opening doors, or upgrading the offensive power of the mouse player.

Development of Mouse Mechanics

The development of Trivium is a route lined by many obstacles, being a path less traversed. We were unable to find direct references for cross-interface multiplayer, so we attempted research on games made for each interface instead.

First person shooters (FPS) for the PC were heavily focused on the skill of the player when handling the mouse. We analyzed a few relevant games to develop our gameplay mechanics for the mouse player. Valve Software's *Counterstrike*[1] was one of the most successful online action games ever made, an accolade which easily grabbed it a spot in our list of reference games. Players were considered skilled in the game if they could frequently aim and hit the head portion of enemy three-dimensional models, causing grievous damage to opponents. Generally, challenging the player's aim with the mouse is common in FPS games; this is seen more recently in Electronic Arts' space horror game *Dead Space*[2]. In the game, players had to shoot specific limbs on

[1] Le, Minh. (2000). *Counterstrike.* Valve Software. Publisher: Vivendi Universal. PC.

[2] Schofield, Glen. (2008).*Dead Space.* EA Redwood Shores. Publisher: Electronic Arts. PC.

hostile creatures to kill them; shooting elsewhere minimizes the damage and sometimes even makes them more powerful than before. All these examples point to a very readable trend in the design of mouse-based games – the emphasis on accuracy. We attempted to create a design that allowed us to reward players when they were exceptionally accurate, but also cater to weaker players who should have just as much fun with a lesser aim. The idea was to create weak spots in enemies that, when shot, deals additional damage to the enemy and also garners health bonuses for the team.

While this system proved a success with our testers, we faced another problem when the game was tested – mouse players were left bored after all enemies on the screen were eliminated. There were moments of puzzle solving that kept the other two players busy, but left the mouse player idling and having nothing constructive to do. We attempted to solve this by creating enemies that spawned periodically from a spot and attacked the player, this created a tense situation for the mouse player where he had to remain vigilant and guard the team from attacks while they racked their brains to solve a puzzle.

Development of Joystick Mechanics

The joystick can be considered the forefather of all computer game interfaces. It remains an intuitive metaphor for movement of characters on-screen with its directional pad, as well as having several large buttons positioned conveniently beneath the right thumb for easy access. Finding references for joystick-based games was an easy task, especially due to the long heritage of the interface dating back to the Atari days and also because of the recent console game boom. However, most of the games we referenced were designed to allow single-player experiences, which resulted in controls that offered balanced offensive and defensive abilities. This created an overlap with the roles of the mouse and keyboard player, who were designed for offensive and support roles respectively.

Instead of following the example of our references and making our lead character an all-rounder, we decided to focus on the unique strength of the joystick – its metaphor for movement. Unlike the keyboard and the mouse, the joystick offered ease in controlling the movements of the lead female character and also allowed new players to warm up to the controls of the main character easily due to the self-explanatory nature of the directional pad.

Following this direction, the design goal of the joystick player was then to be the physical representation of the team in the game world: He or she alone holds the health of the team, is responsible for getting out of the way of projectiles and needs to get the team to the exit of each level for progress. The joystick player also indirectly controls the "eyes" of the team, because the camera is always centered on the lead character.

Initially the design only allowed the joystick player to make the lead character move, run, and jump, but this soon proved to be insufficient. Recalling that the usual abilities of a joystick-based character to attack and defend itself were taken away, we had to create additional features to replace the ones we've removed. For this, we looked at several fighting games for reference, as these games accorded the player with the largest variety of movement options. Analyzing Arc System Work's hit arcade fighting game *Guilty Gear*[3], we emulated the series' emphasis on varied movement options and incorporated the double-jump and air-dash maneuvers.

Development of Keyboard Mechanics

The keyboard was one of the hardest to develop for, and also required the longest development time. There was a lack of keyboard-based games – most

[3] Ishiwatari, Daisuke. (1998). *Guilty Gear.* Arc System Works. Publisher: Sammy Studios. Arcade.

of the popular games on the PC utilized a keyboard and mouse combination, normally resulting in the keyboard controlling movement of virtual characters, a role that has already been filled in by the joystick in our setup. This created an identity crisis for the keyboard, for something that has so many buttons and so many functions, what role should it play?

In our initial attempts to solve that problem, we looked at typing games, which were natural references for keyboard-based games. There were many typing games available on the market, but most of them were just the same game under a different name, created to measure the raw typing speed of the player in words per minute. There were a few creative exceptions that made our list of references, like Justin Tan's *Typogun*[4] and Smilebit's *The Typing of the Dead*[5]. These games generally reward the quick typing of the player with damage to approaching enemies and additional power-ups, but we quickly realized that these mechanics overlap with that of the mouse, and could not be emulated completely.

We then modified this to allow the quick typing of the player to heal, open doors, or move platforms for the lead character, with accordance to its support role in the trio. Upon play-testing this feature, we realized this was far from ideal because players found the concept of tediously typing word after word that appeared on screen just to open doors for the lead character incredibly boring. There was a very obvious lack of challenge for the keyboard player in this initial design, and we returned to the drawing board to re-design this role from scratch.

Discarding our initial design which focused on the speed of typing, we redesigned the keyboard player in the direction of a "think more, do less" style of play, which we felt suited the role of the keyboard better and created less chance of an overlap with the roles of the other two players. Embarking on the

[4] Tan, Justin. (2005). *Typogun.* Publisher: Independent. PC.

[5] Shiino, Masamitsu. (1999). *The Typing of the Dead* Smilebit. Publisher: Sega. Arcade.

journey afresh, we looked at several digital versions of board games like Scrabble and Crosswords, which emphasized more on thinking before executing an action. We eventually came across Playfish's *Word Challenge*[6] on Facebook, which provided the answers to our month long search. The game required players to make as many words as possible from given letters, and exhibited the amount of fun that can be generated by challenging players' vocabulary, similar to that of Scrabble. We re-designed the keyboard player's mechanic around this concept and created ethereal letters that drifted from the extreme right to the extreme left of the level. The keyboard player can capture any of these letters and attempt to form a word using them by typing the letters on the keyboard. This new mechanic proved to be a success on subsequent play-tests, and player feedback suggests that this mechanic was popular because it allowed new players to utilize prior knowledge and apply it effectively in-game.

Conclusion

The journey of creating Trivium was one of discovery and learning for both my partner and I. It was a definite gamble when we decided to tread into unknown territory and make a game few commercial developers dared to attempt. The common notion of a cross-platform game being unbalanced due to the nature of the control interfaces native to different platforms, was one that could be solved by designing for the strengths of each interface instead of forcing each interface to conform to a design. Although Trivium remains an experimental game that is unpolished in many aspects, I believe it proves that such a cross-platform design is a viable endeavor, and developers should consider this option seriously in future projects.

[6] Playfish. (2008). *Word Challenge.* Playfish. Publisher: Facebook. PC.

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The Role of Narrative in Digital Games: The Construction of *Trivium*

Submitted by:
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A Final Year Project submitted to the School of Art, Design & Media, Nanyang Technological University in partial fulfillment of the requirements for the Degree of Bachelor of Fine Arts in Digital Animation.

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The Role of Narrative in Digital Games: The Construction of *Trivium*

by Ho Qingxiang

Introduction

For my Final Year Project as an Animation student, I opted to create a digital game with a co-partner who was from the Interactive Media Major. To me, this seemed only natural; being part of a generation that has been brought up in an era of digital technology and gaming. Yet through the course of development, I constantly face queries from others as to the nature of my project; whether it can be considered “animation-worthy”. Even from my mentors, who come from a generation more in tune with “traditional” narratives, doubts were cast as to the potential for my project to be deemed a good piece of animation, or more accurately a good piece of story. Such skepticism has even led to a form of exile where people categorize me to being a student of Interactive Media instead. At first, it came to me as a surprise (and a discouragement) that so few people shared my perspective that digital games are as good a medium for storytelling as other more conventional mediums like film or books. However, by swallowing my own pride and taking a closer inspection into the mindsets of such “Luddites”, I have come to understand their reason for concern and that my own prejudice has gotten in the way for my passion of the medium. That is not to say that my initial perspective was misguided, but rather shallow in its understanding and concept. In the scope of this essay, I shall aim to discuss the fundamental flaws involved in game storytelling with reference to my own project *Trivium*, but subsequently hope to show why digital games will soon or have already become a major contender for the narrative.

Disadvantages in game storytelling

As Art Director for my project, I was often told to not sacrifice my conceptual vision for the technicalities of the game. Initially, this seemed obviously plain

and simple, but I have come to realize that the process is often very difficult and ambiguous. This is even more evident for the narrative. The basic question arises: do I make a story that fits the gameplay, or a gameplay that fits the story? Anyone who has been in the game industry can tell you that the answers can be simplified into two fields – immersion versus dynamics. As highlighted in *Call and Response* by Robin Woods and *Theatres of Interactivity* by Richard J. Hand, narrative theorists would agree that a narrative has a great effect in the immersion experience of a game[7]. This is clearly evident in how the phrases "I died" and "[The character] died on me" can be used interchangeably by players of character-oriented games when discussing a gaming session. Such games are often weaved around an engaging narrative that makes players care enough for their avatars to inherit foreign identities. Good examples are First-Person Shooters (FPS) like *Halo*[8], and Role-Playing Games (RPG) like the *Final Fantasy* series[9]. On the other hand, ludologists would argue that a narrative is not critical in a good game. This can be seen in how many players choose to skip cut-scenes which form the narrative and mark development of the plot in favor of returning to the dynamics of gameplay. This illustrates that the narrative is not necessarily the preoccupation for the typical game player, nor is the awareness of narrative structure the foremost in the experience of playing a game. This is especially true of puzzle games like *Tetris*[10], and sport games like *FIFA World Cup*[11]. In other words, unlike film or books of fiction, story is not king in games. This presents one of the major flaws in storytelling of my project: does the story really matter?

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[7] Nate Garrelts (2005). *Digital Gameplay: Essays on the Nexus of Game and the Gamer*. North Carolina: McFarland & Company, Inc., Publishers. pp 209, 215, 221.

[8] Bungie Studios. (2008). *Halo: Combat Evolved*. Bungie Studios. Publisher: Microsoft Game Studios. Xbox 360.

