

Exploring narrative complexity in Outer Wilds:
A textual analysis on how user agency and a time-loop influence the narrative
complexity



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Abstract

The aim of this research is to investigate how a time-loop and the concept of user agency influence the narrative complexity in *Outer Wilds*. Countless of stories have been told and experienced through different forms of media. While many films had a classical Aristotelian framework, newer films have moved away from this framework and included nonlinearity like for example a time-loop. Games seem to add another complex layer to this, by allowing players certain freedom, letting them explore, retrace steps, or perform unexpected actions, which complexified the dramatic structure of a narrative. In addition players can disrupt linear time by dying, saving, reloading and taking different paths. *Outer Wilds* adds another complex layer, by forcing the players into a time-loop, which in combination with the player's agency can influence the narrative complexity, hence the aim of this research. To get a better understanding of this I have focused on narrative complexity by looking at Warren Buckland among other people and at the difference between story (*fabula*) and plot (*syuzhet*). The framework of Agency Play by Fox Harrel and Jichen Zhu is used to get a better understanding of user agency. While a framework of time in games was first attempted by Jesper Juul, Michael Hitchens adapted this framework and included nonlinearity in it. The game will be analysed according to textual analysis as suggested by Clara Fernández-Vara. Both an 'object' and 'process' approach has been used to analyse this game, to show where the complexity lies in both the system (object) and the player's experience (process). Results of the analysis seems to indicate that a part of the complexity lies in the interrelationship between the systems time-loop and the player's freedom to navigate the game. In addition a high degree of local agency and a low degree of global agency is determined and how this impacts the narrative. Finally the notion of game progress time in *Outer Wilds* seemed faulty on a certain level, thus an attempt was made to introduce a new term, called player progress time. Not only to unveil the progress made correctly but also to show the complexity of the narrative.

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Introduction

Countless stories are being told and experienced every day across many different forms of media, ranging from written literature to digital games. In a time of instant access to all these forms of media, people are able to experience many different kinds of stories. Living in a culture dominated by new media, classical storytelling techniques, such as focusing on a unified plot, are often rejected and replaced by more complex storytelling, including nonlinearity, time loops or fragmented spatio-temporal reality.¹ One form of new complex storytelling present in the medium of film is called ‘forking path narratives’. These narratives create a jumping effect between alternative realities in which they ‘juxtapose the various likely consequences of the same event to show how each outcome may have been influenced by little deviations from one or a set of events’.²

These types of narratives often play with the concept of time to tell their stories. Examples like *Run Lola, Run*³ or *Groundhog Day*⁴ tell a story about a character who is trapped in a time-loop, being forced to relive the same day multiple times. Famous film scholar David Bordwell cites a number of conventions for these narratives. Some of which are the fact that these narratives are linear, they intersect sooner or later, are unified by traditional cohesion devices and will often run parallel.⁵ However Warren Buckland argues that Bordwell’s notion of forking path narratives reduces these films down to a classical Aristotelian framework, which considers a film to have a unified mimetic plot, in order to preserve their stability and coherence. What Bordwell does is follow the classical Aristotelian framework, interweaving the complex multiple plotlines back into a single, unified classical plot. The lack of such a classical Aristotelian framework is understood as narrative complexity.⁶

While there is narrative complexity in a film like *Groundhog Day* due to its lack of a classical Aristotelian framework and the use of time-loops, the medium of video games can add new layers of complexity. A new layer of narrative complexity is added due to the ability of the player to continuously steer the narrative in slightly different directions. Not only can players often choose to explore, retrace steps, or perform unexpected actions, all of which complexifies the dramatic

¹ Warren Buckland, ed, “Introduction: Puzzle Plots,” In *Puzzle films: complex storytelling in contemporary cinema* (Hoboken: John Wiley & Sons, 2006), 6.

² Allan Cameron, “Modular narratives in contemporary cinema.” In *Modular Narratives in Contemporary Cinema* (London: Palgrave Macmillan, 2008), 1-19.

³ Sony Pictures Home Entertainment, *Run Lola Run*, Movie. (1999; Sony Pictures Home Entertainment).

⁴ Sony Pictures Home Entertainment, *Groundhog Day*, Movie. (1993; Sony Pictures Home Entertainment).

⁵ David Bordwell, *The way Hollywood tells it: Story and style in modern movies* (California: University of California Press, 2006).

⁶ Buckland, *Puzzle films*, 5.

structure of a game. But players can also continuously die and respawn at an earlier moment in time or they can pause or reload a certain save game. All of this creates new, sometimes unexpected, but often times nonlinear representations of actions in the narrative of the game world, thus adding to its complexity. Michael Hitchens for example, created a framework for time in games that included nonlinearity.⁷ Nonlinearity can occur when multiple paths can be chosen from throughout the playthrough, and secondly when a player experiences a part over and over again due to for example dying over and over again and getting stuck in some sort of a death-loop.⁸ There is a clear distinction between a forking path narrative and a death-loop, in terms of nonlinearity.

*Outer Wilds*⁹, a first-person action adventure game released in 2019, appears to add yet another layer to this complexity. As a player you take control of an alien space traveler, where you are able to discover eight planets in the solar system with your space shuttle. While you have complete freedom of controlling your character and your space shuttle, there is a small catch. After 22 minutes the nearby sun explodes, causing a supernova destroying you and all the planets in the solar system. You find out that you are stuck in some sort of time-loop and it is your job to uncover the secrets of the solar system by exploring the different planets and ultimately finding out what causes the sun to explode and the time-loop you are in. It therefore seems to combine the programmed time-loop we know from films like *Groundhog Day* or *Run Lola, Run*, with the player's disruption of linear time. When talking about narrative complexity in this paper, the main focus is on nonlinearity. Jesper Juul was one the first to talk about time in games, but still lacked due to his understanding of time as a linear concept.¹⁰ Hitchens who has been briefly discussed before improved upon the work of Juul and added aspects of nonlinearity in the framework, for example with his term game progress time. This term took into account the ability to save and reload, for example when a player dies. His understanding of nonlinearity in time seems to take into account that a player has some sort of influence on it. In most games death can be avoided as a player can learn from his mistakes. *Outer Wilds* seems to be doing something different, as the player is forced into a time-loop, and the death of the player is in the end inevitable. This game raises some new questions about nonlinearity of time, as the nonlinearity is not caused by the player

⁷ Michael, Hitchens, "Time and computer games or" no, that's not what happened," *Proceedings of the 3rd Australasian conference on Interactive entertainment*, (2006): 44-51.

