

Design Documentation of *Sun Valve*

Fall Semester 2011

By Scylla & Charybdis

Amount of characters: 49.631

Amount of pages, including bibliography and endnotes: 40

SCYLLA & CHARYBDIS



Abstract

This game design document is an overview of the game 'Sun Valve' developed by 'Scylla & Charybdis' during the fall semester 2011 in the Game Design course at the IT University of Copenhagen, Denmark.

SCYLLA & CHARYBDIS



Contents

1. Introduction.....	5
1.1 Collective Ideology	5
1.2 Concept	6
2. The Game.....	7
2.1 Introduction.....	7
2.2 The title	8
2.3 Setting	8
3. Story	8
3.1 Storyline.....	8
4. Characters	12
4.1 Playable Characters.....	12
4.2 NPC's	12
5. Graphical Style	12
5.1 Visual aesthetic	12
6. Audio.....	13
6.1 Music	13
6.2 Sound Effects.....	14
7. Gameplay.....	15
7.1 Global game rules	15
7.2 Game Goal	15
7.3 Progression table & Learning Curve.....	15
7.4 Span of control & Abilities	17
7.7 Scale.....	18
7.8 Time	19
7.9 Difficulty.....	19
7.10 Saving	19
8. Level Design.....	20

SCYLLA & CHARYBDIS



8.1 Game world.....	20
9. System	21
9.1 Camera.....	21
9.2 Interface	21
9.3 Engine	22
9.4 Platform	22
10. Marketability	23
10.1 Target audience.....	23
10.2 Unique Selling Points	24
11 Organizational description of Scylla & Charybdis.....	24
11.1 Members.....	24
11.2 Team structure and responsibilities.....	25
11.3 Process.....	27
11.4 Method	28
11.5 Development process	29
11.5.1 Concept development	29
11.5.2 Game development and testing.....	30
12. Play-testing.....	33
12.1 Mechanic playtest and usability	34
12.2 Recruitment	34
12.3 The Tests	35
12.4 Results.....	35
12.5 Critical reflection	36
14. Bibliography.....	36
15. End notes	39

SCYLLA & CHARYBDIS



1. Introduction

This game design document aims to clarify and provide a detailed description of the game *Sun Valve* developed by Scylla & Charybdis' during the fall semester 2011 in the Game Design course at the IT University of Copenhagen, Denmark. This description is divided into different segments within the paper: Firstly, the document describes the ideology and the concept of the game. Then the document mainly focuses on describing the following aspects of the game: the story, gameplay, visuals, sound, level design, platform, and marketability, respectively. Then the final part of document will elaborate on the development process and method of the development team's internal work flow.

1.1 Collective Ideology

Scylla & Charybdis collectively subscribes to the ideology of highlighting and innovating on the semantic aspect of games in accordance with the design ideals of player activity and agency. We believe that games are not only able to be 'fun' and 'entertaining', but they are also able to provide reflections and critical ideas. Games are not merely throw-away consumption of entertainment, but contain artistic endeavors that convey meaning and human intention. Like all other artifacts in the world, they carry various degrees of intended and unintended meaning, formed by both the creators and the users of said artifactsⁱ. We consider it a creative opportunity to take advantage of this meaning, in so far as to create artifacts with depth, beauty and expression of both user and creator.

Scylla & Charybdis design and develop games with the above in mind. Our approach is founded on the normative notion that designers or architects of experienced artifactsⁱⁱ should be aware of the fact that they are manifesting their ideas into the world and that these ideas are communicated and experienced

to other human beings. Therefore, we simply do not consider the task of developing a game to be entirely formalisticⁱⁱⁱ: It is possible for a game to be entirely without any references to meaningful objects^{iv}, but in our opinion it would be too reductionist to completely neglect the semantic aspect of them. Consequently, the semantic aspect of games should also serve as a significant contribution to the experience of the players of our games. Therefore, our games should not solely be mechanically interesting artifacts, but also semantically important experiences.

1.2 Concept

The concept of Sun Valve is inspired by the thought experiment entitled ‘The Experience Machine’ put forth by the libertarian philosopher Robert Nozick^v. His thought experiment is an attempt at refuting hedonistic ethics by highlighting the inherent value of authenticity in experience^{vi}. The ‘Experience Machine’ offers the moral dilemma of choosing between either an illusory, simulated highly hedonistic experience versus an authentic and realistic state of experience. By putting forth this dilemma Nozick appeals to our intuitions about the fact that other considerations than pleasure should be taken into account, in this case authenticity being more important than pleasure. Therefore, hedonistic values are not sufficient in the description of ethical considerations.

Whereas Nozick considers the thought experiment as indicating the flaws of hedonistic ethics, our game will merely present this moral dilemma to the player, with which he or she can decide which state of experience to choose^{vii}. However, we were aware of the various pitfalls in relying excessively on the choice of the dilemma^{viii}, and we strived for making the consequences of the particular choice be the most significant.

SCYLLA & CHARYBDIS



Therefore, the thought experiment serves as structural inspiration for our game and the intention is to implement the moral dilemma in a semantically diverse narrative setting^{ix}, in which the player is able to individually choose between either states of experience.

2. The Game

Sun Valve is adequately described as an exploratory, immersive and reflective experience. The game situates the player within a relatively subtle narrative with minimal exposition, while also allowing her or him to take in and enjoy the experiential process of living on an island. This experiential process is teleological, in so far as to culminate in the final presentation of the moral dilemma of choosing either a hedonistic, simulated experience, or an authentic, but less pleasurable experience. This binary decision is also an allegory to games themselves – the player has the choice of continue playing the game (through the decision to return to the experience machine and continue the game), or end the game and return back to his or her actual reality (through the decision to leave the island and the game ending).

2.1 Introduction

The player assumes the role of a lighthouse keeper on a derelict island, on which she or he completes the tasks and pleasures of that particular character. After completing these tasks the character is taken away to an entirely different qualitative experience, yet the same island. The final part of this different level puts forth the option to either return to the prior derelict island and continue doing these tasks, or end the game by leaving the island. For a more detailed description of the story, refer to part 2.3.