[9] Sakaguchi, Hironobu. (1987-2009). *Final Fantasy series*. Square Enix. Publisher: Square Enix. Various platforms

[10] Alexey Pajitnov. (1985). *Tetris*. Alexey Pajitnov. Publishers: Various. Various platforms

[11] EA Canada. (1998-2006). *FIFA World Cup series*. EA Canada. Publisher: EA Sports. Various platforms

Another issue is on how to tell the story itself. "Plot" has nearly always been core analysis of fiction, film and drama. This can be traced back to Aristotle who, in the *Poetics*, sees plot as the soul of story. Aristotle required a plot to be a "whole" (encompasses a beginning, middle and an end) and that it should have unity, such that if any one of the structural parts is displaced or removed, the whole will be disjointed and disturbed. In this context, it is clear that a story is linear and a controlled experience. The author deliberately presents certain events in a particular order in order to create a story with maximum impact. If the events occurred in some other sequence, the impact of the story would be lessened. However, a game is non-linear. In a narrative game like *Trivium*, although the beginning is the clearest and most commonly shared element, the middle can often take on multiple forms; it can be played differently. As for the end, there may be a pre-determined variety of ideal successful conclusions but for most players there are many endings before this end is reached, the most common of which is "Game Over" caused by the death of the avatar. The range of possible closures clearly damages the careful construction and balance of the "whole" Aristotle strongly preaches. As mentioned in *Games, Storytelling, and Breaking the String* by Greg Costikyan[12], this is largely due to the condition of a good game: games must provide at least the illusion of free will within constrains of the system to be actively engaging. If players are restricted to a linear procession of events like that of a film movie or book, then nothing they do has any impact in the game and they are not playing in any meaningful sense. In short, there is an immediate disagreement between the demands of story and the demands of a game.

The role of story in games

Yet, this is by no means an excuse to say that story plays no role in games, but rather that a different medium requires a different approach and mindset. The

[12] Pat Harrigan and Noah Wardrip-Furin. (2007). *Second Person: Role Playing and Story in Games and Playable Media*. London: The MIT Press. pp 6

easiest example can be seen through the transition of stories throughout history, starting from the oral, to the written, to the watched and to the played. Each required a different set of conditions, which at times overlaps between the mediums, to be appreciated. For instance, the written introduced the concept of the page and the ability to reiterate the same story without much change, while the watched emphasized the concept of the view or camera. Nonetheless, in both mediums the participants are merely passive recipients of the story experience. In games, however, the participant is part of the story. In fact, games have long existed as religious ceremonies imbued deeply in folklore and legend. Essentially, they are re-enactments of stories that can be interacted with. So to say that games and stories are not related is entirely false and presumptuous. The superstructure of many games is comprised of sequential stages of narrative and in the majority of games, especially digital games like *Trivium*, it remains the dominant rule. An analysis of any strategy guide or walkthrough makes the significance of narrative clear.

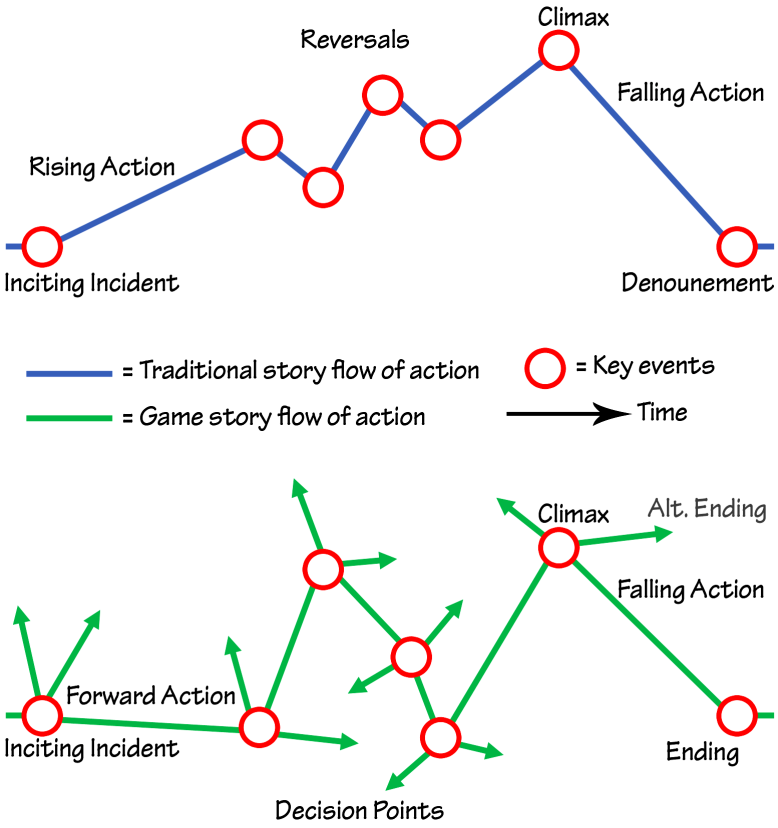

Figure 1 *Although key events in a traditional plot diagram., such as reversals or setbacks, change the level of drama in the story, the story itself never branches and remains on one path – like in books or movies. On the other hand, in game stories, the multitude of possible choices and therefore outcomes results in a branching effect. Although only one outcome is experienced from each point, the course of the story is neither linear nor fixed. However, once all the decision points have been made, a clear linear path is created*[13]

Techniques of game storytelling

The more appropriate question is the level of significance of the story in a game and how much it affects the gameplay. This can actually answer the earlier question of whether to make a story that fits the gameplay, or a gameplay that fits the story. In effect, the best outcome is a balance of both. There have been innumerable games that combine stories and gameplay in ways that appeal strongly to wide audiences. Good recent examples include *Grand Theft Auto 4* [14] with its concept of morality in gameplay and many Massively Multi-player Online RPGs (MMORPG) like *World of Warcraft* [15]. A more suitable consideration is this: To get a good story out of a game, one has to constrain gameplay in a way that ensures enough aspects of a story are told through play and vice versa. This is a revelation I obtained during the story and visual development phase of my project.

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[13] Pat Harrigan and Noah Wardrip-Furin. (2007). *Second Person: Role Playing and Story in Games and Playable Media*. London: The MIT Press. pp 52-53

[14] Simon Lashley and Keith McLeman. (2008) *Grand Theft Auto 4*. RockStar North, Rockstar Toronto. Publishers: RockStar Games, JP Capcom. Playstation 3, Xbox 360 Microsoft Windows.

[15] Rob Pardo, Jeff Kaplan, Tom Chilton. (2004) *World of Warcraft*. Blizzard Entertainment. Publisher: Blizzard Entertainment. Mac OS X, Microsoft Windows.

Figure 2 *Prototype of the game to test gameplay with visual art concept*

So it is not a matter of not comprising conceptual "art" vision for the technicalities of the game, but rather how to work around them. In essence, a game is a system of limitations, but by restricting a story (and even concept art designs) in the manner that suits these limitations allows the possibility to create a set of constrains that produces a story and art style that also fosters interesting gameplay. This is no easy task, but accordingly is not impossible. Practices of such methodologies can be seen in most MMORPGs which present linear stories within mini-quests, while allowing diversity of players' experiences by having these quests be done in any order the players choose. Other examples can be seen in how recent games, like *Metal Gear Solid 4* [16], have embraced the use of multiple solutions to tackle obstacles, which allows for a degree of replayability and a means of linear storytelling through

[16] Hideo Kojima, Kenichiro Imaizumi, Yoji Shinkawa. (2008) *Metal Gear Solid 4: Guns of the Patriots*. Kojima Productions. Publisher: Konami. Playstation3.

non-linear paths. Unfortunately, due to the time constraints of the project, the limited skills of both my partner and I, and the technical limitations of the software we used, our project was not able to break the "beads-on-a-string" format as mentioned by Greg Costikyan. Yet, I have gained new insight into the role of the narrative in games and believe that further exploration would allow me to use games as an additional tool amongst other conventional forms like film or books to create an engaging story.

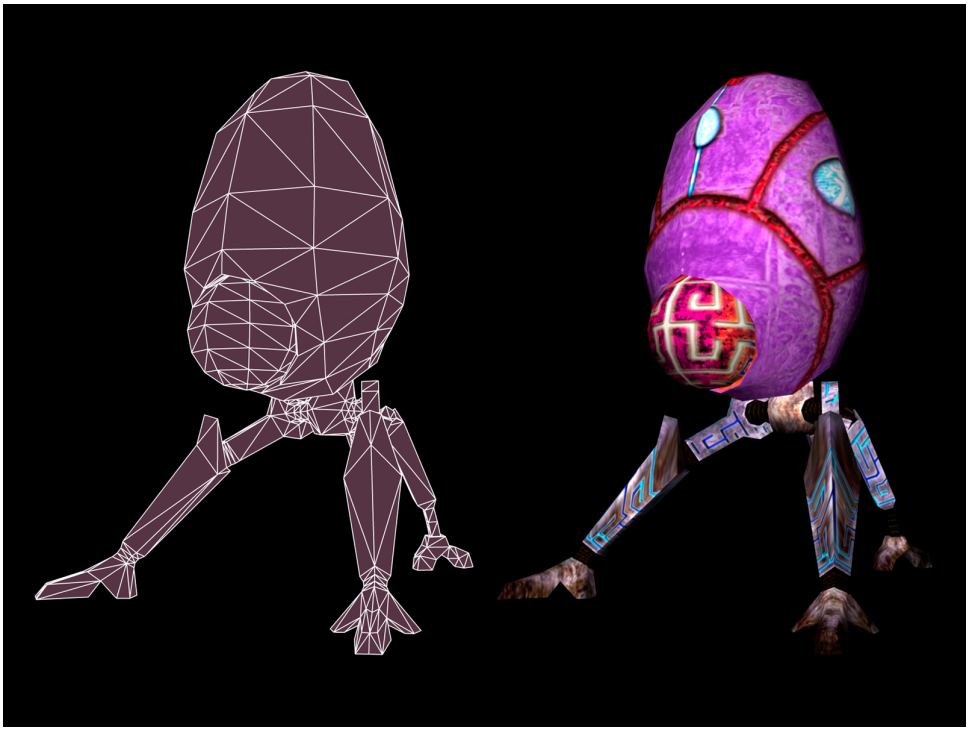

Figure 3 *Low polygon requirements and no bump map support means having to create details, form and illusion of depth through "tricks" in texturing and modeling*