⁸ Olli Tapio Leino, "Death loop as a feature," *Game Studies*, 12, no.2 (December 2012): 1-17.

⁹ Mobius Digital, *Outer Wilds*, Video game. (2019; Mobius Digital). Microsoft Windows.

¹⁰ Jesper Juul, "Introduction to Game Time/Time to Play," In *First Person: New Media as Story, Performance, and Game*, ed. Noah Wardrip-Fruin and Pat Harrigan, 131-142. (Cambridge: MIT Press, 2004).

but by the system. The goal of this paper is to add new insights into the understanding of time in games, with a focus on nonlinearity.

The player's disruption can be analysed by looking at the concept of 'user agency'. This means the amount of control a player has to perform virtually embodied actions or to alter mechanics of narration at will.¹¹ The term user agency and its existing theories have according to Fox Harrel and Jichen Zhu been based on an oversimplified understanding of user agency, namely as agency of free will. They aimed to get a better and more in depth understanding of how user agency works in a game by creating a framework called agency play.¹² This framework consists out of different dimensions of agency, each part focusing on a different layer of user agency. All of this leads me to my main research question and sub questions:

RQ: How does user agency and a time-loop influence the narrative complexity in Outer Wilds?

SQ1: Which dimensions of agency are in play in Outer Wilds?

By getting a better understanding of the different dimensions of agency in *Outer Wilds* I can subsequently get a better picture of the impact the player has on the narrative, leading me to my next subquestion:

SQ2: What type of impact does the player have on the narrative in Outer Wilds?

While the player's disruption of linear time has an influence on the narrative complexity, the time-loop that is ingrained in the system also affects the narrative complexity, leading me to my final sub-question:

SQ3: How does the time-loop affect the nonlinearity in Outer Wilds?

The remainder of this paper will focus on the theoretical framework of the thesis. Secondly literature on time in games will be discussed and how this is relevant in *Outer Wilds*. This is followed with a short method section, explaining how the game will be analysed. Afterwards an analysis of the game will be provided and this paper will conclude with a conclusion and a short discussion of potential future research.

¹¹ Marina Grishakova and Maria Poulaki, *Narrative Complexity: Cognition, Embodiment, Evolution* (Lincoln: University of Nebraska Press, 2019), 50.

¹² Fox Harrel and Jichen Zhu. "Agency Play: Dimensions of Agency for Interactive Narrative Design." *AAAI spring symposium: Intelligent narrative technologies II*, (2009): 44-52.

Theoretical Framework

Narrative complexity

The term narrative complexity is often used to describe stories that do not adhere to the more classical Aristotelian framework of linear storytelling. However, the term in itself remains vague and complex. A form of a complex narrative that has been briefly discussed in the introduction is called a 'forking path narrative'. What these narratives do is they juxtapose alternative versions of a story, showing the possible outcomes that might arise from small changes in a single event or group of events. What a forking-path narrative allows the viewer, is instead of dispensing with the temporal, it lets us view time as both linear and as non-linear. Linear as a progression from past to present to future and non-linear as a selection of parallel possibilities.¹³

Although it is difficult to determine a single clear definition of narrative complexity, it is important to explain what it means within the context of this paper. I will use information from the discourse around narrative complexity in films. The aforementioned forking-path narrative is one of the examples given when it comes to complex narratives. It is part of the categorisation of puzzle films by Buckland.¹⁴ A factor that determines narrative complexity in this paper, and has been mentioned multiple times, is nonlinearity, thus playing with the temporal. Therefore when talking about narrative complexity in this paper, the focus lies on nonlinearity. In addition, complexity can operate on two levels according to Buckland in movies: narrative and narration. Narrative complexity emphasizes the complex telling (plot, narration) of a simple or complex story (narrative).¹⁵ Another similar distinction that is used in game studies is *fabula* and *syuzhet*. These terms originated from narratologist Viktor Shklovsky. *Fabula* means the raw material of a story, whereas *syuzhet* is the way a story is organized.¹⁶ Just like the distinction between narrative and narration, *fabula* is about the story and *syuzhet* about the plot. What differentiates the watching of a movie and the playing of a game, while paying attention to *syuzhet*, is that the focus is not on how the plot is told, but rather how it is experienced by the player. This is an important distinction to be made. In terms of narrative complexity in a game, this distinction between *fabula* and *syuzhet* shows that a narrative can operate on two different levels; within the object (the game) itself and through the experience of the player who plays the game.

¹³ Cameron, "Modular narratives," 12.

¹⁴ Buckland, *Puzzle films*, 5.

¹⁵ Buckland, *Puzzle films*, 6.

¹⁶ Michael Groden, Martin Kreiswirth, and Imre Szeman, *The Johns Hopkins guide to literary theory & criticism* (Baltimore: The Johns Hopkins University Press, 2005).

The book *Narrative Complexity: Cognition, Embodiment, Evolution* aims to establish studies of narrative complexity and explores how narrative complexity can differ across different media forms.¹⁷ While a large portion of the book focuses on films, narrative complexity in games is explored a few times. The topics range from emergence to user agency. The latter is mentioned briefly and refers to the users 'free will'. To get a better understanding of how these concepts relate to narrative complexity, both user agency and time in games will be expanded upon.

User Agency

In order to understand what user agency actually entails it is important to discuss the literature on this subject. Someone who captured the conception of user agency was Marie-Laure Ryan. While articulating different categories of interactive narrative, she provided what she termed as internal-exploratory interactivity. This term is an adaptation of Espen Aarseth's typology of user functions in cybertexts.¹⁸ However her definition is more shifted towards the user's relation to the virtual world. This is described as a system where the user exercises his or her agency by moving around a fictional world. They can pick up objects, look at them, thus viewing the action from different points of view, investigate a case and they can try to reconstitute events that have happened a long time ago. According to them, a player has control over a virtual body in a fictional world, but the role in this world is limited to actions with no bearing on narrative events.¹⁹ This is an example that refers to the capacity of a user to take actions and observe their results in a game. While free will in games sounds interesting, if it is left unchecked it can have undesirable consequences. Giving players complete control can result in unanticipated actions, like for example 'griefing'.²⁰ This is when players repeatedly kill the same player over and over again, with no intention of moving forwards in a narrative or game goals. This exact reason makes treating user agency as a synonym for 'free will' troublesome.