2.2 The title

The title of the game 'Sun Valve' refers to the technology of the flow control valve invented in 1907 by Gustaf Dalén^x. The technology allowed the lighting of lighthouses to be automatically controlled, and thereby making human lighthousekeeping obsolete. The title is therefore an allusion to how the character of the game once became obsolete by the invention of technology. Sun Valve is then the cause of the character originally choosing to enter the hedonistic experience of being a lighthouse keeper.

2.3 Setting

After some collective deliberations and sketching^{xi}, we decided on placing the game in two time periods – the first, simulated experience would take place in 1892 on a Canadian island, while the last authentic part of the game is on the same island in 2013. The island itself should have specific flora and fauna characteristic to the northern part of the Canadian islands, while also being completely surrounded by sea^{xii}.

3. Story

The following section will describe in detail how our initial story was planned out.

3.1 Storyline

Conrad is a content "hermit", living in solitude on the otherwise uninhabited Lawson Island (located in the confluence of the Hudson Strait and the Labrador Sea). He lives in a nice, comfortable little cottage by the shore, while being responsible for the daily operations of the lighthouse on the island, where the weather is mostly relaxing and comfortable, with no extreme fluctuation in either temperature or wind.



The Lawson Island is not overly large, but Conrad seems to enjoy the size of it, and the daily accommodations it provides: His everyday tasks on the island includes checking mail at the small pier (reminding him of his loved ones), maintaining and lighting the island's lighthouse (rewarding), enjoying and drawing the flora (explorable and wondrous), and Morse-coding with nearby islands or ships (social recognition / approving of his work). He easily finds joy in doing these tasks, and the tranquil solitude of his existence provide him with an unexplainable therapeutic relief (although not mentioned directly, his daily life also consists of reading books). Sometimes Conrad thinks to himself that life could not be any better.

Unfortunately his never-ending tranquil bliss on the island is ended when the world he usually knows begins to break down. Little does Conrad know that his experience is illusory and fake, simulated by a machine in the real world on the same island. Suddenly Conrad awakens in an entirely different world from what he/she considered to be his normal everyday life. Apparently Conrad finds himself exiting an alien machine of some sort.

Conrad is in some sort of red lighted underground room with only the machine by his side. Somewhere, a female machine-like voice is unemotionally saying there is a critical power failure, while an obtuse plaque is hanging on the wall, detailing what the machine in the room is. Luckily Conrad notices some small amount of white light in the red darkness and finds an upwards exit from the room. He then finds himself in something eerily similar to the cottage of his island, but everything seems completely different: There is a dark and ominous poem hanging crooked on the dark wall, his former sketches/paintings

SCYLLA & CHARYBDIS



are weird and altered, and the usual photograph of him and his family has been severely altered in the form of his image being crossed over.

Reluctantly, he begins to explore and investigate this new state of experience, and finds himself on the same island, but the regular mainstays of his earlier memories are drastically different: Everything is much more grey and drab, while the buildings of old have grown old and weathered. The once bright and seemingly perfect lighthouse has been overgrown with moss and darkness; the old cottage is wet and moldy; and finally the weather seems ten times more unpleasant than what Conrad experienced prior to this peculiar change of experience - the wind is howling, the sea is in an uproar, etc.

After some time spent exploring the island, Conrad comes across a new building on the now unpleasant island. It looks like a large white tower of some sort, with large metal blades in standstill, e.g. a windmill.

Somehow, there is a strange red light emitting by the windmill. Motivated by pure curiosity Conrad investigates the light source by the windmill. Once closer to the windmill Conrad eyes another person. Conrad reluctantly approaches the person, who looks like a builder of some sort. When noticing the asocial and solitary Conrad looking at him, the builder person greets Conrad with a jovial warmth and openness. Although Conrad is unaccustomed to another human being, his desire to obtain an explanation of these peculiar circumstances is so strong that he greets the builder and approaches his calling. The builder then introduces himself as Otto.

An exchange of questions and answers takes place between the two men, and apparently the year is 2013 and Otto is actually not living on the island, but has only just arrived by boat with the intent of

SCYLLA & CHARYBDIS



fixing the windmill. Despite the unfamiliarity between the two characters, Otto ends up asking if the lighthouse keeper wants to go with him on the boat, leave the island and sail to the nearest port and get some warm food, a comfy bed and the hospitality of his home - after all, there's nothing for Conrad to be doing on the derelict island, according to Otto.

While Conrad mulls over the decision, Otto fixes the windmill, which furiously starts to spin and create a foreboding sound. But before going with Otto, Conrad knows there is some things missing he needs to obtain before leaving the island - his paintings, sketches and poems. He tells Otto to meet him by the pier, but while Otto agrees on this arrangement, probably won't wait all day for Conrad.

While Otto returns to the pier, Conrad hurries to the old worn down cottage. While still repressing his traumatic memory, he finds the letter on the table in the cottage, although there is some sort of weird green glow coming from the earlier exited basement. A female machine-like voice informs Conrad that the machine is now online and ready to be used again - Conrad now wonders if he should enter the machine and return to the way things were on his joyful, happy island, or if he should go to the pier and depart from the island with Otto.

Either of the following events happens, depending on what Conrad chose:

1. If he re-enters the experience machine: Conrad will live the same blissful day over and over again without being aware of it. He does not open the blood-stained letter nor let his memories return to him.
2. If he goes to the pier and leave with Otto: The screen will fade to black and an end text will show up, detailing the remaining life of Conrad as an obsolete human being. The game ends.



4. Characters

4.1 Playable Characters

Conrad: male, 45-60 years of age.

Characteristics in the simulated world are; enthralled, motivated, happy, joyful, eloquent, and bossy.

Characteristics in the real world are; disoriented, depressed, irritated, anti-social, but well-meaning.

4.2 NPC's

Otto: male, 40-50 years of age

Characteristics in the real world are: Warm, social, gracious, welcoming, helpful, optimistic, and reasonable.