Structure of the game narrative

The other notion that games bear little in the "good" storytelling traditions of the past is also unfounded. In fact, closer analysis reveals that games do possess the fundamental structure of traditional storytelling techniques, just in different

forms. For example, the use of poetics (literary conventions and rules) translates into the rules of the game. This incorporates issues like genre and conventions which in my case refers to a fusion of a platform side-scroller with a FPS using horror/fantasy as a theme. Next, the use of hermeneutics (literature's meaning) is the sense of the game's meaning. We must acknowledge that, like literary text, games are not separate from the world but are representative of culture and society. In the context of *Trivium*, the game is a projection of people who have experienced the pain of stress, alienation, and depression. However, being a game, the meaning will not be apparent until one plays it. In digital games, hermeneutic interaction is within the process of playing the game itself since story and gameplay are intertwined. This signifies that meaning is only created when players interpret the symbols on screen and connect them with their play experience. Lastly, the use of aesthetics (literature's effects) is relevant to the pleasures of the game or the emotional impact it gives. In most digital games, this is an aesthetic of control where players control the game through the protagonists just as the game controls the players through rules. Within this concept there is the notion of interactivity, immersion and identification within a system similar to "the suspension of disbelief" of literary texts. This also encompasses the spectacle and sensation of film studies in which the use of mise-en-scene, point of view, special effects, and sound can also be applied to digital games to enhance their aesthetics and hermeneutics. For example, *Trivium* incorporates the spectacle of scale and the use of desolate music to convey the sense of isolation and sadness. Overall, this indicates that "traditional" storytelling and games are not fundamentally different, but rather possess a structural similarity worth investigating.

Figure 4 *The spectacle of scale of the environments and characters*

Conclusion

It is important to recognize story and games as connected entities and look for creative ways of integrating them. However, games have to be played in order to make sense of the stories and their artistic vision, not appreciated as a passive spectator. This does not diminish the role of storytelling in games, but rather emphasizes that it is different. Yet it must be recognized that games and literature both provide the pleasure of immersing us in a world different from our own and share qualities of storytelling that are universal. As the phrases “Life’s a story” and “Life’s a game” go to show, games are the rising platform for creating compelling stories and should be explored for its narrative potential.

Bibliography:

Pat Harrigan and Noah Wardrip-Furin. (2007). *Second Person: Role Playing and Story in Games and Playable Media.* London: The MIT Press.

- Greg Costikyan. *Games, Storytelling, and Breaking the String*. pp 5-14.
- Will Hindmarch. *Storytelling Games as a Creative Medium*. pp 47-56.
- James Wallis. *Making Games That Make Stories*. pp 69-80.
- Jordan Mechner. *The Sands of Time: Crafting a Video Game Story*. pp 111-120.

Jason Rutter and Jo Bryce. (2006). *Understanding Digital Games*. London: SAGE Publications Ltd.

- Julian Kucklich. *Literary theory and Digital Games*. pp 95-111.
- Geoff King and Tanya Krzywinska. *Film Studies and Digital Games*. pp 112-128.
- Seth Giddings and Helen W. Kennedy. *Digital Games as New Media*. pp 129-147.

Nate Garrelts (2005). *Digital Gameplay: Essays on the Nexus of Game and the Gamer*. North Carolina: McFarland & Company, Inc., Publishers.

- Katie Whitlock. *Beyond Linear Narrative: Augusto Boal Enters Norrath*. pp. 189-207.
- Richard J. Hand. *Theatres of Interactivity: Video Games in the Drama Studio*. pp 208-220.
- Robin Woods. *Call and Response: Storytelling in the Neverwinter* Vault. pp 221-231.

Suzzanne de Castell and Jennifer Jenson. (2007). *Worlds in Play: International Perspectives on Digital Games Research.* New York: Peter Lang Publishing, Inc.

- Laura Ermi and Fans Mayra. *Fundamental Components of the Gameplay Experience: Analyzing Immersion.* pp 37-54

- Renata Gomes. *The Design of the Narrative as an Immersive Simulation*. pp 55-62
- Ulrike Spierling. *Interactive Digital Storytelling: Towards a Hybrid Conceptual Approach*. pp 63-76

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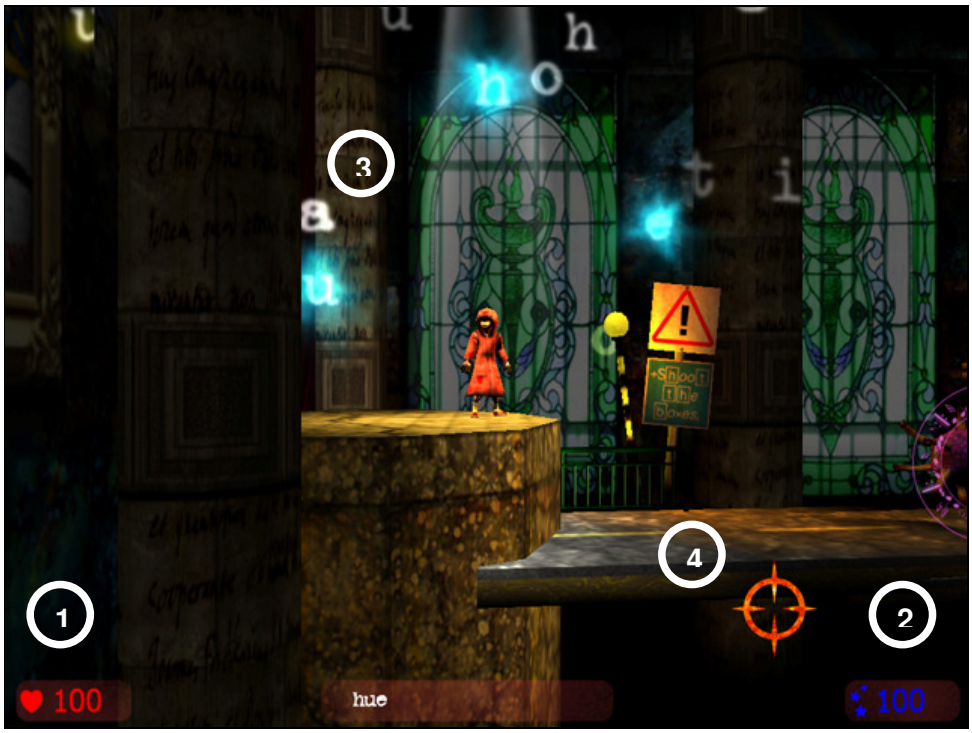
Game Design Document

By Zhou Xuanming

Overview

- Three player multiplayer game.
- Each player uses a different control interface.
  - ***Mouse***
  - ***Keyboard***
  - ***Joystick***
- Cooperative gameplay.
- No overlap of roles.
- Platformer with side-on view.
- Movement restricted to one plane.
- Camera follows lead character.

In-game Interface



① **Health** is shown on the bottom-left of the screen.

② **Magic** is shown on the bottom-right of the screen.

③ Captured letters are depicted with a blue glow and shown on the bottom-center of the screen.

④ Mouse player aims with the crosshair-shaped cursor.

Resources

- Two resources: Magic and Health.
- Magic regenerates gradually but slowly.
- Running out of Magic makes some skills unavailable, affected skills will display a message reading “Insufficient Magic” on the playing screen.
- Running out of Health represents the death and failure of the team. The consequence of such a situation is the restart of the current level.
- Both Magic and Health can be replenished by certain player actions stated below.

Mouse Player Details

- Represented in-game by a cursor that is controlled by the mouse.
- Role of the mouse player is to be the main offensive force of the team.
- Cursor changes to reflect current offensive power of the player.
    - **First grade:** Damages only enemy at spot targeted by cursor.
    - **Second grade:** Damages enemy at spot targeted by cursor, several projectiles spawn from targeted spot and disperse in random directions, damaging any enemy in contact with the projectile.
    - **Third grade:** Similar to second grade, with additional lightning bolt dealing damage to anything vertically above or below targeted spot.
- Player moves mouse to aim using cursor.

- Player presses left mouse button to fire at position targeted by cursor.
- Each shot fired by the player takes up Magic.
- If fired shot hits the lead character, the team's Health will be damaged.
- When there is not enough Magic, no more shots will be fired until there is sufficient Magic. The words "Insufficient Magic" will be displayed.
- Creatures with a green-colored halo can be dealt a headshot. To deal this headshot, fire within the halo. After a successful headshot, Health and Magic will be replenished for the team.
- Creatures with a purple shield in front of them cannot be damaged by any attacks of the mouse player, including higher grade attacks.
- Some objects like rusted crates can be shot away by the mouse player.

Keyboard Player Details

- The keyboard player is represented on screen by an input dialog at the bottom-middle of the screen.
- The role of the keyboard player is to provide supportive assistance to the team, giving Health, Magic and damage bonuses where necessary.
- The keyboard player can capture the ethereal letters floating around on the screen by typing them into the input box.
- The player cannot capture more than 5 letters.
- Pressing backspace removes the last letter typed and releases the corresponding letter that was captured previously.
- Forming 3-5 letter words with the floating letters causes effects that increase in magnitude with word length:
    - 3 letter words explode and damage enemies around them.
    - 4 letter words damage enemies and replenish Health and Magic of team.
    - 5 letter words damage enemies, replenish resources, and create lightning bolts that damages every enemy on screen.
- When forming 3-5 letter words that include alphabets from special objects on screen, certain effects will be created:

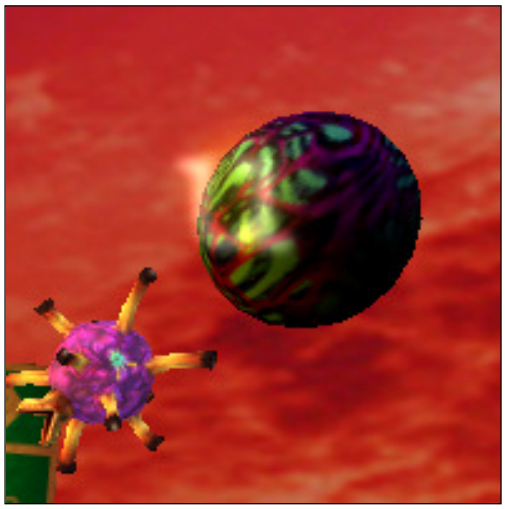
- When forming a word using a letter from the Healing Shrine, all captured letters will replenish the Health of the team.
- When using a letter from the Magic Shrine, all captured letters will replenish the Magic of the team.
- When using a letter from a locked door, the locked door will be destroyed.
- When using a letter from an ethereal platform or door, the platform or door will turn solid, repeating this will turn the platform or door ethereal again.
- When forming a 3-5 letter word from flaming letters, the offensive power of the mouse player will be increased to a maximum of three grades.