According to Harrel and Zhu, many of the existing theories on user agency have been based on what they call an oversimplified understanding of agency, which is agency as free will of players. It is often understood as a user's freedom to either alter the mechanics of narration at will or perform virtually embodied actions. In their article "Agency Play: Dimensions of Agency for Interactive Narrative Design" they aim to explain a broader range of agency phenomena in interactive

¹⁷ Grishakova and Poulaki, *Narrative Complexity*, 1.

¹⁸ Espen Aarseth, *Cybertext: Perspectives on ergodic literature* (Baltimore: The Johns Hopkins University Press, 1997), 62-65.

¹⁹ Marie-Laure Ryan, "Beyond myth and metaphor," *Game Studies*, 1, no.1 (July 2001): 1-17.

²⁰ Harrel and Zhu, "Agency Play," 46.

narrative and gaming, with the framework of Agency Play.²¹ This framework contains several dimensions of agency, portrayed as layers on top of each other. On top you have ‘user input direction’, followed by ‘agency dynamics’, ‘agency scope’ and finally ‘agency relationship’.²² This framework, which will be expanded upon in the next part, will enable me to determine the level of user agency the player has in *Outer Wilds* by looking at it from different levels.

Agency Play

As briefly explained before, the framework of Agency Play consists out of several dimensions of agency. Each layer can be used expressively to convey meaning. Of all layers agency relationship acts as a fundamental dimension of agency play. Models that are used present three different types of dependence; independent, inversely dependent and interdependent.²³ An example given is that characters that are controlled by human players and non-player characters (NPC) that are controlled by the system operate independently from each other. Independent user agency in interactive narrative works is often seen as the ability to take meaningful actions in the story world.²⁴ User agency however can also operate along dimensions that are outside the story world, for example camera control in-game. The “meaningfulness” of a player’s action is determined by the degree to which an action expresses intentionality, and the ability of player determined actions to affect the world and progress in a narrative. Thus actions that do not have a significant effect on the narrative provides the player with a low degree of user agency. Interdependent agency on the other hand means that when the agency of a player increases in a game, the agency of the system increases as well.²⁵

The layer above agency relationship is called agency scope. This describes the impact and narrative focus of player and system actions. This can range from immediate and local impact, an example being the ability of spatial navigation, to less immediate and more global results, such as the shaping of the narrative structure.²⁶ Each side of scope spectrum can be used to convey meanings besides the actual narrative. An example given by Harrel and Zhu in terms of a high degree of local player agency and a low degree of global player agency is *Shadow of the Colossus*.²⁷ This difference is

²¹ Harrel and Zhu, "Agency Play," 44-52.

²² Harrel and Zhu, "Agency Play," 48.

²³ Harrel and Zhu, "Agency Play," 48.

²⁴ Harrel and Zhu, "Agency Play," 48.

²⁵ Harrel and Zhu, "Agency Play," 48-49.

²⁶ Harrel and Zhu, "Agency Play," 49.

²⁷ Team Ico, *Shadow of the Colossus*, Video game. (2005; Team Ico). PlayStation 2.

there to render a sense of fate and helplessness.²⁸ The layer that covers both agency relationship and scope is called agency dynamics. This is because the nature of a given agency relationship and the scope of agency impact can vary over time. When stories have a fixed level of agency relationship and agency scope during the entirety of a game, then the game has static agency dynamics.²⁹ Finally, all these different levels of agency can be directed by user input. When a game has a high degree of global player agency but a low degree of local player agency, although the choices and actions a player can make are limited, the fact that a player has user input is what offers players the strong sense of global agency.³⁰

This overview of the framework of user agency shows that, instead of an oversimplified understanding of user agency as ‘free will’, user agency is much more complicated and operates on different levels. *Outer Wilds* adds complexity to its narrative by combining a programmed time-loop and combines this with the player’s disruption of linear time. This framework will help me to analyse the extent to which the player’s disruption reaches in this game. In addition, this framework not only looks at the player, but also at how agency affects or is affected by the system itself.

Time in Games

In the chapter “Introduction to Game Time/Time to Play: An examination of game temporality” Jesper Juul proposes to divide game time into the terms event time and play time.³¹ According to him, event time is the time that the events take in the game world and play time the amount of time you spend playing the game. The relationship between these two terms is called mapping. This means that the player’s time and actions are projected in the game world.³² Cutscenes can influence the relation between event time and play time, because when a cutscene is happening the player does not have control over the character, meaning play time is paused. *Outer Wilds*³³ features no cutscenes so the mapping is almost always symmetrical, with the only exceptions being pausing the game and being in loading screens. To get a better understanding of how game time works in *Outer Wilds*, this framework of Juul can pose a problem. While it functions as a basis for an understanding of time within games, it lacks nonlinear aspects. Most of the framework is based on linearity and nonlinear aspects like save games and reloads are missing.

²⁸ Harrel and Zhu, "Agency Play," 49.

²⁹ Harrel and Zhu, "Agency Play," 49.

³⁰ Harrel and Zhu, "Agency Play," 49.

³¹ Juul, "Introduction to Game Time," 131-142.

³² Juul, "Introduction to Game Time," 133.

³³ Mobius Digital, *Outer Wilds*, Video game. (2018; Mobius Digital). Microsoft Windows.

According to Michael Hitchens, Juul's model cannot represent the potentially complex relationship between the player's experience of time in the real world and the progress they make through the game. He redefines the model and comes up with four different terms: playing time, engine time, game world time and game progress time.³⁴ Playing time is almost similar to the play time of Juul, however cutscenes for example are incorporated in playing time. Game world time is almost the same as Juul's event time. Hitchens argues however that game world time is not a right concept to understand player's progress through a game world, as this concept is a fairly linear approach to game time.³⁵ He proposes the term game progress time, where this nonlinearity of games is incorporated. Before explaining how this is implemented in game progress time, it is important to define what nonlinearity means. Within games, nonlinearity can have different meanings. First it can mean that from the beginning to the end there are multiple paths to choose from. It has multiple paths to completion, meaning that nonlinearity in this case refers to the structure and potential ways of navigating through a game. The second definition is a player's experience of the game world. For instance, it may have to choose between various paths and actions, which is in line with the former definition of nonlinearity, but may later decide or is even forced to return to an earlier point in the game. This can happen through death of the character, creating a death-loop, or reloading a previous save. A player may experience the same part over and over again. This means that game progress time takes into account that certain parts of a game can be played over and over again, which marks a progression in player time, but not in the game world time. This concept of game progress time allows us to see the nonlinear nature of actual play.