5. Graphical Style

5.1 Visual aesthetic

The visual aesthetics of the game is intended to be consistent with the thematic implications of the game. This means that we deliberately created the visuals of the game to be realistic, in so far as to trick the player into believing he or she is experiencing reality within the game. Due to the dilemma touching upon the qualitative nature of reality, it was prudent to avoid going for anything other than that which represents reality^{xiii}. The choice of selecting a realistic depiction of a Canadian island in 1892 also contributes to the player feeling more pleasure in that particular setting – we want the hedon-

SCYLLA & CHARYBDIS



istic state of experience to feel less alienating and more like a warm, cozy, safe haven akin to the feeling of spending a vacation in a cottage. This choice of romantic emotions induced from reality stems from our notion of the land of Canada in 1892 as crisp and clean, because it fits the specific time period and the main character's memory of his biggest desire.

The realistic state of the game, viz. the experience machine in the basement, is visually gritty by e.g. having old, weathered, grey, and rusty metal. This is in accordance with the characteristics of experienced reality as we know it, e.g. the complexities offered in real life as being nuanced, as well as the challenges we face on a daily basis providing emotional and physical hardships.

6. Audio

The following section covers both the music and sound effects of the game.

6.1 Music

The music in Sun Valve is best described as instrumental with subtlety and relaxation. The style of the music is consistent with the thematic emotions of the game. The music strives to create a sense of soft pleasure and relaxation, from which aesthetic value is added to the player experience. This means we aim to create consistency between the narrative, the visuals and the music.

The background music has a very low-profile when playing the game in terms of sound level and orchestration. The music is a texture to the experience rather than highlighted musical songs. As a consequence, the general characteristics of the music are:



1. The pleasurable state aims for an authentic sound. This means instruments which are non-electric and therefore entirely acoustic.
2. The reality state aims for a synthetic and artificial sound. This means either electronic musical instruments or electronic music technology.

Consequently, the music also supplements the gameplay by inducing the player with the feeling of relaxation, pleasure and enjoyment in a virtual world, so that he or she is increasingly engaged with the experience. Furthermore, one might claim that the music contextualizes the player agency and its emotion.

The music is triggered through on the location the player is in. We have specifically chosen to make the musical pieces end when entering or exiting certain locations, and not by looping.

6.2 Sound Effects

The sound effects in Sun Valve are functional in the sense that they aim to contextualize the player in the environment of the island. This is done so by using environmental sounds triggered by the situation the player is currently experiencing. If the player is walking by the beach, the sounds of waves and stepping in sand will play. If the player is by the lighthouse, the sound of seagulls and stepping on wood will play. And so forth. In this way the ambient sound effects convey a sense of reality. This way of contextualizing the player serves to create a more immersive experience.



7. Gameplay

We approached the challenge of incorporating thematically consistent gameplay into Sun Valve by avoiding the pitfalls of excessive conventional and generic game design in the form of simple conflicts^{xiv}. As a consequence of our collective ideology, we did not want to provide gameplay mechanics that did not make sense in the game world. In order to make the game involving and engaging for the player, we envisioned the game and the player in our mind¹, by thinking to ourselves: ‘What would be interesting if I played an atmospheric, meaningful game?’

7.1 Global game rules

The player is unable to leave the island. He or she can only go into the water, but never into collision with the end of the map. The rules also restrict the player’s jumping.

