Is It all Just Jump Scares? A Look into ELM and Horror

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Abstract

Horror video games are a niche media that often evokes amongst its players. However, horror video games are not widely studied within the persuasive realm of communication studies. This study investigates how through the lens of ELM theory decision-making can be effective within horror video games. Done through a content analysis of horror video game *Soma* this study provides insight and foreground for the importance of future studies involving horror videogame and communication theories.

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Introduction

The horror genre has fueled individuals since ancient times rooted in folklore and religious traditions (Prawer & Jackson, 1982). Fear often can be used as a persuasive tool, known as fear appeal due to the way it emphasizes the danger and harm that can engulf individuals if they do not heed the message's warning within the artifact (Maddux & Rogers, 1983). The genre of horror video games immerses its players in a vast array of scenarios that can induce fear and anxiety as it forces players to sometimes face their deepest fears. While the psychology of horror has been delved into in various studies, there has not been much research in the realm of communication and horror, specifically horror video games.

SOMA is a first-person sci-fi horror game released in 2015 by Frictional Games. Taking place in an underwater remote research facility in the year 2104. This facility contains a plethora of machinery that displays human characteristics. The player will play as Simon, who finds himself not only confused as to why he is there but also faces many dilemmas as his predicament unfolds. A primary theme within Soma is consciousness and artificial intelligence. The creators were adamant about designing the game to rely on the actions of a player, so those who ignore the exposition material (audio logs, notes, etc.) and those who do not may have different experiences with the plot. Soma was developed in hopes of exploring themes of free will and the self.

The study aims to show how horror video games are prominent within the decision-making process beyond just jump scares, as well as set the foreground for the researcher's future studies within academia.

Literature Review

ELM Theory

ELM states that not only are there psychological processes of change involved when a person elaborates, but it argues that when a person encounters some form of communication, they can process this communication with varying levels of thought. These thoughts range from low (low elaboration) thought to high thought (high elaboration). Factors contributing to elaboration include different motivations, abilities, opportunities, need for cognition, etc. (Dillard & Shen, 2012).

ELM is a dual process theory, which can be defined as a theory that shows how a thought or thought(s) can emerge in two different ways (Groves & Thompson, 1970). ELM was developed by Ohio State University professor Petty and University of Chicago professor Cacioppo. The two scholars aimed for this theory to explain the diverse ways people choose to manage (Petty & Cacioppo, 1986).

To mention a few studies within ELM; one was done in an attempt to have online gamers give up cheating was done in 2019, in which ELM and signaling theory was used (Wang et al., 2019), ELM within entertainment education (Li, 2018), and how Esports build confidence in players and give them the desire to play the real sport (Gong, 2016). the information they encounter, whether that be heuristically or systematically. Now focusing on persuasion, Petty and Cacioppo state that there are two routes within persuasion in the ELM theory. These routes are known as the central and peripheral routes. (Petty & Cacioppo, 1986)

Central and Peripheral Routes

There are two persuasion processes or "routes" that occur when thinking. High elaboration will be defined as high levels of thinking, whereas low elaboration will be low levels of thinking. Central route processing, which involves high elaboration, will occur when people are highly motivated and able to analyze the information presented to them. However, what should be realized is that this increased thinking (high elaboration) does not mean increased (high) persuasion. Something is only persuasive if it prompts favorable thoughts on the receiver. If an individual is persuaded through the central route, they are focused on what the message's content was telling them/ what they interpret from said message (Petty & Cacioppo, 1986).

The peripheral route, however, involves low elaboration. The individual is not analyzing the message given to them. Other factors will influence them, such as distractions or other non-content variables. Some of these influences include the attractiveness of the speaker/message, positive emotions, and nonverbal cues. (Petty & Cacioppo, 1986) In ELM, there is a process; this model shows the differences within the routes of thinking. The central route tends to lead to a lasting change in attitude, whereas the peripheral route tends to lead to a temporary change in attitude. (Petty & Cacioppo, 1986).