Joystick Player Details

- The joystick player's representation is the lead female character.
- The joystick player is the only "physical" representation of the team in the game world. This means that all damage taken will be taken through the lead character, and all enemies will attack the lead character.
- The role of the joystick player is then to evade hostiles, survive and bring the team safely to the exit on each level.
- The joystick player allows the lead character to perform several types of movements through the corresponding combinations:
  - To move left and right on the plane perpendicular to the camera direction, player presses the left and right directions on the directional pad respectively.
  - To run in that direction, double-tap the corresponding direction.
  - To jump, press the jump button on the joystick.
  - To double-jump, press jump again while in mid-jump.
  - To dash in the air, double tap the desired dash direction while in mid-jump.

Enemies

- **Creeper**
  - This creature travels constantly in one direction until it hits an obstacle, the turns around and moves in the other direction.
  - It doesn't have a ranged attack, and damages the lead character on impact.
  - Can be killed easily, but has a shielded version that cannot be destroyed unless it hits the player.

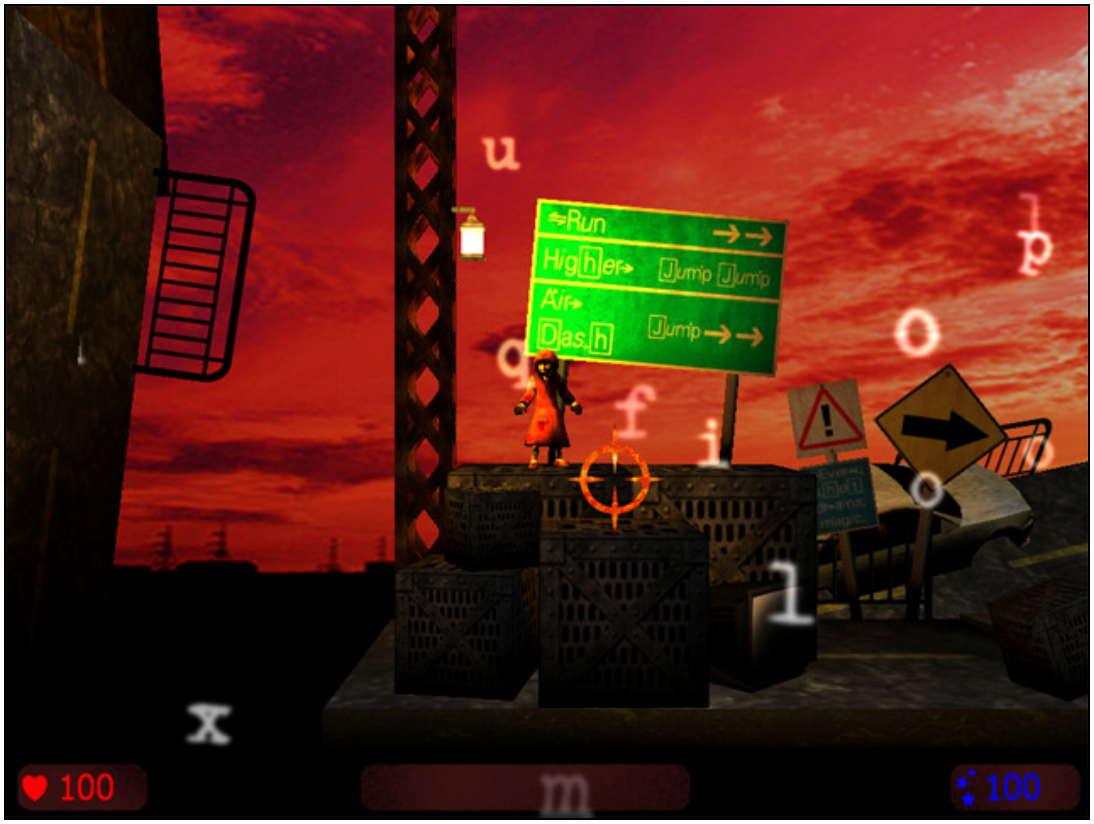


- **Egg**
  - This creature cannot be destroyed.
  - It periodically spews out Creepers like cannonballs that lunge towards the joystick player.
  - Player can shoot the Creepers but the Egg is shielded.

- **Pod**
  - This creature is a giant roadblock that obstructs the joystick player's way.
  - When shot or neared, it awakes from its slumber and fires a large projectile in a line parallel to the ground towards the player's direction periodically.
  - This enemy has a lot of health and is extremely hard to kill.
  - This enemy also comes in a shielded version that cannot be destroyed, so becomes a timing puzzle for the player instead, requiring him or her to dodge the projectiles.

- **Metronome**
  - This creature darts around quickly in the air.
  - The movement pattern for this enemy is dart-dart-attack.
  - When it pauses to attack, it presents a good opportunity for the mouse player to shoot it.
  - It attacks by firing a ring of projectiles that travels away from the metronome in a radial fashion.
  - This enemy has a headshot region that can replenish the Health and Magic of the team when the mouse player shoots within its boundaries.

Levels



- **Room 01 – Roadside**
  - This room is designed to teach the players the basic controls and mechanics of the game.
  - We introduce the Creeper here.
  - We have signboards in the background that holds instructions for players to read and follow.
  - Joystick players learn to walk, run, jump, double jump and air-dash here.
  - Mouse players learn to shoot and discover shielded enemies.
  - Keyboard players learn to regain Health for the team and open locked doors.

- **Room 02 – The Church**
  - We introduce the Egg here.
  - We up the difficulty here and present the first branching path.
  - We have a door at the bottom and an opening guarded by a Egg above. Player can choose to open the locked door or brave the Egg to beat this area.
  - Players learn to shoot boxes and regain Magic in this room.

- **Room 03 – Clockworks**
  - We introduce the Pod here.
  - The joystick player learns to avoid spikes here.
  - The keyboard player learns to increase the offensive ability of the mouse player and open/close ethereal doors.

- **Room 04 – Pipes**
  - We introduce the Metronome here.
  - Large space to navigate, dotted with enemies.
  - All elements taught in the previous levels make an appearance in this level.

Trivium

~Project Archives~

The story begins with a mysterious Girl waking up in a strange environment with no memory of who she is, where she is, and what her purpose is. Upon awakening, she is greeted by two "spiritual" locals called Python and Perl who claim to be summoned by her. Despite knowing much about the environment and the rules of the world they call The Mystic Palace, they repeatedly speak in riddles and give cryptic and sometimes nonsensical advice. In addition, they insist [illegible] Girl is the god?child of prophecy who has come to save their home [illegible]. With no memory to reflect upon, the Girl [illegible] but constantly refuses to admit she is the god?child they claim her to be. Before she commences her journey, she meets the [illegible] entity called Fear who appears in front of her to taunt her before mysteriously disappearing.

With the help of her two mischievous Guides, she makes her way through her weird surroundings while eliminating any of the Death's Hand that stalk her. Whenever she attempts to transverse [illegible], she encounters a Gatekeeper: a more powerful type of Death's Hand that guards the stairs to the next level. On defeating each Gatekeeper, she frees residents of The Mystic Palace that are held captive. Special mention must be given to three of the prisoners: a high priestess and royal mage named Ruby and Oz respectively, and a small mole librarian named Shakespeare because they seem to have a more intimate relationship with the Girl than most other residents. Furthermore, they are the ones who would provide her the most vital information regarding her memories and the prophesy.

After defeating the Gatekeepers of Sorrow, Pain, Anger, and Guilt, she finally battles Fear in the Throneroom at the top of The Mystic Palace. Upon defeating Fear, a hidden door reveals itself to her and she opens it, revealing the true bearer of Death's Hand: the Goddess of Dreams, who looks like an older version of the Girl. Shocked and confused by this revelation, the Girl and her Guides question the reason behind this sudden turn of events. The Goddess merely presents a flow of cryptic remarks before transforming into the Goddess of Death to destroy her.

Trivium Design Works

The Girl

A CONCEPT DESIGN

The character is a child that desires to be protected. Thus, she was designed with a raincoat which acts like a protective second skin. Although generally well-natured, she shows hints of self-loathing, cynicism and skepticism. The maturity of her eyes and facial expressions shows that she has endured experiences beyond most her age.
[Concept design: Tan Hong Jin & Ho Qingxiang]

B 3D MODEL

Her final look. Bandages were added to her hands and legs, as well as stitches and blood were added to her coat to heighten the effect of her being hurt or tortured. Various fairy tale motifs were also added, like the wolf image on her bag (Red Riding Hood), her magic butterfly boots (Dorothy of Wizard of Oz). the golden rose on her coat near her chest (Beauty and the Beast, Sleeping Beauty) and the watch tied to her neck. (Alice of Wonderland).
[3D Modeling / Rigging / Texturing: Ho Qingxiang]