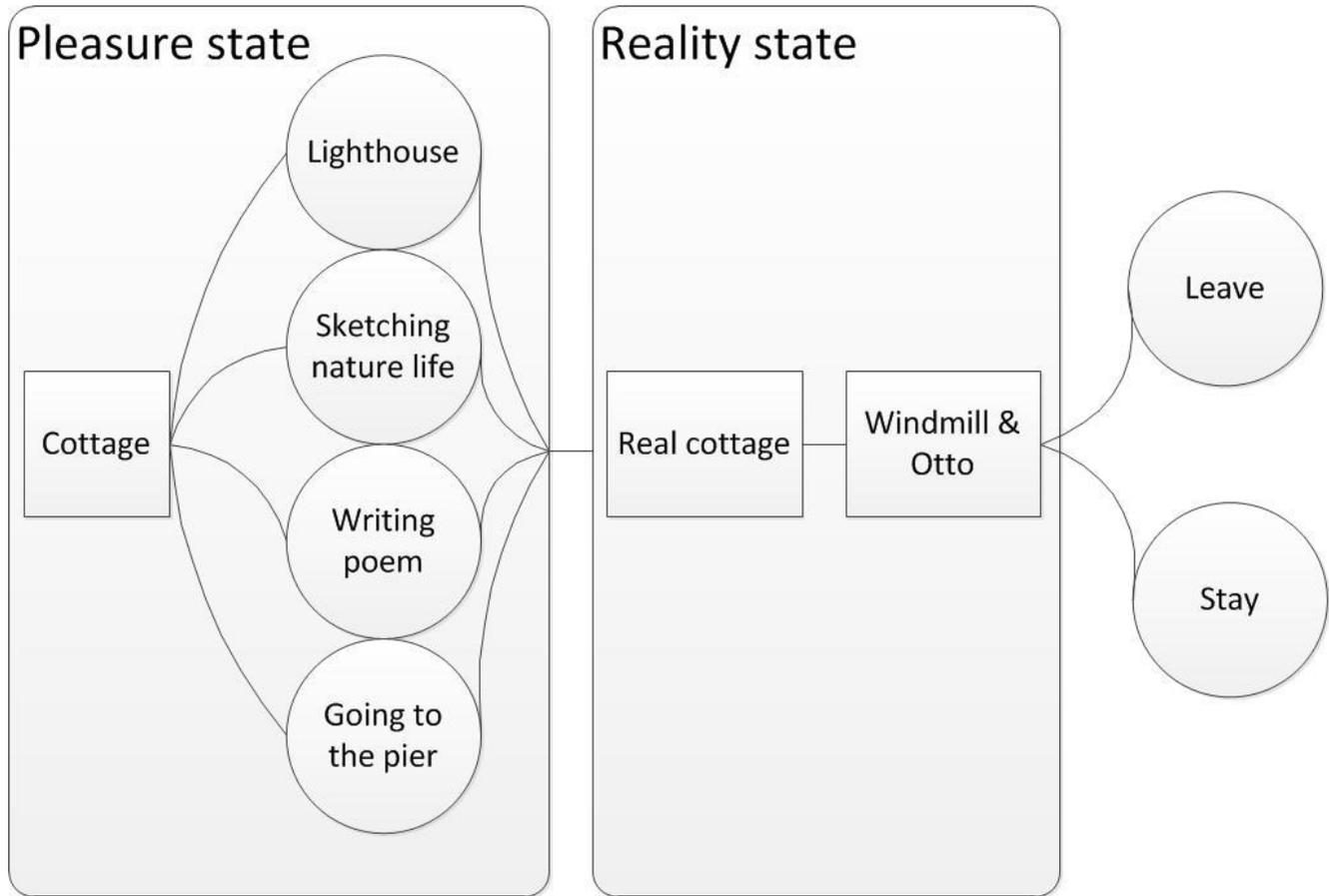
7.2 Game Goal

The goal of the game can be regarded as either a formal goal or an experiential goal. What we mean by the former aspect of what constitute the goal of our game is that the game in a formal sense is about getting to the end state of the game. The latter, experiential aspect of what we consider to be the goal is the fact that the game aims to immerse, situate and challenge the player in a qualitatively rich experiences.

7.3 Progression table & Learning Curve

¹ A valuable ability for both academics and practitioner, cf. Jeffries (2011)

7.3.1 Progression table



7.3.2 Learning Curve

In so far as the game aiming to be accessible to most players, the learning curve in the game is mechanically not very steep. The mechanics of the game are accessible through a quick tutorial text on the Pause screen, while information about the gameworld is conveyed through a map displayed by the player's starting position.

7.4 Span of control & Abilities

The game relies on customary conventions in regards to controls and camera (cf. section 7.3.2), so that the experience is accessible to most players. This ease of use is primarily achieved by appealing to already existing player repertoire, cf. Juul (2005). This section details how the inputs of the game function and how the output relies on this input.

7.5 Mechanics

The core ability is exploration of the island, both exploring the landscape as well as the buildings, by:

- Physical movement in the game world
- Looking around in the game world

One can also say that by doing so, the player has the ability to discover more about the main character, Conrad, since the movement and point of view (looking around) is directly linked to specific audio cues of Conrad's thoughts.

Next to the core movement, the player can interact with various objects on the island. Besides the actual movement and interaction keys, the object-interaction ability of the player is context dependent. These abilities are:

- Writing a poem
- Sketching and painting the wildlife of the island
- Reading mail

SCYLLA & CHARYBDIS



- Lighting the lighthouse

7.6 Control Scheme

Movement is controlled by the keys W, A, S, D.

Looking around in the game world is controlled by the Y and X axes of the mouse.

- Engage interaction with an object = E (This is required before any of the following abilities are usable)
- Writing a poem = Left mouse click and hold + various mouse gestures (see Gameplay for more info)
- Sketching and painting the wildlife of the island = Left mouse click and hold + various mouse gestures (see Gameplay for more info)
- Reading mail = Left mouse click and hold + mouse gesture up
- Lighting the lighthouse = Left mouse click and hold + mouse gesture right + gesture up

7.7 Scale

Due to the game striving for a realistic aesthetic, the scale of our game is made with realistic measurements of the objects in both 3DS Max, Maya and UDK.

SCYLLA & CHARYBDIS



7.8 Time

To describe the temporal aspect of our game, we use Juul's (2005) distinction between fictional time and playtime. Fictional time refers to the time passing in the fictional world² of the game, while the playtime refers to the real time spent by the player playing the game. The playtime of game is around 40 to 60 minutes of real-time minutes depending on how the player acts within the gameworld. The fictional time of an entire playthrough takes place in the course of over a hundred years. Furthermore, the fictional time relies on a day and night cycle which is 8 hours and 16 hours, while the real time of this day and night cycle is amount of minutes.

7.9 Difficulty

When taking into account the fact that our target audience should be able to play this without too steep a mechanical challenge, the game is fairly manageable to the average player. The semantic aspect, and therefore the experience itself, of the game is the priority of the experience, so we decided not to detract or take away from this.

7.10 Saving

Currently there is no save system in Sun Valve.

² Defining and criticizing this terminology of 'fictional' is beyond the scope of this documentation.

8. Level Design

8.1 Game world

The game world is an uninhabited island surrounded by a sea. On the island there are various types of birds, trees, foliage, along with the man-made constructions apparent to the player. These are the lighthouse, Conrad's cottage, and the pier.

The 3D model of the island is represented in two different ways by the use of different types of lighting. The first representation is that of the pleasurable island, with the use of bright and saturated lighting, which serves to highlight the hedonistic aspect of the experience. The second representation of the island is gritty and less colourful.

The traversal of the island is comparable to other open-world games. The island is explorable and navigation is therefore up to the player. We decided on this based on the notion that the design of game experiences should be seen as second order design^{xv}, in terms of letting the player do whatever he or she wants to do within the context of the rules of the game.

8.1.1 Key Locations

1. The island itself: The map the player is immersed in.
2. The cottage: The private place where Conrad sleeps and relaxes. It is an old, wooden two-floor building with a chest, table and a chair.
3. The fuel house: the little shed in which Conrad gets oil.
4. The Lighthouse: The primary building Conrad is most fond of.

SCYLLA & CHARYBDIS



5. A flocking of birds: A place on the island where the player is able to sketch the birds.
6. The Poem-inspirational location: A place by the sea, where the player is able to sketch a poem.
7. Pier: The location where Conrad is able to pick up mail.

9. System

9.1 Camera

The camera in the game will be the conventional first-person aspect. This view frames the player within the world, and thereby creates a more immersive sensation. Furthermore, it is necessary to suggest to the player that he or she is in charge when ultimately having to decide between either a pleasurable or an authentic experience. The choice of having a first-person point of view also affords some technical ease-of-implementations in regards to 3D collisions and character animations.