The model of Hitchens and the addition of game progress time is more suitable to use when analysing *Outer Wilds*, due to its incorporation of nonlinear elements. The time-loop ingrained in the system forces the player to repeat the same loop over and over again. There seems to be a distinction between the time-loop itself, which is forced upon the player and part of the underlying system, and the way players experience time. The model of Hitchens allows me to analyse this distinction. The addition of game progress time has ushered a new mode of looking at time in games, moving away from a traditional linear perspective of time. The abstract form of game progress time can not be allocated to the simple concept of minutes, but incorporates nonlinearity like saving or dying and looks at time from a player's perspective. Game world time or event time is ingrained in the system, for example fast forwarding in *The Sims*³⁶ speeds up the game world

³⁴ Hitchens, "Time and computer games," 44-51.

³⁵ Hitchens, "Time and computer games," 47.

³⁶ Maxis, *The Sims*, Video game. (2000; Maxis). Microsoft Windows.

time, and although you as a player can control that yourself, the mechanic is still ingrained in the system. Game progress time on the other hand looks at time more from the player's perspective. By looking at both how the system and the player influences time, this will help me pinpoint where the complexity in terms of the narrative lies.

Method

The game *Outer Wilds* will be analysed through the use of a textual analysis, following the book of Clara Fernández-Vara in which she provides an introduction to game analysis.³⁷ Textual analysis is the in-depth study of a text to understand a specific issue or topic. Part of doing a textual analysis is to make sense of a text and its possible interpretations.³⁸ Before I go more in depth in the analysis, I first give an explanation of the game at the beginning of the analysis.

The article ‘Considering Play: From Method to Analysis’ by Jasper Vught and Rene Glas will also be used to determine how *Outer Wilds* will be played for this analysis.³⁹ For this analysis I will adopt both an ‘object’ as well as a ‘process’ focus. The former means focusing on a game as a specific object or a text that are analysed to understand their structure or content. It draws on a more literary tradition and I consider the game’s narrative and also focus on the game its structure to get a better understanding of the user agency.⁴⁰ The ‘process’ approach considers one single playthrough of the game as the object of study. With this approach I will be looking more at the player’s experience. This means that in my analysis I will look at both the underlying system (object) and the player’s experience (process).

By adopting both approaches I can focus on different concepts from my theoretical framework. When playing the game I will pay attention to both the *fabula* and the *syuzhet*. *Fabula* is the raw material of the story and the object focus looks at the content of the story, while my process focus looks more at my playthrough and how I experience the *syuzhet*. In addition, while playing the game I will look at the different dimensions of agency. Agency relationship looks at the relationship between the player and the system. So I will have to look at my actions (process) and how the system (object) reacts to it. The agency scope consists out of local and global agency. To look at the local agency, I need to look at what immediate impact I have on the game, leaning more to the process approach. Global agency on the other hand looks at the impact on the global narrative structure of the game. This is more the object approach, and to see whether for example different choices impact the narrative structure, I will have several playthroughs. Finally I will look at how time works in *Outer Wilds* by using the framework of Juul and mostly Hitchens. Some terms like game world time look at time from an object perspective, so how time functions within the game

³⁷ Clara Fernández-Vara, *Introduction to game analysis* (New York: Routledge, 2015).

³⁸ Fernández-Vara, *Introduction to game analysis*, 8.

³⁹ Jasper van Vught and René Glas, “Considering play: From method to analysis,” *Transactions of the Digital Games Research Association*, 4, no.2 (December 2018): 205-44.

⁴⁰ Van Vught and Glas, “Considering play,” 210.

world itself. Other concepts like game progress time, goes beyond the object and is determined partly by the player's input (process).

I have played the game conform the 'instrumental' style of play. I have sought to survey the full range of possibilities in the game, by for example discovering all planets in the game and to see how much agency I had in the game.⁴¹ This style of play allowed me to look at how the game and the player co exist with each other and the goal was never to push the boundaries of the game to see what was possible, but more to see what was possible within the preset boundaries of the game.

To determine the exact corpus of this analysis I have played through the game once. After having played the game in its entirety I was able to determine what moments I can use for the analysis. The analysis is divided into three different parts, each focusing on one of the sub questions. The aim of each part is to be able to answer the respective sub question. In order to answer the first sub question regarding the user agency in *Outer Wilds*, I will be analysing my adventures on two different planets, named Dark Bramble and Timber Hearth. For the second sub question, to get a better understanding of the narrative and how this is told, I will be focusing on the ship's log. As a player you have control over your own ship and a key aspect through which narrative is conveyed within this game is through the ships log, hence my focus on it in the second part of the analysis. In order to answer the last sub question, I will focus on the time-loop mechanic and how this is incorporated. To get a better understanding of how time works it is essential to focus on this mechanic.

⁴¹ Van Vught and Glas, "Considering play," 214-215.

Analysis

As explained briefly already in the introduction, *Outer Wilds* is a first-person action adventure game. When you start the game you wake up near a campfire and when talking to the nearest NPC you find out that you are a space traveler who is about to embark on a journey with your spaceship. Before you are allowed to use the shuttle you need to find the launch codes on the planet you are currently on. When visiting the nearby observatory to get the codes, you pass an alien statue that suddenly looks at you. Oblivious to what this initially means you continue getting the codes and embark on your first space journey. Not much explanation is given on how to fly the shuttle and the game relies on the player's skill to find this out. When you have this under control you are completely free to go wherever you want and the game does not force you to go in a certain direction. It is all about discovery and it is up to you to uncover the secrets of the solar system and its eight planets. After 22 minutes in real time, the nearby sun explodes, causing a supernova that destroys the solar system and you with it. When you die you have a sort of flashback, seeing fragments of the moments you have experienced during the 22 minutes. After this you wake up at the exact same place and moment in time near the campfire and you discover that you are in a time-loop. When talking to the nearby NPC again, the dialogue options reveal that not only you as a player but the character itself is aware that he is in some sort of time-loop. The goal is to find out what causes the supernova but more importantly the time-loop you are in. The game is mainly about exploration and does not include any combat. You have two instruments, the Signalscope and a Scout, with the former allowing you to pick up strange signals and the latter to send out scouts that can take pictures of places you are unable to reach. Both function as an extension to help you with exploring the solar system. Finally your spaceship has a ship's log, that functions as a hub where everything you discover is saved and linked with each other.