How to Identify the Route Use

To determine which route to use when using ELM, there are a few contributing factors. The two primary factors are known as motivation and

ability. Motivation isdecided on how relevant the topic is to the receiver. Once the message has successfully been targeted, the next factor is then focused on ability. Ability is primarily a factor used when trying to use central route processing. Ability focuses on how capable the receiver is, if at all, to elaborate on the persuasive message. When assessing a persuasive message, an important thing is that if you want to engage your receivers enough to use central processing, something to heavily consider is their want and ability to process the message (Petty & Cacioppo, 1986).

Receiver Factors in Determining the Message Effect

There are two distinct categories of what affects the receiver since there are two varied factors, motivation, and ability. When assessing motivation, the factor that determines the effect of the receiver is personal relevance. How much does the certain message apply to the individual's personal life? What is their personal relevance towards the message? Does the message apply to the individual's personal life, interests, goals, and life experiences? The receiver's attitude towards the message also affects motivation. Does this individual care about the message? Are they indifferent? Or do they have a negative connotation with the message?

Lastly, cognition affects the level of motivation the receiver will have. Cognition is an individual's need to acquire knowledge. What need does that individual have for cognition? Regarding the factors in assessing the receiver's ability, this will rely on message comprehension. How clear is the message for the receiver? If high processing/comprehension is desired, then things such as message

repetition are best for that result. Another factor for high processing is the receiver's prior knowledge of the topic the message is based on. Lower processing occurs when the receiver has a lack of or no prior knowledge of the topic. Also, when the receiver is distracted or disinterested low processing will occur. Opportunity also plays a factor. While opportunity can be combined with ability (Andrews, 1988), it does not change the fact that the factors within opportunity include many things such as fatigue, time pressures, and social pressure.

Variables

Variables increase or decrease the message's persuasiveness. These various variables can not only determine the persuasiveness of the message. They serve as arguments of even peripheral cues, which in turn are factors in persuasiveness. For example, regarding high elaboration, a given variable of expertise can be used as an argument. So, if the receiver is influenced by cognition and sees that an expert created or agrees with the message, the receiver may be more inclined to analyze that argument. When looking over the conditions of low elaboration, peripheral cues can act as variables. Peripheral cues can be seen as a shortcut, since it does not involve high thinking.

Application in other studies

The elaboration likelihood model and fear appeal are vastly used in many realms, and yet it has not been explored heavily within the realm of horror video games. ELM has been seen in many distinct aspects of life, but for the thesis we will focus on ELM's studies within various aspects of media. One study shows whether media serves as a variable when determining what processing route to take. In this study, Booth-Butterfield

and Gutowski gave students a mix of strong and weak arguments from high or low credible sources; these sources included audio and visual models. (Booth-Butterfield & Gutowski, 1993). Many researchers did studies on ELM and the theories affecting attitude change. One study examined ELMs retention and relevance in youth through advertisement stimuli. This study used an array of age groups (4-7, 8-11, and 12-15). Conducting 330 interviews with these age groups, it was found youth did not specifically use the central or peripheral route for attitude change, but that all three age groups had similarities in their high and low elaboration and involvement, while advertisements may be geared towards the youth, unlike adults they do not use either route of thinking (Te'eni-Harari et al., 2007).

Another study was done to steer user's attitudes using web personalization, the researchers hoped that through ELM theory and consumer search theory this study could set a foreground for future endeavors of business goals for readers. The researchers found that personalization can generate revenue but that the amount of personalization diminishes with attitude. The researchers implemented ELM as well as Consumer search theory (CST). Both these theories were used so that the attitude towards personalization can be measured, as well as how they cognitively process each agent. The research brought light to the relationship between item sampling and item selection. (Ho & Bodoff, 2014).