9.2 Interface

The heads-up-display is deliberately non-existent in order to immerse the player, because anything resembling a HUD would remind the player that she or he is playing a game^{xvi}.

However in order to convey relevant information when the player has to engage irregular activities, meaning where the dimensionality of control^{xvii} is different depending on the context, we decided to implement control flashcards. This is seen whenever the player has to engage the specific gameplay



activities, such as writing a poem or sketching flora. A HUD only shows whenever the player engages in an activity in which he or she has to make alternative, specific moves.

9.3 Engine

For our game, our programmer and game designer decided to use the Unreal Development Kit anno September 2011. This decision was based on several factors. First of all, the UDK consists of a relatively easy programming language called Unreal Script, because it is quite similar to Java and C++. Furthermore, the development kit uses Actionscript to implement Heads-Up-Displays and the menus, which is achieved very quickly. Thirdly, the engine has the Kismet tool, which basically is kind of a flowchart implementation of programming that makes the process of implementing mockups of ideas quick and painless, and thereby allows rapid prototyping in the form of greyboxing^{xviii}. This form of prototyping also allowed us to uncover the needs of the player of our game^{xix}. Lastly, UDK provides exemplary graphical tools with astounding visual features, with which the team's vision is more easily achieved. However, the development kit has a steep learning curve, so some educational challenges have arisen during development of Sun Valve.

9.4 Platform

Taking into account the fact that we are using the advanced graphical features from the UDK as the game engine, we are only targeting the Windows and the OSX platforms with underlying hardware being capable of real-time rendering high-end graphical assets with a high polygon account, high resolution textures, and advanced graphical effects, like volumetric lighting etc.



10. Marketability

This section deals with who the game's potential players might be, as well attraction points of the game.

10.1 Target audience

Our target audience is primarily people who take an interest in immersing themselves within a given experience^{xx}, while also enjoying being intellectually stimulated by how the meaning of an artifact is conveyed. We do not consider these teleological playing styles as dependent of age, income, social background, but rather as a potential of the human condition that all people to some degree share^{xxi}. More specifically, the game addresses this aesthetic condition by its non-apparent storytelling through the environment and dialogue, its high level of visual and auditory aesthetics, and its mechanical implementation of the everyday life of a lighthouse keeper made obsolete by technology. Sun Valve satisfies the target audience's desire to enjoy immersive, emotional experiences, in which the environment, story and mechanics convey a semantically elaborate game.

Furthermore, we have deliberately balanced the various target audiences according to our intention to create an atypical game. One might claim there is an intrinsic dilemma between creating something unusual, while also appealing to the literacy or already established conventions of digital games^{xxii}, especially in respect to the player-centric focus in game design. Therefore, we decided on the 28th of October that our concept could be sufficiently conveyed and enjoyed by as many as possible in the form of intentionally designing the game on established player knowledge of a first-person camera, its inherent movement and the mechanics of interacting with the environment.

SCYLLA & CHARYBDIS



10.2 Unique Selling Points

The following characteristics are what we consider to be appealing and marketable to consumers and players who are interested in immersive experiences:

1. Sun Valve gives the player the choice of the moral dilemma - we do not decide for them.
2. Sun Valve immerses the player in an aesthetic and emotional experience
3. Sun Valve has comparably higher standards of its semantic content
4. Sun Valve is also a commentary on games themselves - i.e. joyous, simulated experiences separated from real life.
5. The concept of Sun valve is intellectually stimulating and socially contemplative^{xxiii} (e.g. the player can discuss with your friends what they would have chosen)

11 Organizational description of Scylla & Charybdis

11.1 Members

Scylla & Charybdis consists of 6 members in total:

- Allan Alansari
- Astrid Sønnerby Lamhauge
- Emil Lundedal Hammar

SCYLLA & CHARYBDIS



- Giedrius Spokas
- Simon Cutajar
- Thomas J. Papa

11.2 Team structure and responsibilities

Each person is primarily relegated to a primary role within the relevant area of game development, while secondarily supporting a related or affected area of the development of Sun Valve. These areas are:

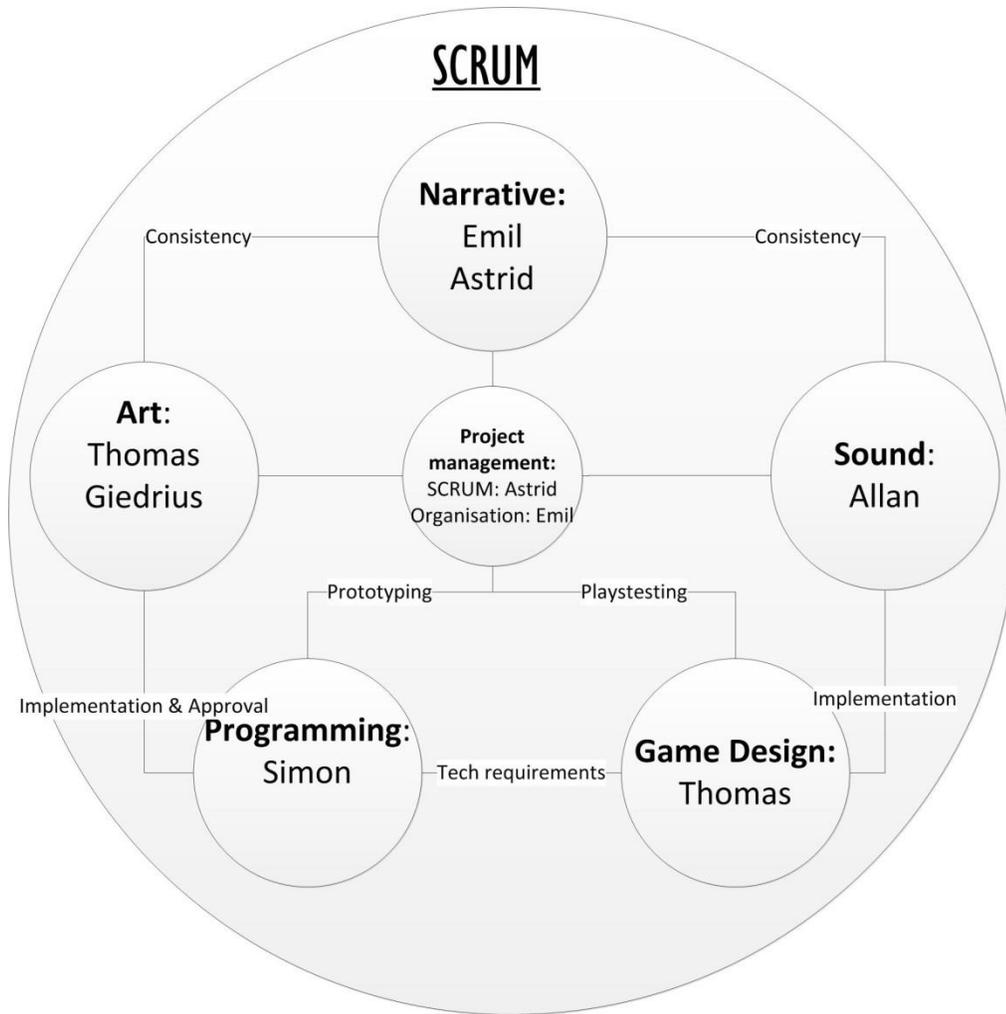
- Design
- Programming
- Art
- Sound
- Narrative
- Project Management