Dark Bramble & Timbers Hearth

I started with Dark Bramble, a planet destroyed by what seems like enormous roots. In order to travel to this planet you have to take control of your spaceship that is situated on your homeplanet Timbers Hearth. A few mechanics become clear when I first travelled to this planet. In terms of spatial navigation, you have complete control over your character and a spaceship you find on your home planet. In this spaceship you can put on a space suit which enhances your ability of spatial navigation, by adding a jetpack. This allows you to freely navigate each planet. The difficulty of the spatial navigation is different on each planet, due to a different gravity. This is an example of what is called agency relationship, as the user and system are in this case interdependent from each other.

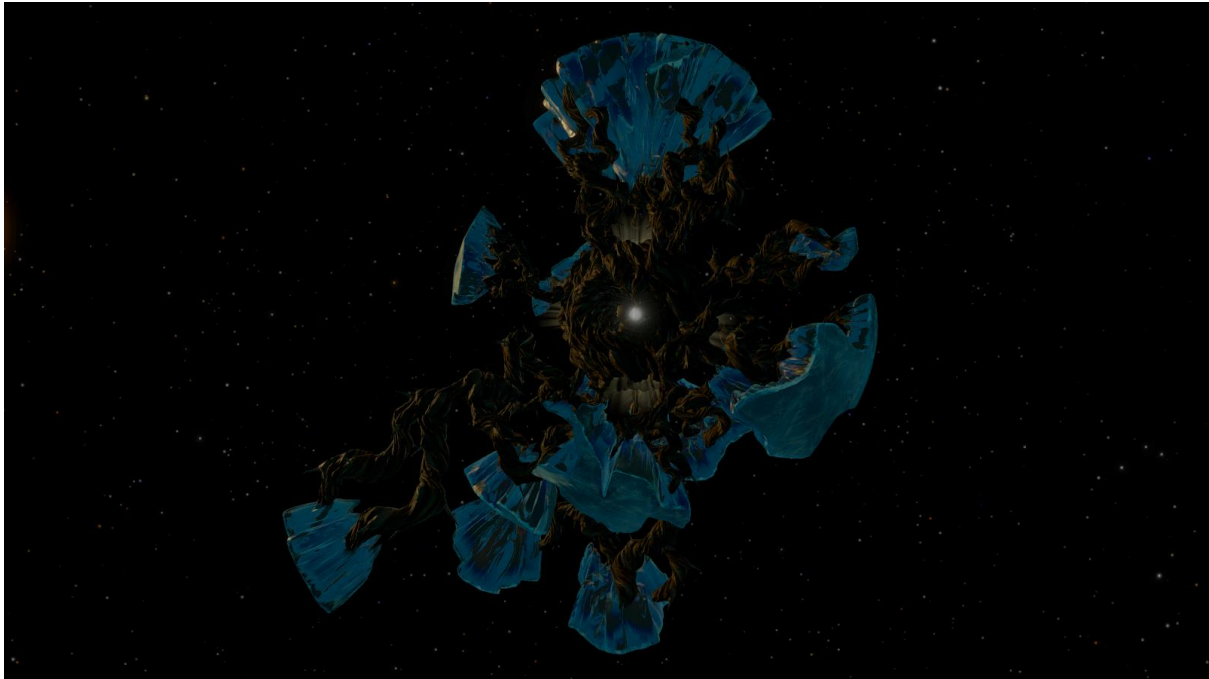


Figure 1: Dark Bramble in Outer Wilds

In order to get a better understanding of the user agency, the framework of Agency Play of Harrel and Zhu will be used. According to them the agency relationship between the user and the system can be independent, inversely dependent and interdependent.⁴² The moment where the spatial navigation of the player is dependent on the gravity of the planet, this means that the relationship between the player and the system in this case is interdependent. This is the case when the player leaves the spaceship and uses his own jetpack. When the player returns to his ship, the complete freedom in spatial navigation results in independent user agency. While complete freedom in spatial navigation is interesting, the most prominent independent relationship in *Outer Wilds* is the time-loop. No matter what you do as a player, the sun will explode after 22 minutes causing you to die and reset the time-loop. Throughout the runtime of the game this relationship stays mostly independent. You spend hours traversing the universe, trying to find clues on what is happening but in the end you meet a fiery death over and over again. This is up until you manage to uncover the secrets at the ending where you are able to stop the time-loop. When you do this as a player all of a sudden the independent relationship turns into an interdependent relationship between player and time-loop. An action you make results in stopping the time-loop and dying at this point means game-over. In terms of narrative complexity, the relationship between the system and player is important to look at. The complex narrative in *Outer Wilds* mainly focuses on a universe that is yet unknown to you and you have to uncover the secrets to why the sun explodes

⁴² Harrel and Zhu, "Agency Play," 48.

and why you are in a time-loop. The time-loop that is forced on you in combination with you being able to travel through the galaxy, results in a feeling of helplessness but at the same time a sense of being able to make meaningful actions by slowly uncovering secrets.⁴³ The complexity here lies in the interrelationship between system and player.

The agency scope can range from immediate and local impact to less immediately apparent but global results.⁴⁴ The player has as mentioned before complete spatial navigation due to your spaceship and space suit with jetpack. You as a player have the ability to interact with every NPC you come across, where you can ask some characters multiple questions whereas with others you cannot. The tools, like the Scout or the Signalscope, allow the player to find secrets or in case of the Scout expand your field of view. In terms of scope this is what Harrel and Zhu call immediate and local impact.⁴⁵ While having a high degree of local agency, the degree of global agency seems to be low in this game. Although as a player you get a lot of freedom in the actions you make, the narrative structure seems to remain fairly the same. This contrast between a high degree of local agency and a low degree of global agency can be read as a sense of fate and helplessness. No matter the actions you make, the sun will eventually explode.