While there are not many studies on ELM theory and video games, there is a recent 2023 study done in relation to healthy behaviors within RPG (Role Playing Games) video games and ELM. Researchers Rubio, Gallardo, and Besoain (2023) sought to show how theories of attitude were used to create and promote RPGs that promote

healthy decisions. It is pointed out that games have begun to be implemented within education. The researchers created a mobile game where players had to think in favor of the use of condoms through a series of tasks within the game to promote positive attitudes and consonant behavioral intention (BI). Researchers included tailored narratives, game mechanics, and game art that aided their process. This study also showed how ELM could be included within a video game, as well as the strategy the researchers.

Another study aimed to show the effects that ad-persuasion has on online gamers, the placement of branding ads as well as how the games speed factors into the likelihood of a consumer being drawn into the ad consumption. 224 students were included within this study, in hopes that brand recall would be noticeable. Findings revealed that subjects with high-persuasion knowledge reported less favorable brand attitude vs. someone with low persuasion knowledge. The research showed that ad.-persuasion gets effected by the nature of the game. The researchers argue that the brand should take the gamer's characteristics into account more when brand development occurs. (Vashisht & S., 2017)

Fear Appeal

Fear appeal is a persuasive message that attempts to arouse fear to divert behavior through impending danger or something scary. Many scholars have theorized that when fear appeal is being used the perception of threatening stimuli can create fear arousal.

As known and felt amongst humans, fear is an unpleasant state of emotions that involves physiological arousal. This arousal motivates many different responses, such responses are within the realm of behavioral, cognitive, and affective actions. These responses ideally will reduce fear (Ruiter et al., 2001). While there are many theoretical

models in terms of fear appeal, the one focused on for this thesis is Protection Motivation Theory.

Protection Motivation Theory

Protection Motivation Theory (PMT) was originally developed to help theorists and researchers to better understand individuals in terms of fear appeal. Developed in 1975 by R.W Roberts and then expanded in 83' to a general persuasive communication theory. This specific theory within fear appeal is an attitude-based model. PMT, states that a fear appeal argument will institute a cognitive assessment process, this process will consider the threat within the event/instance, the likelihood of the event, and lastly, the efficiency of the recommended behavioral response. If PMT is provoked within the fear appeal the cognitive assessment will process it. Protection motivation is a variable that will arouse, sustain, and will direct the behavior suggested to avoid the danger (Maddux & Rogers, 1983).

When highlighting the severity of the threat, communication attempts to create a sense of vulnerability that motivates individuals to take protective action. Coping appraisal, on the other hand, focuses on the perceived efficacy of suggested protective behaviors. Effective communication should provide individuals with a clear course of action, instilling a belief that they can successfully execute the recommended behaviors to mitigate the threat (Rogers, 1975). This dual approach enhances the likelihood of individuals adopting adaptive behaviors in response to perceived threats. While PMT will be seen traditionally within health communication, it can be applied to understand a player's behavior within the context of video games.

PMT's model can be used to show how players respond to in game rewards, threats, and the motivation to adopt protective strategies within the environment of gaming.

In the context of gaming, a "threat" can be anywhere from obstacles, enemies, or challenges within a game that the players must go through to progress within a game. The severity of these threats can be compared to the consequences that come with incompletion, such as failing a mission or dying. When games are designed, the designers often will employ intense visuals, difficult mechanics, and constrictions within time. The idea behind the concept is so the element of a perceived threat is heightened.

PMT directly applies to horror video games in different ways. To begin, threat appraisal within the horror genre is apparent through ominous environments, scary creatures, and eerie music. These elements are added to provoke fear and anxiety within players, an idea that will be expanded on later within the literature review. The severity of these "threats" are crafted intentionally to immerse players within the gaming world. Coping appraisals directly cross paths with PMT by allowing players many opportunities to overcome and navigate the scary scenarios presenting within horror games. Some of these coping mechanisms include, hiding in game, solving different puzzles, and the use of weapons (Rogers, 1975). When these coping strategies are mastered, they contribute to the self-efficiency of a player. This allows players to believe they can confront and overcome the fear- inducing challenges and storyline within a horror game environment.