This structure ensures the appropriate responsibility is allocated to each team member, with which every decision within each area is accurately and effectively distributed. As a consequence of this distribution of responsibility the tasks within the area in question are not held up by communicative problems or bureaucratic bottlenecks. However, we did not neglect the causal relation between the different areas of game development, so we have taken into account the relationship between the areas and specified how those particular relationships manifest during game development.

See illustration below for a graphical representation of the team structure and work process.

SCYLLA & CHARYBDIS





11.3 Process

A general overview of the entire development process is needed to properly describe and detail how the creation of the game has progressed during the 10 weeks of development. To achieve this, we have intentionally divided the process into three different categorical periods: concept development, game



development^{xxiv}, and finally game testing and polishing. Each category has different sprints according to their respective SCRUM stories, but overall these three periods describe

11.4 Method

We decided to work in accordance with the SCRUM method^{xxv}. We initially started the first meeting of the final team with Thomas putting forth the suggestion that we should use Scrum to run our production and all members agreed to go for scrum without protest.

The main reason for choosing Scrum was based on us initially being aware of the fact that the game concept was ambitious and therefore needed a management method that could warn us early if we started falling below our initial targets. We figured that the burndownchart combined with the prioritized backlog, which both are characteristic of SCRUM, would secure this warning.

We also knew that Scrum's focus on high autonomy for the individual member would help minimize friction within the group as we are working within the frame of a student project, meaning that there is no official hierarchy. Contrary to SCRUM, a more traditional approach might have caused more friction as team members might have felt undermined by a project manager who did not hold seniority over them.

SCRUM also places huge importance on maintaining the importance of each member's time. The SCRUM method strives to uphold this through minimizing meetings to relevant members with the daily stand-up meetings, while the sprint meetings and the sprint reviews are conducted with all members present. We figured that this would optimize our use of time so all members would be able to spend as

SCYLLA & CHARYBDIS



much time as possible on their individual tasks and thus again raising the probability of successfully reaching our ambitious goal. As shown during the process and our experience with it, the SCRUM method allowed the team to quickly adjust accordingly whenever we encountered unexpected challenges, so that the problem-space dimension in the team was as easily lowered as possible, i.e. the team was effectively able to build a bridge between a given problem and its solution^{xxvi}.

11.5 Development process

11.5.1 Concept development

We initially met up after forming the team and made sure that we had the appropriate conditions for both communication and artistic intentions. We achieved the former by immediately establishing a teamwiki, a mailinglist, a filesharing site, and finally a group calendar, while the latter was comprised of sharing games and principles with affinity to our aesthetic needs, desires and requirements. Sharing taste in games as well as each member's aesthetic principles helped lessen the the initial divergence between the team members, and created a platform, from which the team was able to start on creating and evolving an ample concept for our potential game.

In the beginning of the development of the specific concept we arranged to collectively give input to whatever the concept might be. Structured by the relevant team members in charge, the entire team used the technique of brainstorming within a proper framework for effectively producing worthwhile associations. Interesting and abstract topics included among others beauty, knowledge, lesser evils, and

SCYLLA & CHARYBDIS



moral dilemmas. This brainstorming session supplied our team with a clearer idea of how the game was going to be.

Keeping these brainstormed topics in mind we each had to produce and present an individual proposal for what the game should be about. In short, we had to narrow it down. During the next meeting we spent time showing our proposals on what the game should specifically address. After the presentations and the following deliberation we decided upon using the dilemma of the thought experiment presented by Robert Nozick, due to factors such as scope, time and asset requirement.

Within this particular topic we then arranged to narrow it even further down by each member presenting a specific narrative that was compatible with the particular structure afforded by Nozick's thought experiment. The individual presentations amounted to a collective decision to set the moral dilemma within the story of an old man taking care of a lighthouse on a Canadian island. With the assistance of sketching and prototyping we reiterated, refined and produced a workable concept from which a game would emerge.

11.5.2 Game development and testing

Before commencing immediate program, design and asset development we had to lay down the appropriate foundation of the development. The concepts introduced by the agile methods of SCRUM allowed us to divide the game into different 'stories' and estimate the amount of work needed to be put into the game. Each story of the game referred to specific locations of the game, containing the location's assets, its programming, designing, and writing. The workload of the stories was detailed by



the amount of hours needed to finish the story in question in order to qualify the demanding schedule and available work hours. In the following section X amounts of SCRUM sprints are detailed and explained in order to provide a general description of the process.

The initial part of the game development focused on the basic environment. This meant creating the 3D model of the island, getting familiar with the tools of UDK, choosing an appropriate visual style, and creating the relevant 3D assets.