Trivium Design Works

The Girl: Elemental summons

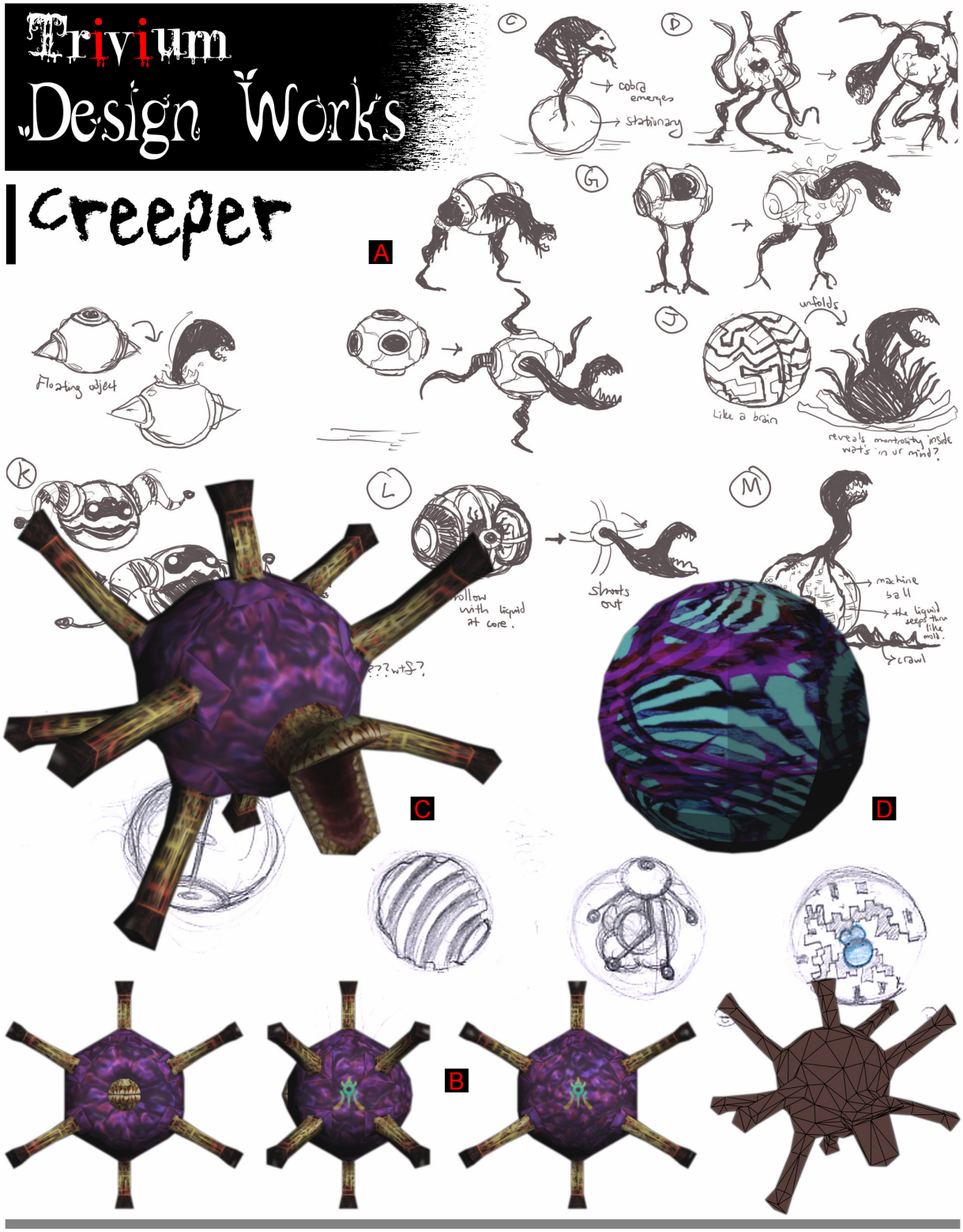
CONCEPT DESIGN

Initially, it was planned for the spellcasting player to be able to do summons for the Girl. These summons represent some of the fundamental magical elements, namely wind, water, earth, flora and darkness. These summons would emerge from the Girl's bag and wrap around her to offer defense and offense. Sadly, this idea was later abandoned due to techanical constraints.

[Concept design: Chua Eng Chee & Ho Qingxiang]

Trivium Design Works

Creeper



A CONCEPT DESIGN

The main theme of this character is "Virus and Larva". Worms and germs were considered.
[Concept design: Tan Hong Jin, Chua Eng Chee & Ho Qingxiang]

B 3D MODEL

The final look. It has 10 tentacles and a retractable head. The symbol of "Death's Hand" is shown on its sides and back.
[3D Modeling / Rigging / Texturing: Ho Qingxiang]

C ATTACK

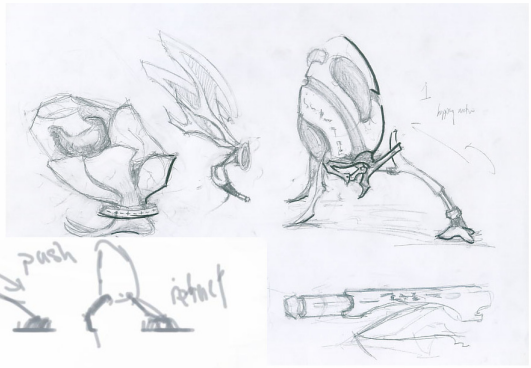
When attacking, it will pop out its head and open its jaws to bite its target.
[3D Animation: Ho Qingxiang]

D EGG

This entity functions as the birth place for Creepers. It shoots out Creepers like a cannon. The fingerprint markings on its skin are to signify the "Touch of Death".
[3D Modeling / Texturing: Ho Qingxiang]

Trivium Design Works

Pod



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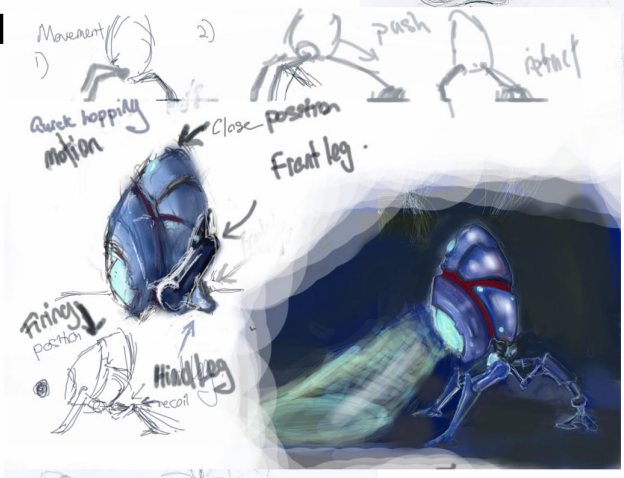
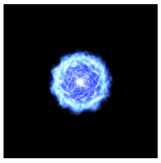
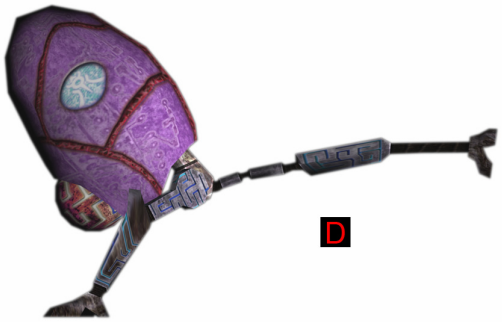




E

C



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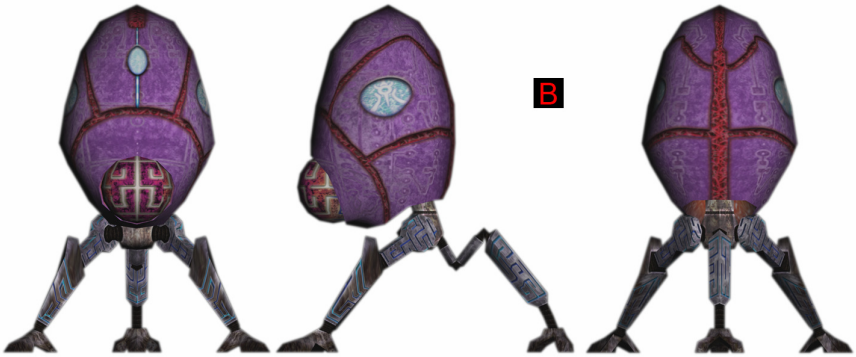

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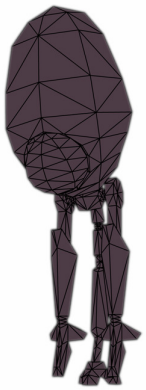


A Concept Design

The main theme of this character is "Virus and Cacoon". Accordingly, this character has 3 modes: sleep, move and attack.
[Concept design: Tan Hong Jin & Ho Qingxiang]

B 3D Model

The final look. It possesses 3 legs and a revolvable head. Its symbol is shown in the screen imbedded on its sides.
[3D Modeling / Rigging / Texturing: Ho Qingxiang]

C Sleep Mode

In its sleep mode, the character balances its weight on one leg and has a "calmer" version of its head outward.
[3D Animation: Ho Qingxiang]