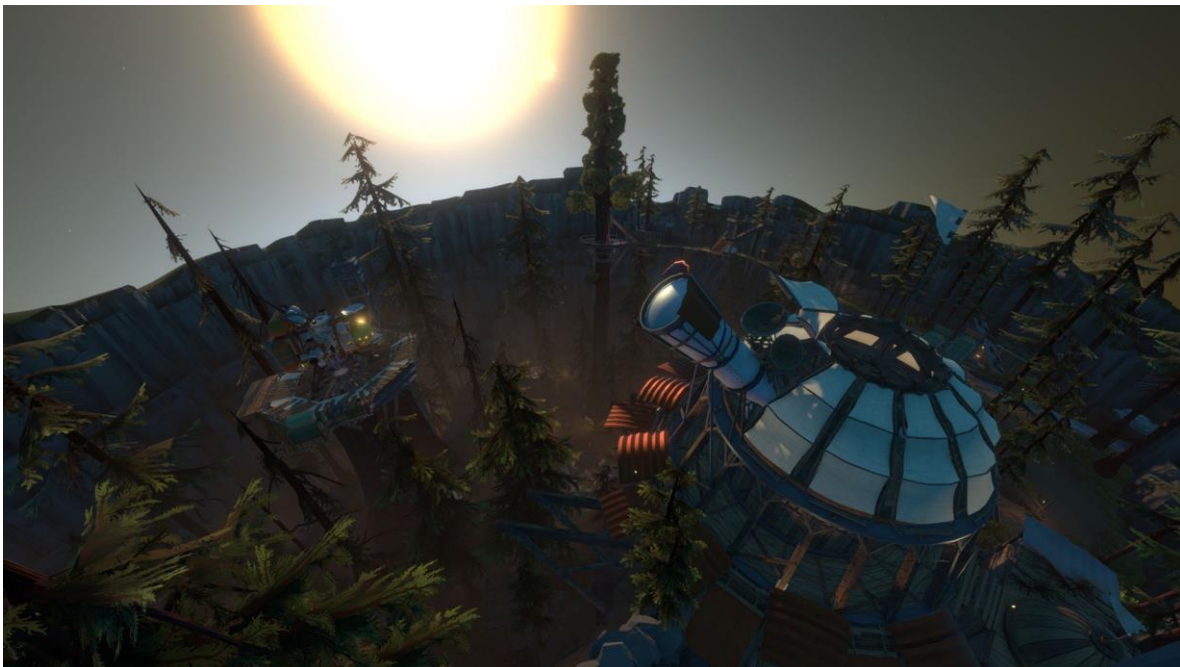


Figure 2: Timbers Hearth, the place where you always start a new time-loop

⁴³ Harrel and Zhu, "Agency Play," 48.

⁴⁴ Harrel and Zhu, "Agency Play," 49.

⁴⁵ Harrel and Zhu, "Agency Play," 49.

but it is important to provide a small nuance. The high local impact you have in terms of spatial navigation, tools you can use and interaction with other characters result in slowly expanding your ship's log. Talking with a character on a planet provides you with new information which is automatically updated in the ship's log. In terms of global agency however, you have less impact. This is true in the way that as a player you cannot change the narrative structure in a way throughout the runtime of the game that result in many different endings. The only difference in endings I discovered during my playthroughs were caused by a small decision you made during the ending sequence of the game. However, although not being able to change the narratives core so to speak, you have an influence on the structure of the ship's log. The choices you make in terms of where you go and what you discover will determine your own individual narrative. This means that for every individual the structure present in the ship's log can be different. In short, the general overall structure stays the same, while the individual structure is determined by your local agency.

The complex story (*fabula*) is experienced in a complex way (*syuzhet*) through the fact that you as a player disrupt the linear time. Every time-loop you can choose to take different paths resulting in different discoveries. At the same time death and resetting the time-loop also affects the complexity of the narrative. What adds to the complexity of the narrative is the fact that user agency is never taken away from the player. Normally cutscenes are added to take away control from the player and function as a narrative utility to advance plot and introduce characters.⁴⁸ And even though *Outer Wilds* contains a complex story, the game never disrupts user agency in favour of narrative advancements, but fully rely on the player to uncover the narrative. Although the player disrupts linear time by choosing different paths, dying or is disrupted by the system when the sun explodes, the high degree of local agency in combination with your agency never being taken away gave me a sense of being part of the narrative.

⁴⁸ Jesper, Juul, "Games telling stories," *Game studies*, 1, no.1 (July 2001): 1-10.

The time-loop

To get a better understanding of the time-loop I will use the framework of time in games by Hitchens, as the framework of Juul lacks nonlinearity. Placing the time-loop within the framework of Hitchens, a few things stand out. If we take the game world time proposed by Hitchens, the time-loop in *Outer Wilds* that the player is in reoccurs after every 22 minutes when the nearby sun explodes.⁴⁹ This means that the game world time is always the same at the start of a time-loop, which is made clear as you as a player always start with looking up in the sky and seeing the same satellite explode. The game world time continues for 22 minutes until the sun explodes and is set back to the beginning time and again (Figure 4).

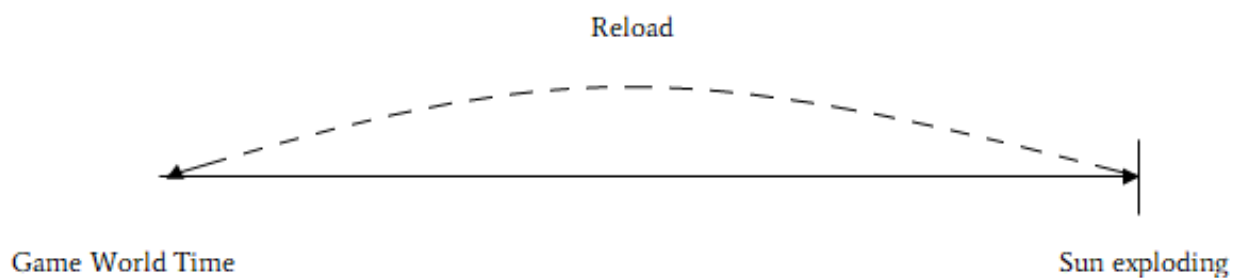


Figure 4: Game World Time in *Outer Wilds*

As Hitchens already notes, this notion of time is just like event time of Juul and remains linear throughout the playthrough. It becomes more interesting by looking at the notion of game progress time of Hitchens.⁵⁰ The game world time discussed before looks at time from within the game world. Game progress time however does not consider game time from within the game world itself, but from the point of view of the player. The time-loop here causes the player to return back to the beginning. This returning back can be attributed as reloading in the model of Hitchens, with the beginning being a save point.⁵¹ When the player is set back to the beginning and starts a new time-loop the game progress time continues, where Hitchens in his model shows this as starting a new layer. The game progress time as such is not just a linear line going from left to right but contains many different layers. When the sun explodes, or you die, you are always set back to the same point in game world time. While the game world time remains linear, looking at the time-loop from the game progress time you see the nonlinearity.