For our first sprint, we targeted the island itself. It needed not only modeling, but also texturing, and dynamic water representing the sea, while also requiring of natural objects, such as different types of foliage, trees and birds, as well as their accompanying sounds. In regards to programming the code for the movement had to be implemented, while the dialogue script needed drafts. This sprint was supplemented by work-daily stand-up meetings and a final review of the sprint.

The second sprint focused on the larger 3D assets, detailing the specific instances of player activities, and creating a menu. Work focus specifically addressed the cottage on the island, the placement of the foliage, the lighting and water of the island, implementing the sounds of the birds, creating an appealing menu for the game, creating the required gameplay elements and finally polishing the script. Concurrently, a SCRUM 'burndownchart' of the process was developed and created by the member in charge with the purpose of getting an overview of our targets and estimated workload.



The third sprint once again included 3D assets, specifically the lighthouse, and the props within the cottage (inkbottle, pen, chair, chest, table). In addition to the 3D assets, the gameplay mechanics were being coded, a suitable voice actor had to be found, sound assets needed looping, and finally a prototype of the gameplay was initiated.

The fourth sprint continued some of the previous sprint's stories. The lighthouse needed stairs, the loading screen had to be altered, the locations of the dialogue triggers was inserted, menu music were to be created, and the 3D model of the experience machine and its basement had to be created. Continued from the last sprint, gameplay was being coded and informally tested.

The fifth sprint focused on acquiring a 3D character and implementing it in our 3D world, as well as designing the specific lighthouse mechanic. The modeling of the experience machine was finished, while work on basement stairs and birds were started. The coding focused heavily on the gestures in some of the context-sensitive gameplay. Meanwhile the voice actors were sent their respective scripts and the SCRUM method was invoked in managing the burndownchart. Lastly, the music of the game was finalized.

The sixth sprint was divided into two parts. The first part consisted of finishing up last sprint's workload, as well as building a tutorial and doing some additional coding and 3D assets. The second part of the sprint was allocated to letting each team member individually spent time on their own hand-ins, viz. individual game, review of Half-Real, and finally the individual reflection. We allocated this time to these tasks because it would make everyone prepared for our final sprint.



The seventh and last sprint was our final time to test and polish and catch up on the remaining stuff. This sprint was heavily focused on over-allocating sufficient time to the project, so everyone had relatively free schedules. We planned this last sprint in detail in accordance with the remaining burndownchart. We crunched, polished, playtested etc., and on the last day of development we were finally able to compile the game and deliver it.

This part of the documentation outlines the prototyping and testing aspects of the production cycle of our game. Initially we will describe the background of the testing, followed by detailing the methods employed in the tests. Subsequently we will describe the test process and conclusively elaborate on the results of playtest in question

12. Play-testing

We had originally planned to do two playtests in sprint number 5, i.e. week 47. The first play test was called the Narrative Playtest^{xxvii}, and the second play test was called the “Mechanics playtest^{xxviii}”. The two tests were intended to be done together, but when the gesture recognition failed to respond to player input, the mechanic playtest was temporarily put on halt. We decided to move ahead and do the narrative playtest in isolation.

The testing lead was constructing the test based on principles of Pen & Paper roleplaying games, in which the appointed ‘dungeon master’ talks the selected players through a narrative and the player makes certain decisions on the way. The test itself was placed into the framework for playtesting as proposed by Fullerton (2008, p.253). The goal of particular method was to test if the story of Conrad was compelling and engaging for our target audience. The narrative playtest was pilot-tested with the

SCYLLA & CHARYBDIS



testing lead's sister and boyfriend. However the pilot testing made it clear that the results of the test could not be usable in the sense that the test progressed in a too linear fashion. This meant that in actuality there was only one way to progress in the test and the linear progression became very transparent and broke the immersion of the testers. The test was therefore abandoned as it did not provide us with answers to the goal we had set up.

12.1 Mechanic playtest and usability

Next we attempted to set up the planned mechanics playtest, which was also contextualized through Fullerton's framework (2008, p.253). As mentioned the coding of the mechanic ran into trouble which made it impossible to perform the test in question. It took until Sprint 7 to have a sufficiently functional mechanic to be tested. The challenge for both the team and development process was that the test took place at exact same time as the usability testing. We therefore decided that we had to merge the two tests into one testing session in order to have time left for implementing any insights resulting from the test^{xxix}.

12.2 Recruitment

To set up the proper invitations to the event, we created a Facebook event for the testing. The event was planned to be held on Sunday 11th of December at the IT University of Copenhagen, Denmark. The people invited were majorly fellow students from the Game design course, as well as some private friends of the team members. However no confirmed testers showed up for the testing, probably on account of it being Sunday, so after an hour of waiting with no testers appearing we changed approach. The testing lead and the team member assisting went around the campus grounds recruiting fellow students for testing. In the end we recruited 7 people, who all were taking the game design course.

SCYLLA & CHARYBDIS



12.3 The Tests

We used our Prototype version 19 of our map for testing. The first two testers were used as pilot tests^{xxx}, so that we could flexibly adjust the way we completed the following five tests. Prototype version 19 had its background sounds disabled meaning that there was no sound unless the player reached a sound trigger. This resulted in both of the pilot testers claiming that it felt creepy walking around in this silence. We therefore enabled the background sound in the prototype and in the following five tests^{xxxi}, it was not noted that it felt creepy. During the pilot tests we had initially started the game before the test commenced. This made it hard for the testers to focus on the introduction and warm up questions so in the following 5 tests we did not start the game until the play session of the game.

12.4 Results

The results were collected and analysed by comparing the comments, reactions, in-game decisions and answers to the questions of all the tests. We received a lot of useful results from the tests, Due to the scope of this design document; we will only mention a few of the more important results.

Firstly 6 out of the 7 testers remarked on Sun Valve being aesthetically pleasing and a nice environment to move around in. This was a great confirmation to get as Mapprototype 19 mainly consists of pleasure state elements that has been designed to afford an aesthetic and pleasant experience for the player.

Secondly we got confirmation that the poetry mechanic was not sufficiently engaging. In our internal self-testing within the team we had already discussed that it needed the extra feature of the poem appearing in pieces in order to make the mechanic meaningful for the player. Only one player mentioned



that she liked the mechanic which very much confirmed our initial concerns about the engagement afforded by the mechanic.