D Move Mode

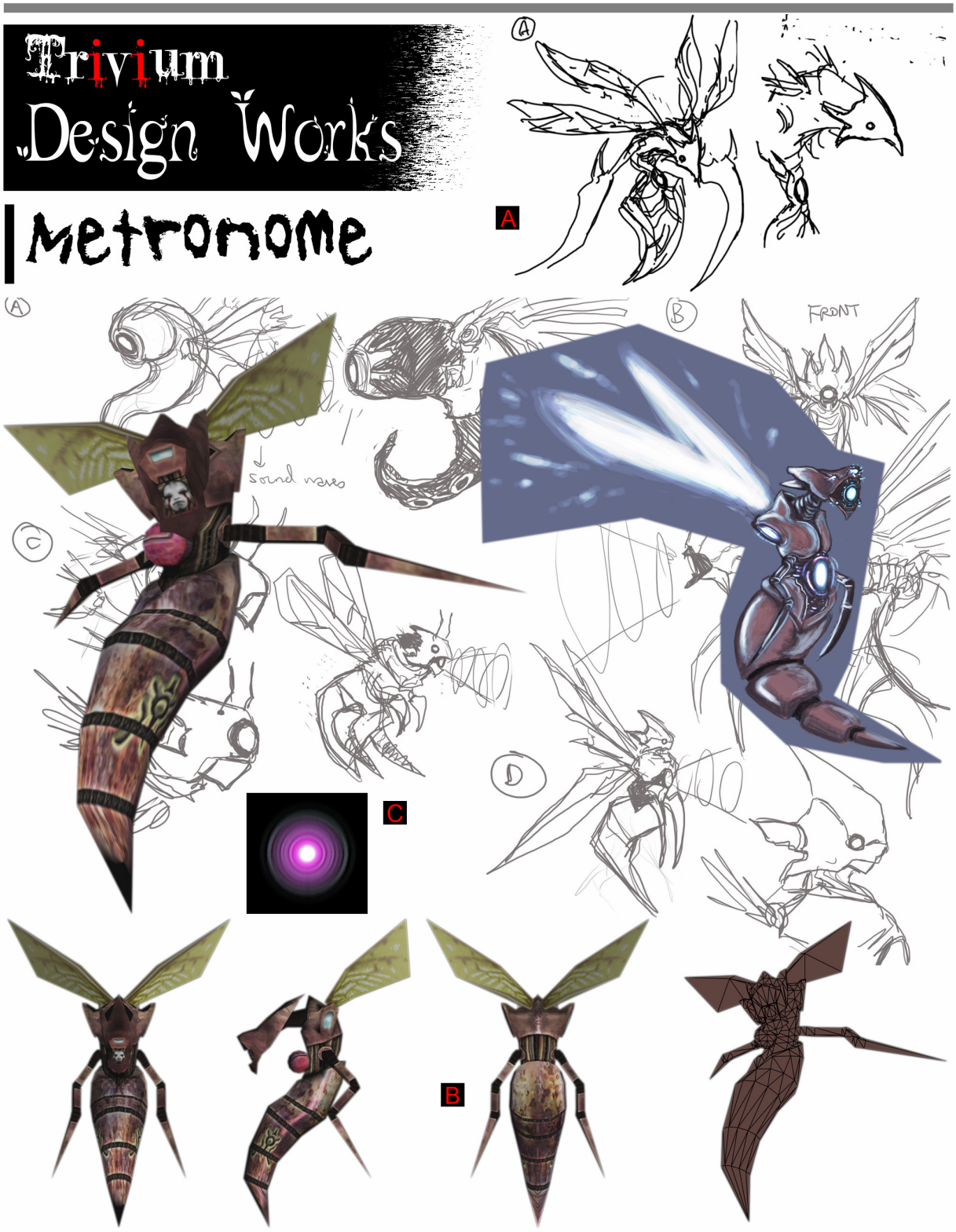
It hops and drags itself forward or backward to move. Note that its hind leg is able to stretch.
[3D Animation: Ho Qingxiang]

E Attack

It shoots balls of concentrated energy when it attacks.
[Sprite Animation: Ho Qingxiang]

Trivium Design Works

Metronome



A CONCEPT DESIGN

The main theme of this character is "Sound and Flight". Humming-birds, bats and wasps were considered in its design. Its name signifies the 2 modes it has: move and attack, as well as the way its wings move in a metronome fashion.
[Concept design: Chua Eng Chee & Ho Qingxiang]

B 3D MODEL

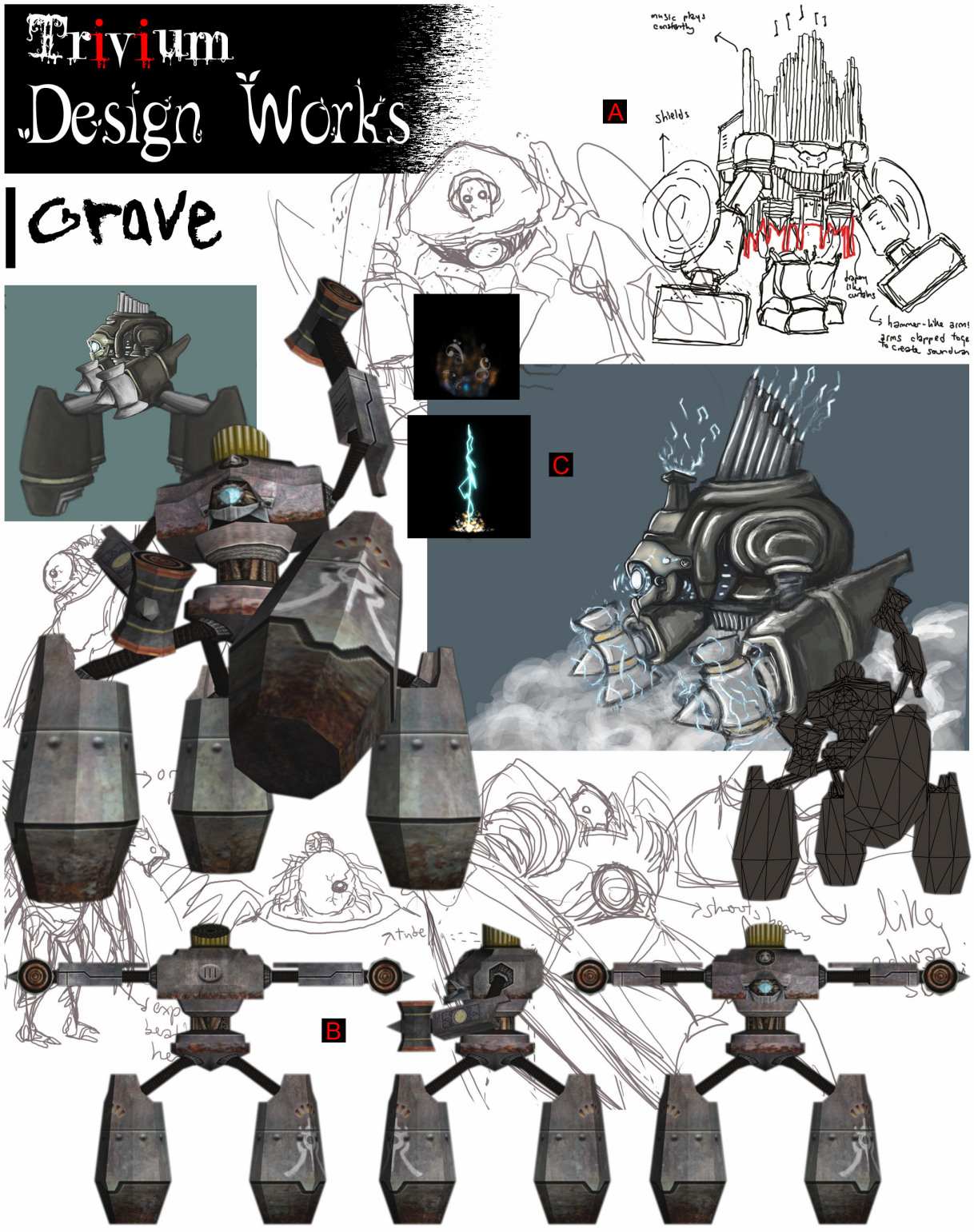
The final look. It has multiple articulation points to allow for considerable flexibility. Its head is actually within the mouth of the exterior head with tears of blood flowing out of its eyes. Its 2 wings flap rapidly to allow its body to hover in mid-air. The sphere in its center is its "battery heart", and the symbol of "Death's Hand" is cut into its armor near its tail.
[3D Modeling / Rigging / Texturing: Ho Qingxiang]

C ATTACK

It releases spheres of sound in all directions when it attacks.
[Sprite Animation: Ho Qingxiang]

Trivium Design Works

Grave



A CONCEPT DESIGN

The main theme of this character is "Sound, Power and Weight". As such, it comprises of various heavy objects like hammers, drums and metal pipes, and is one of the largest enemies. Its name descibes its slow movement as well as its ability to bring forth dread and heavy damage.
[Concept design: Chua Eng Chee & Ho Qingxiang]

B 3D MODEL

The final look. It has 2 hammer hands and 4 drum-like spider legs. Both the legs and hands can stretch. Note the the legs also function as furnaces to power the body. It also has 2 heads, the lower one being able to emit a sonic energy beam. Its symbol is painted on two of its legs.
[3D Modeling / Rigging / Texturing: Ho Qingxiang]

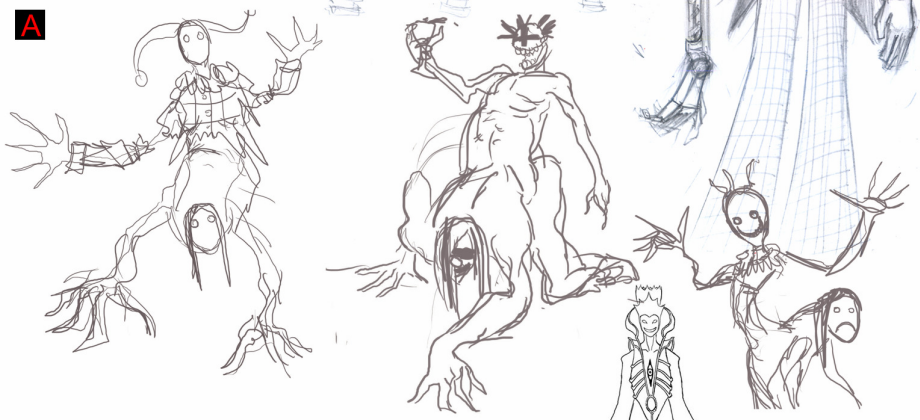
C SPRITE

It can strike down lighting, as well as emit "music" smoke out of its organ-like pipes.
[Sprite Animation: Ho Qingxiang]

Trivium Design Works

SORROW & FEAR

A



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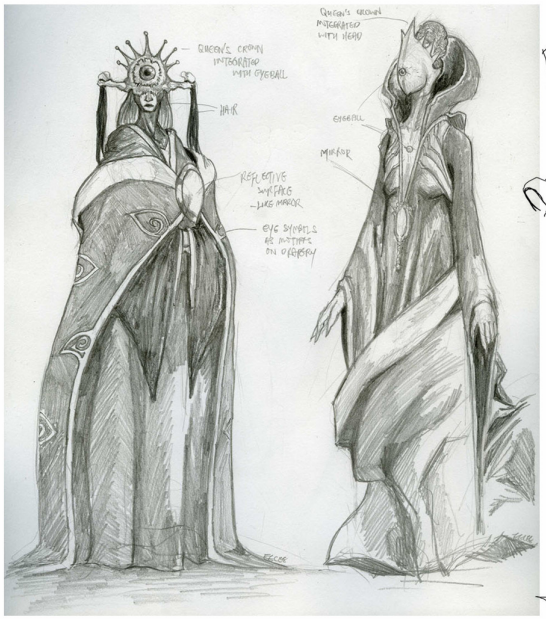