⁴⁹ Hitchens, "Time and computer games," 47.

⁵⁰ Hitchens, "Time and computer games," 46-47.

⁵¹ Hitchens, "Time and computer games," 47.

There is a point of discussion however to be made about game progress time. The nonlinearity discussed by Hitchens, can according to him mean two things; multiple paths to a certain ending or repeating a certain section through the death of your character.⁵² The time-loop enforces both nonlinearities, as every time-loop you as a player can take a different path to different planets and death means playing the same section of 22 minutes again. Hitchens however looks at these meanings of nonlinearity from the player's perspective and experience. The player can deliberately kill himself to enforce the time-loop, as I did several times throughout my playthrough to make it easier to get to a different planet. Although death can occur through the players fault, eventually even if you manage to survive long enough the system forces death upon you by exploding the sun. While both the multiple paths and a form of a death loop can be contributed to the game progress time, the time-loop ingrained in the system cannot be contributed to the player experience of time, but is part of the object. If we would literally take Hitchens framework and his notion of how reloading and saving affects the game progress time it would look like this (Figure 5).⁵³ This would mean that the forced time-loop always reloads you back to the same save point and no progress would be made.

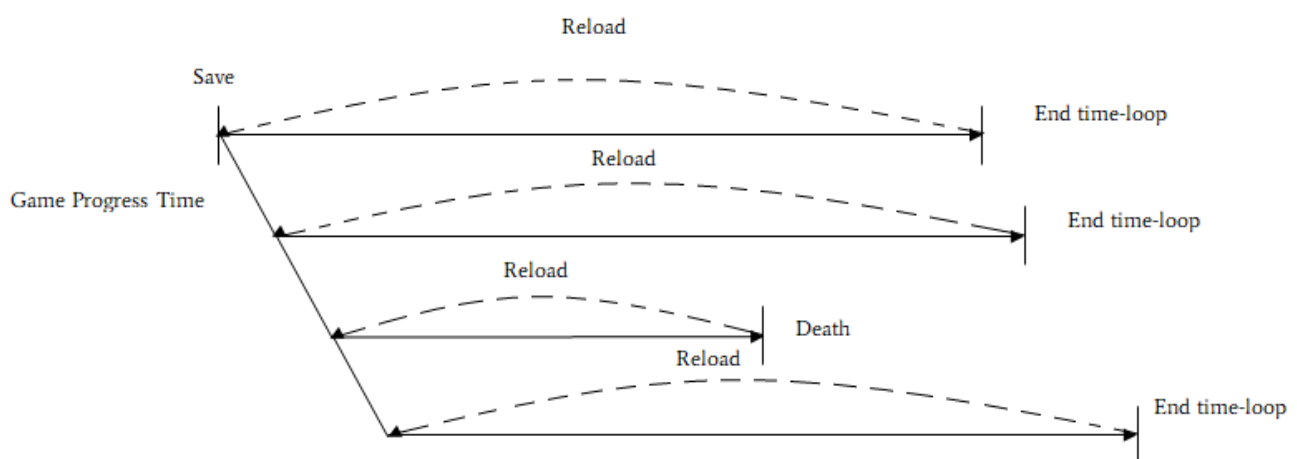


Figure 5: Game Progress Time in *Outer Wilds* according to Hitchens

So although Hitchens has incorporated nonlinear elements in his framework, completely following his framework would not work in this case. He sees death and subsequently reloading to a previous save, thus a previous point in game world time, as a time where no progress is made. You do not

⁵² Hitchens, "Time and computer games," 46.

⁵³ Hitchens, "Time and computer games," 47.

get to a next level or you do not get to a next checkpoint in *Outer Wilds*. This would mean that playing *Outer Wilds* would be futile as no progression is made. But in previous sections we have already determined that when you discover new secrets this is saved in your ship's log. Even dying or just learning to fly your spaceship means you as a player have learnt something, and thus have made some progress. My suggestion would not be to use game progress time, but player progress time (Figure 6). Not only does this give you a better idea of how progress is made in *Outer Wilds*, but at the same time it shows the complexity in terms of telling a narrative.

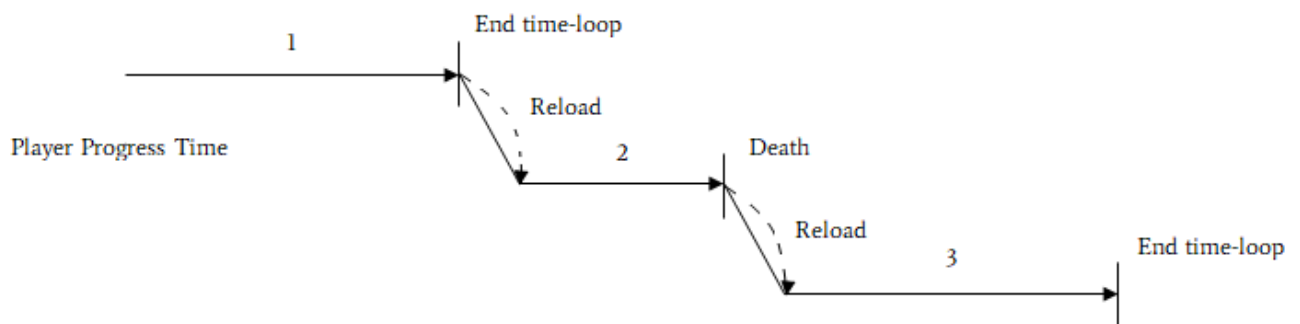


Figure 6: An example of Player Progress Time

In the example of player progress time you can see that when one time-loop ends, due to the sun exploding or through death of your own fault, the reload does not happen to the beginning of that same time loop, but to the beginning of a new time-loop. The three numbers indicate each a separate time-loop, where progress continues but on a different layer. This portrays well how although each time-loop is the same exact moment in game world time, in terms of player progression they function as some sort of different dimensions where the player is fully aware of the time-loop. The player even learns from every single time-loop, which he or she can incorporate that wisdom in new time-loops. It shows that the complexity of the narrative lies both in the system, as in the player's agency. The systems time-loop incorporates nonlinearity and creates multiple different dimensions, in which the player must traverse and uncover the complex narrative with complete freedom. Information about the narrative found in your twentieth time-loop can maybe be linked to information you found in the first time-loop. Although the ship's log is there to aid the player to comprehend this complex narrative, the time-loop and the player's agency have a huge influence on its complexity.