The final result that we want to highlight was a usability result. While the input mechanics of moving around came intuitively, without instructions to 6 of the 7 testers, several of the testers struggled with understanding the input mechanic for the poetry mechanic. We therefore prioritized the implementation of tutorial screens to assist the player in getting familiar with both the game and its mechanics.

12.5 Critical reflection

To conclude on this documentation on prototyping and testing, one could point out the various consequences of the way we completed the tests. The scope of the project and its required high workload made proper formal testing a larger challenge than usual. Implementing mechanics and having a ready to play experience for our testers demanded a lot of time, which ended up pushing the actual playtest further and further into the process. If we potentially had conducted the tests further back in the process, it would have made it possible to conduct further testing and reiterating and polishing the design of Sun Valve. Undoubtedly this would have made the game an even more engaging experience.

14. Bibliography

Aarseth, Espen: “Define Real, Moron!” - Some Remarks on Game Ontologies”,

http://opus.kobv.de/ubp/volltexte/2011/4981/pdf/digarec06_S050_069.pdf retrieved on the 11th of November 2011



- Atalay, Mehmet, "Kant's Aesthetic Theory: Subjectivity vs. Universal Validity", in *Percipi* 1, pp. 44-52, 2007
- Bateman, Chris and Richard Boon. "Principles of Interface Design", in *XXI Century Game Design*. Charles River Media, 2005, pp. 123-147
- Bolter, David; Grusin, Richard. 2000: *Remediation: Understanding New Media*. MIT Press, Cambridge and London.
- Buxton, Bill. "The Anatomy of Sketching", in *Sketching User Experiences. Getting the Design Right and the Right Design*. Morgan Kauffman, 2007, pp. 105-113
- Cross. Designerly ways of knowing: design discipline versus design science. *Design issues* (2001) vol. 17 (3) pp. 49-55
- Dorst. Creativity in the design process: co-evolution of problem-solution. *Design Studies* 22 (2001) 425-437
- Juul, Jesper *Half-Real*, MIT Press, 2005
- Nozick, Robert, *Anarchy, State, and Utopia* (1974), Basic Books, New York
- Sass, *Materializing Design - The implications of rapid prototyping*. (2006) pp. 1-31
- Schwaber, K. and M. Beedle. "Get Ready for Scrum!". In *Agile Software Development with Scrum*. Prentice Hall, 2001. Pp. 23-30.
- Sicart, Miguel, 'Wicked games. On the Design of Ethical Gameplay', forthcoming

SCYLLA & CHARYBDIS



Stenros and Waern. Games as activity: Correcting the digital fallacy. Videogame Studies pp. 11

Suchman, Trigg and Blomberg. Working artefacts: ethnomethods of the prototype. British Journal of Sociology. Vol. 53, No. 2 (June 2002), pp. 163-179.

SCYLLA & CHARYBDIS



15. End notes

ⁱ “Modern games [...] are consciously designed by a game designer”, Stenros & Waern (2006), p. 7

ⁱⁱ Cross (2001), p. 54

ⁱⁱⁱ This distinction between mechanics and semantics should not be regarded as an academic contribution to the field of game studies, but as a helpful distinction for explanatory purposes.

^{iv} Aarseth (2011), p. 59

^v Nozick (1974)

^{vi} The formal structure of the argument is:

P1: Experiencing as much pleasure as we can is all that matters to us

P2: If we will experience more pleasure by doing x than by doing y, then we have reason to do x.

P3: We will experience more pleasure if we plug into the experience machine than if we do not plug into the experience machine.

P4: We have reason to plug into the experience machine. (P2&P3)

C1: If all that matters to us is that we experience as much pleasure as we can then we have reason to plug into the experience machine.

P5: We have reason not to plug into the experience machine.

C2: Experiencing as much pleasure as we can is not all that matters to us. (C1&P4)

^{vii} We do not necessarily subscribe to Nozick’s moral argument, and neither do we intend to be normative in regards to the individual belief of the player.

^{viii} Sicart (forthcoming), p. 105

^{ix} When compared to other games containing a narrative.

^x http://en.wikipedia.org/wiki/Sun_valve, visited on the 21th of November 2011

^{xi} Sketching was particularly useful in terms of communicating the “first thoughts of an idea to others consciously leaving those parts vaguely of which the drawer was unsure about or which he wants to leave open for discussion.” Buxton (2007), p. 106

^{xii} This also ensured an open explorable world without improper formal restrictions, like ‘invisible walls’.

^{xiii} If we had used an extraordinary, visually unrealistic look, then the player would automatically deduce that something about the experience was “off”.

^{xiv} Examples such as “eliminate X to proceed to Y”

^{xv} Stenros & Waern (2006)

^{xvi} What Bolter & Grusin (2000) refer to as an ‘immediate’ experience contrary to an ‘hypermediate’ experience, where the former does not seek to recognize the existence of experiencing a medium through transparency (e.g. no HUD or score), while the latter seeks to underline the experienced medium through implementing obvious and acknowledging signs of the medium (e.g. health bar, mission objectives, etc.)

^{xvii} Bateman & Boon (2005)

^{xviii} Sass (2006)

^{xix} The prototype served as “a strategy for ‘uncovering’ user needs, Suchman, Trigg and Blomberg (2002)

^{xx} Whether or not the experience is fictional or virtual

^{xxi} Atalay (2007), c.f. Kant’s concept of the aesthetic *sensus communis*

^{xxii} Bateman & Boon (2005)

^{xxiii} Dekoven (2002), p. 1

^{xxiv} Using the term “game-development” might seem appropriate, seeing how the concept actually encompasses the entire development process of a game.

^{xxv} Schwaber & Beedle (2001)

SCYLLA & CHARYBDIS



^{xxvi} Dorst (2001)
^{xxvii} Testing Appendix 1: (Incomplete document)
^{xxviii} Testing Appendix 2
^{xxix} Testing Appendix 3
^{xxx} Testing Videos 1-3
^{xxxi} Testing Videos 4-8