A GATEKEEPER : SORROW

One of the Gatekeepers that function as boss characters for each level. Gatekeepers are entities closest to the Queen, much like family. As the first level is about "Sound", this character was designed with the concept of "Speech and Hearing". Just as people have two ears, Sorrow was designed as conjoined twins with a flamboyant attitude. Ever the "gentlemen", they seek pleasure from others' sorrow.
[Concept design: Chua Eng Chee, Tan Hong Jin, & Ho Qingxiang]

B QUEEN OF DARKNESS : FEAR

The queen and overall commander of Death's Hand. She commands the darkness from which all her minions spawn. Since the disappearance of the Goddess, she has emerged to take over the Mystic Palace. She seems to be well-informed of the Goddess and her prophecy, and know much about the Girl's existence and memories. The reasons behind her actions remain a mystery.
[Concept design: Chua Eng Chee & Ho Qingxiang]

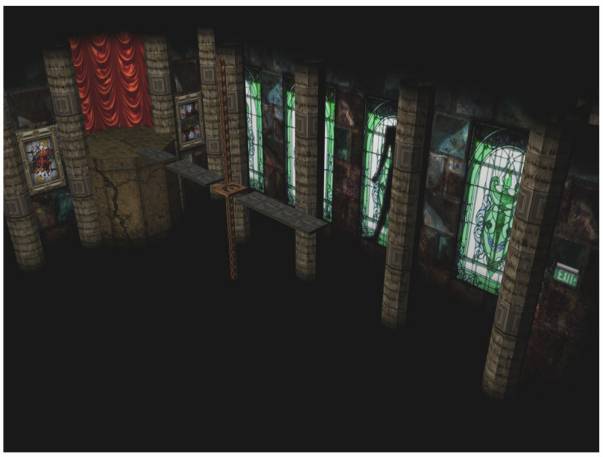
Trivium Design Works

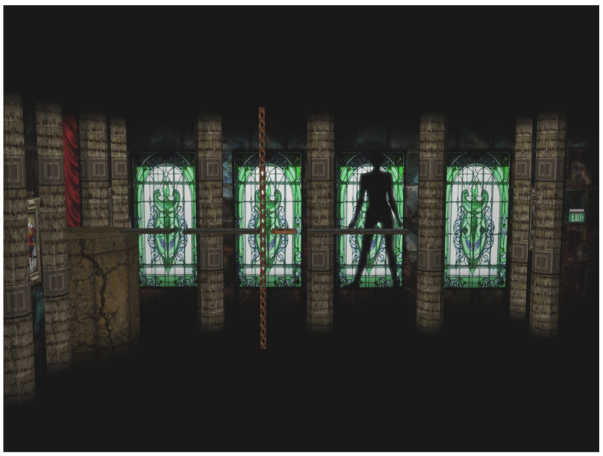
Environments

As the game is a side scroller, most of the environments were designed to be seen from one perspective. Due to the game's theme and story, the environments were created to feel surreal and dream-like. The main theme of the first level is "Sound". Here are some of the initial designs. **[Design: Ho Qingxiang]**

CHURCH

This was slotted to be at the beginning of the game. The church concept highlights the idea of worship which fits the arrival of the "god-child". Churches are also known to be places of mourning which relates to the morbid nature of the environment. Furthermore, the fusion of a theatre stage into the church helps to enhance the notion of a play being performed. Words are inscribed onto the pillars while portaits of poker cards are hung on the walls (the images being the King, the Queen and the Joker). On the 3rd window, a silhouette of a giant is seen standing menacingly with what looks like a knife in hand. And on the far right, an exit sign signifies the direction of movement.





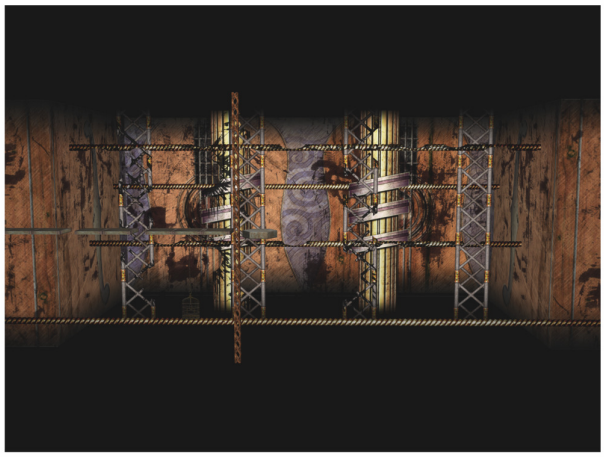
PIANO KEYS

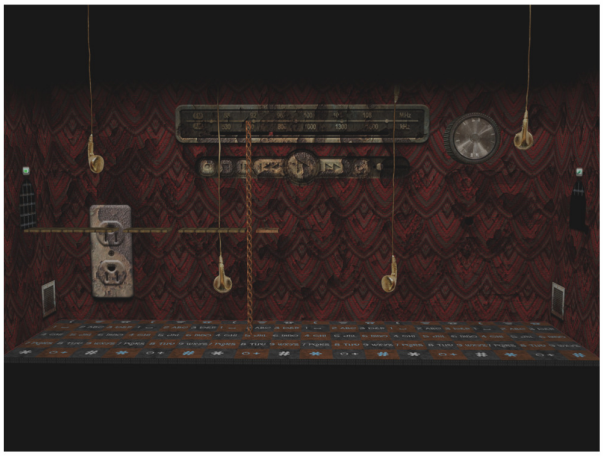
This room was designed to resemble a giant piano. However, instead of piano keys, the rectangular blocks are actually coffins with masks embedded on the top. Thus, in essence, this room is actually a giant mortuary or graveyard. The words painted on the blocks can either be read as "I've tried; but still; I've tried; but still;" or "I've tried; I've tried; but still; but still;". The wallpapers on the sides are actually musical score sheets with coffee stains on them, while the pendulum that swings in the middle is a giant scythe hook. If you look carefully, you will find road fences placed inverted on the platforms.

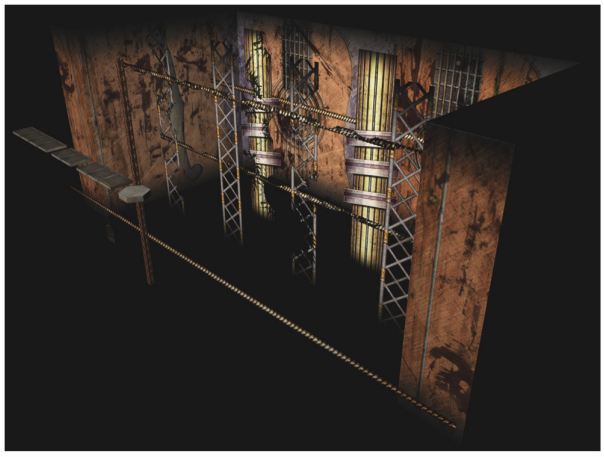
Trivium Design Works
Environments

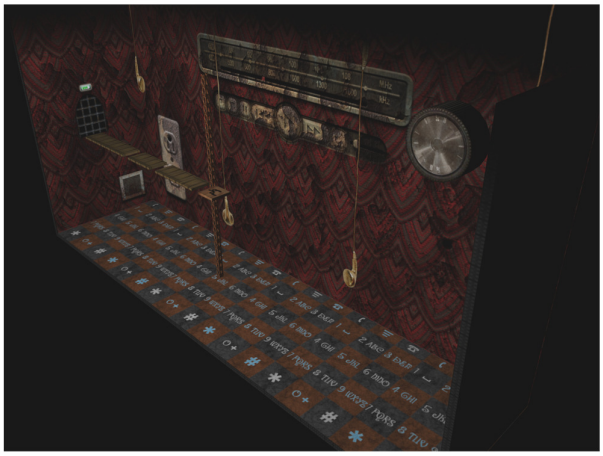
Strings

This room is basically comprised of screws and string instruments. It is evident that the objects are being "consumed" by darkness. If you look carefully, you may find bird cages hanging from the platforms.









Handphone Radio

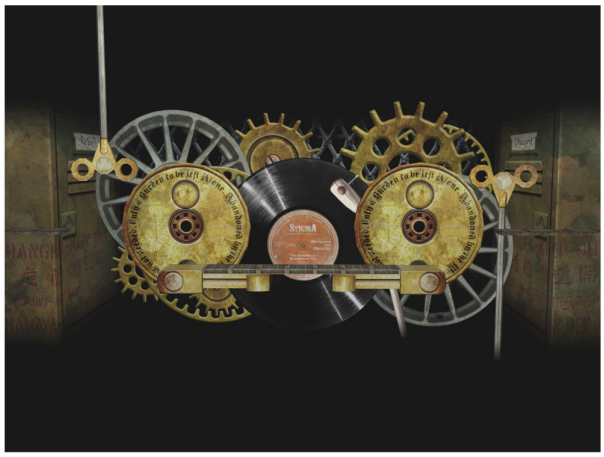
This room is a fusion of a radio and a handphone. The golden objects hanging from the ceiling are earphones.

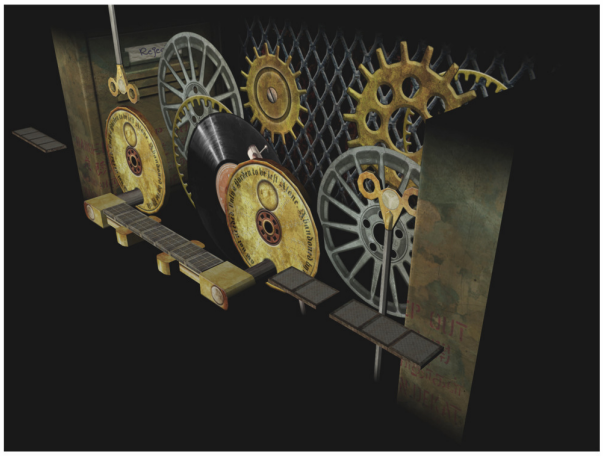
Pipes

This room is essentially a giant pipeline. The structure in the center is a conglomerate of trumpets, horns, meters, and pipes. You will notice that a sky is painted at the bottom of the room and that the balloons are floating "downwards".