Conclusion

My findings of the two planets resulted in an overview of the user agency in the game. In terms of agency relationship, the independent relationship between player and system seems to be the most prevalent in *Outer Wilds*. While there are a few moments of an interdependent relationship between the player and the system, the player mostly operates independently. The most prominent one being the independent relationship between the player and the time-loop. Throughout the game this mostly remains this way, but at the end you are able to stop the time-loop, thus changing the relationship to interdependent. The complexity lies in this interrelationship between the time-loop ingrained in the system and the freedom the player has to uncover the secrets in the universe. The complex narrative is experienced by the player on two levels. The recurring explosion of the sun and a new time-loop creates a sense of helplessness, whereas the freedom to traverse through the universe gives you a sense of being able to make meaningful actions and eventually find the truth. This is part of where the narrative complexity lies in *Outer Wilds*.

The high degree of local agency and the low degree of global agency became clear when looking at the impact you as a player had on the narrative. The *fabula* stays the same whereas the *syuzhet* is determined by your local agency. You experience a complex narrative in a complex way due to several reasons. You can disrupt the linear time by choosing to take a different path every single time-loop. In addition death and resetting the time-loop affects the complexity of the narrative as it is possible to miss certain secrets when an accidental death occurs. Finally your control is never taken away from you, where normally according to Juul cutscenes are implemented to function as a narrative utility, advancing the plot. The game never disrupts the user agency in favour of advancing the narrative by taking away control of the player, but fully relies on the player to uncover the narrative.

Finally, I used the framework of Hitchens to get a better understanding of how time works in *Outer Wilds*. The time-loop causes the same amount of game world time to be repeated over and over again. Using game progress time was an attempt to better understand the nonlinearity in the game. Following Hitchens notion of reloading to a previous savepoint, the time-loop that is ingrained in the system would always cause the player to get back to the only 'savepoint', which is the beginning of the time-loop. Although nonlinearity was visible in the game progress time, it also showed that no actual progression would be made in this understanding of time. My inclusion of the term player progress time was an attempt to unveil how progress was made and the complexity of the narrative. The system's time-loop created different dimensions of time, where nonlinearity is not only created

by the system, but also through the actions the player makes in every single dimension of a new time-loop. A player can use information he learned in the first time-loop to uncover a secret in the twentieth time-loop. In the end, *Outer Wilds* was built around the concept of time. Not only is time disrupted by the game itself in the form of a time-loop, the player adds another factor that disrupts time.

The literature discussed on time by Juul and Hitchens provided a general framework in order to get a better understanding of time in games. The textual analysis allowed me to go more in depth into one game and put some of the literature to the test. With the term player progress time I have tried to add to the existing framework of Hitchens. This term takes into account that progress by a player is not necessarily reset when a player dies and reloads. By going beyond the existing framework and adding a new time I tried to get new insights in the nonlinearity and thus the narrative complexity in *Outer Wilds*.

The main focus of this paper in terms of narrative complexity was on nonlinearity. While I have aimed to get a better understanding of the term narrative complexity, it remains a broad encompassing term in which many different elements have not been touched upon in this paper. Future research can focus on different elements of narrative complexity, potentially focusing more on the NPC's or even look at how audio is used in *Outer Wilds* to convey a certain narrative. In addition, this textual analysis used the adaptation of the framework of time in games by Hitchens. While having incorporated nonlinear elements in his framework, Hitchens notes that this framework is not intended to be the final word on game time.⁵⁴ Although an attempt has been made in this paper by suggesting a new form of time, player progress time, there is still some potential that this paper has not touched upon. Future research could focus on adapting the framework of time in games, potentially using *Outer Wilds* as a starting point.

⁵⁴ Hitchens, "Time and computer games," 50.

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Appendix: Verklaring Intellectueel Eigendom

Verklaring Intellectueel Eigendom

De Universiteit Utrecht definieert plagiaat als volgt:

Plagiaat is het overnemen van stukken, gedachten, redeneringen van anderen en deze laten doorgaan voor eigen werk.

De volgende zaken worden in elk geval als plagiaat aangemerkt:

- het knippen en plakken van tekst van digitale bronnen zoals encyclopedieën of digitale tijdschriften zonder aanhalingstekens en verwijzing;
- het knippen en plakken van teksten van het internet zonder aanhalingstekens en verwijzing;
- het overnemen van gedrukt materiaal zoals boeken, tijdschriften of encyclopedieën zonder aanhalingstekens of verwijzing;
- het opnemen van een vertaling van teksten van anderen zonder aanhalingstekens en verwijzing (zogenaamd "vertaalplagiaat");
- het parafraseren van teksten van anderen zonder verwijzing. Een parafraze mag nooit bestaan uit louter vervangen van enkele woorden door synoniemen;
- het overnemen van beeld-, geluids- of testmateriaal van anderen zonder verwijzing en zodoende laten doorgaan voor eigen werk;
- het overnemen van werk van andere studenten en dit laten doorgaan voor eigen werk. Indien dit gebeurt met toestemming van de andere student is de laatste medeplichtig aan plagiaat;
- het indienen van werkstukken die verworven zijn van een commerciële instelling (zoals een internetsite met uittreksels of papers) of die al dan niet tegen betaling door iemand anders zijn geschreven.

Ik heb bovenstaande definitie van plagiaat zorgvuldig gelezen en verklaar hierbij dat ik mij in het aangehechte BA-eindwerkstuk niet schuldig gemaakt heb aan plagiaat.

Tevens verklaar ik dat dit werkstuk niet ingeleverd is/zal worden voor een andere cursus, in de huidige of in aangepaste vorm.

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Datum: 11-06-2020

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