Trivium Design Works

Environments





GEARS

This is the room that has the most symbolism injected into it. From the gramophone record and the music disc to the huge lockers and the turn-keys, all the objects in this giant music-box-like room are ladened with meaning. For example, symbols of an angel and the caduceus are engraved on the sides of the turn-keys, while the lockers have the labels "Reject" and "Discard" written on them. By connecting these various symbols with personal knowledge and experience, players would be able to draw conclusions to the game's hidden story.

Trivium Design Works

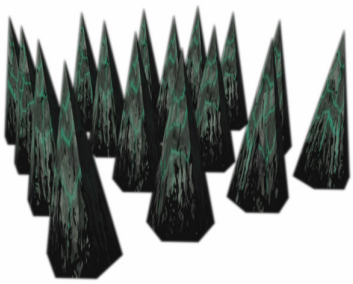
objects

Scattered throughout the environments are various objects that help compose the scene. These objects may range from platforms to lights to other little things that often go unnoticed. Here are some of these items.
[Design: Ho Qingxiang]

PLATFORMS WALLS AND DOORS

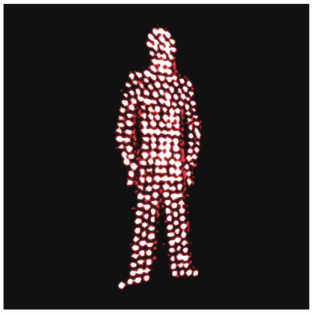
EXIT SEWER

CRYSTAL SPIKES



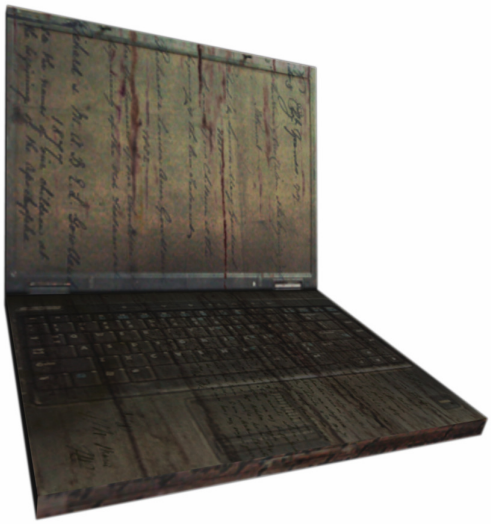
Trivium Design Works

objects



■ LIGHTS

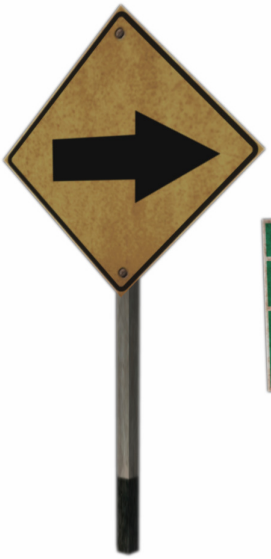
■ HEALTH AND MAGIC SHRINES



■ LAPTOP BOOK

■ BELL

■ SIGNBOARDS

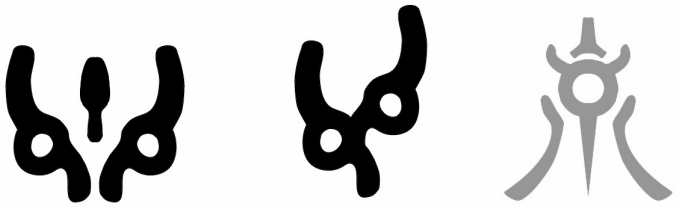


Trivium Design Works

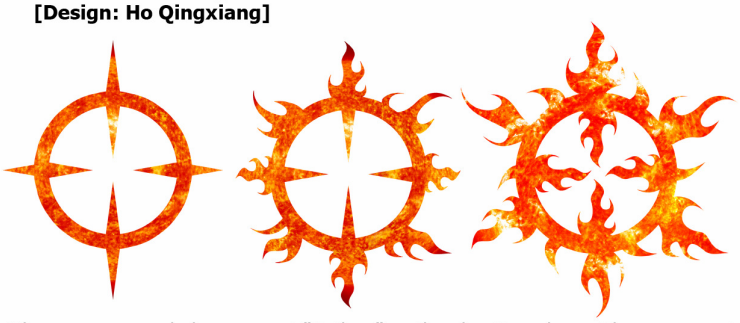
symbols

A symbol is something such as an object, picture, written word, sound, or particular mark that represents something else by association, resemblance, or convention. In fact, all language consists of symbols. Presented here are some of the symbols that can be found in the game.

This is the shield used by "Death's Hand" in the game. All enemies covered by the shield are immune to any damage inflicted upon them by the players. When shot, the shield release an echo which blocks all attacks. The shield is comprised of various musical symbols arranged in a manner that resembles a magic circle.
[Design: Ho Qingxiang]



These are the symbols that represent "Death's Hand". The symbols on the left are the earlier renditions while the symbol on the right represents the final look. The earlier drafts sought to incorporate the idea of an omniscient and omnipresent existence, as represented by the stylised eyes. The shape of the final symbol on the other hand resembles an open palm that holds life in its center. It also resembles the hood of the Grim Reaper with the sharp point being its scythe. Although the earlier renditions were not used to represent "Death's Hand" they were still incorporated in the game as markings of various platforms.
[Design: Tan Hong Jin]



These cursor symbols represent "Python" or the shooting player. They represent different levels of offense. The more complex it gets, the stronger the attack. By the 3rd form, the player would even be able to strike down lightning. The concept of Python is that he represents the Girl's "Right Wing of Madness", capable of inflicting massive destruction with the touch of a button. He is represented by the sun and the elements associated with it, like fire and lightning. Being a shooter, his symbol is shaped like a cross-hair target marker.
[Design: Ho Qingxiang]

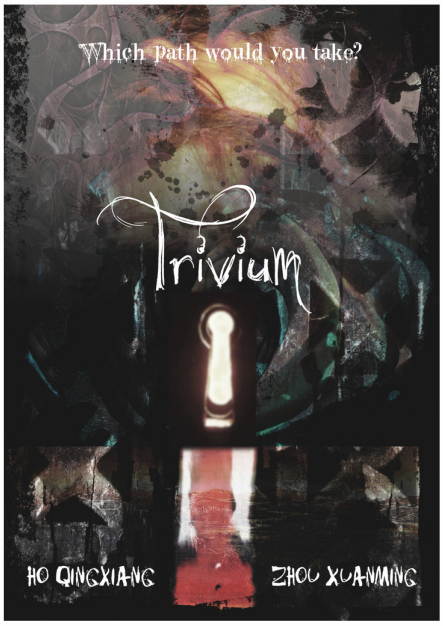
"Perl", or the spellcasting player, is the opposite of Python, in that her actions require a lot more thought. She represents the "Left Wing of Reason" and is represented by the moon. The elements associated with her include ice and darkness. When the player types in a word of 3-5 letters and presses enter, the letters explode into little crystal bits which cause damage to the enemies upon impact. Being a "keyboard" player, her symbol is comprised of many letters layered above one another. The letters in the environment also serve another purpose of pushing forth the notion of a storybook.
[Design: Zhou Xuanming]

This is the storybook shown in the intro-cutscene. Notice that the symbol of Death's Hand is on the cover, signifying that this is a story of Death. The storybook element also helps to reinforce the idea that the game situation is merely a story taking place in another world and being read by a entity from a "higher plane". If you look closely enough, you may even find some scribbles on the book cover.
[Design: Ho Qingxiang]

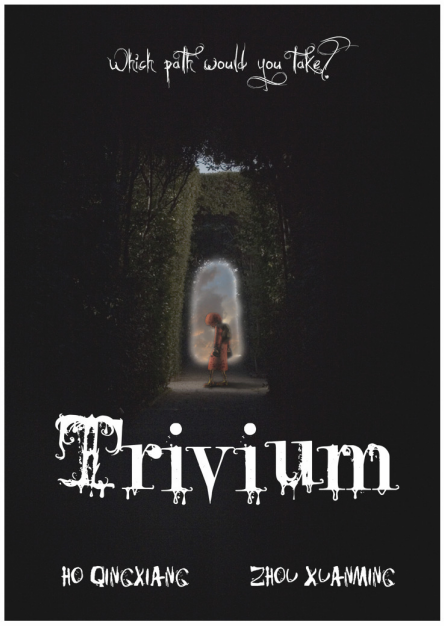
Trivium Design Works

Posters & Title screen

In conjunction with the game, the posters and title-screen were created to convey the same sense of fantasy, surrealism and solitude.
[Design: Ho Qingxiang]



The more abstract, Dave McKean style-like version.



The more cinematic version.

POSTERS

The word Trivium is the singular form of "trivia" which means "junctions of three ways" in Latin. As a name, this word beautifully illustrates the core concept of this game in its distinctive use of three separate human interface devices: the keyboard, mouse and gamepad. Three players have to simultaneously play the game and work together in order to overcome the obstacles that come their way. Additionally, the name further stretches to signify unimportant or "trivial" items as well as the Roman equivalent of the Greek goddess Hecate. As to how these connections relate to the game, you'll have to play it to find out.

TITLE SCREEN

The keyhole at the top also doubles as a power switch. The concept is: pressing the "on" button will simultaneously open up a new world. In addition, the keyholes at the bottom are in multiples of threes which ties in with the game's concept of three players. The image of the walking girl is basically to push forth the idea of a traveller in midst of a journey.

Trivium Design Works

Prelude

This is the "before play" that serves to introduce the game's plot. Within this cut-scene are various hints that could reveal the true narrative behind the game. Presented in a storybook fashion, it aims to suck the players into the world of the "fairytale".

[Design: Tay In Ing & Ho Qingxiang]

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The Mystic Palace being made up of wooden blocks is meant to invoke a sense of child-like fantasy and innocence to the scene, Similarly, the multiple planes of presence is meant to portray the multiple dimensions of the game's story.

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Note that the block the girl is holding is special in that it is the only one glowing.

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Prelude

P:03

The girl is sucked into a "tear" in the page and drops the block she was holding earlier. An ominous shadow looms at the top right corner.

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The "tear" shrinks away, the Mystic Palace collapses, and the red block drops slowly into darkness.

Trivium Design Works

Prelude

P:05

The background image becomes warped and distorted.

P:06

The block descends into ruins.