When PMT is incorporated within a horror game, it is done so that there is a balance between fear appeals and coping strategies. Just as PMT suggests that effective communication should provide both the perception of threat and the means to cope, horror games aim to immerse players in a terrifying experience while empowering them

to face and conquer their fears through in-game actions (Rogers, 1983). Reward systems and progression mechanisms in horror games serve as positive reinforcements, aligning with PMT principles. Overcoming frightening challenges and surviving encounters often leads to a sense of accomplishment, motivating players to persist and engage with the game's fear-inducing elements (Rogers, 1975). To summarize, PMT helps individuals cope and make decisions in stressful/scary situations. The decisions that PMT help create are a protective environment in the time of threat.

Psychology of Fear

It is important to address not only the emotion of fear, but the genre of horror and why people enjoy it. Fear is a fundamental human emotion, evolved over time as a survival mechanism to protect individuals from potential threats. Understanding fear will allow for a better understanding of the genre of horror and the enjoyment of its consumption. There are quite a few factors that fall into the psychology of fear, one that is important to address as it relates directly to this thesis is how cognition and fear go hand in hand. The interplay between fear and cognition is a process that involves various factors such as attention, perception, memory, and how threatening stimuli is interpreted. Something that plays a huge role in cognition is a person's ability to pay attention, also known as attentional processes. Attentional processes are significant in how fear is perceived, selective attention to threatening cues allows individuals to detect potential dangers in whatever environment they are in.

According to scholars Öhman and Mineka (2001), this attentional bias towards fear-relevant stimuli is part of an evolved mechanism that enhances survival by facilitating the

quick detection of threats. The cognitive system prioritizes the processing of information related to fear, leading to heightened awareness and responsiveness.

Furthermore, cognitive appraisal processes contribute to the experience of fear. Lazarus and Folkman's transactional model of stress and coping (1984) emphasizes the role of cognitive appraisal in determining the emotional impact of a situation. In the context of fear, individuals evaluate the perceived threat and their ability to cope, influencing the intensity and duration of the fear response (Lazarus & Folkman, 1984).

The Enjoyment of Fear

While fear is an emotion many do not like to face, it has situationally become a rush many aim to feel. The enjoyment of fear can be in many forms such as horror movies, thrill-seeking activities, and horror video games. According to Zillmann's excitation- transfer theory (1983) individuals may derive pleasure from fear-inducing stimuli due to the heightened physiological arousal experienced during fearful situations. The theory suggests that when fear is evoked, the resulting arousal intensifies emotional experiences, leading to a more intense positive emotional response when the fear is resolved (Zillmann, 1983).

Another concept introduced in 1994 by Rozin, Markwith, and McCauley known as "benign masochism", suggests that individuals enjoy fear due to the stimuli being perceived is not threatening. When engaging with fear in a controlled and comfortable environment, such as playing a horror game, it allows individuals to experience the thrill without any perceived danger (Rozin et al., 1994).

Horror Video Games: A Psychological Rollercoaster

Horror video games have been taking the world by storm, not only do these games allow players to immerse themselves in a fear fueled zone, but it also allows gamers to have a sense of community. Airband conducted interviews with a handful of gamers from the gaming community to try and find their motivation behind these phenomena of horror games. Callum Marshall, who is the Gaming Managing Editor for Indie Game Culture, stated that horror games differ from your everyday RPG and FPS titles due to an "interactive experience that humbles the player, makes them feel vulnerable, and has them question gaming decisions they would make without a second thought AirBand (2023).

Horror games specifically offer an environment as well as an adrenaline rush that no other gaming genre can quite offer or even match. Horror games can be internationally prevalent when largely popular streamers such as PewDiePie and Markiplier come into play. Both streamers earned notoriety and following due to their streams of horror games such as Five Nights at Freddy's, the Amnesia series and so much more. It can be noted that PewDiePie cultivated his mass following due to his play though of Amnesia: The Dark Descent. It can be argued that people watch horror streamers because big reactions from big personalities can be entertaining, this concept allows a relatability to players and streamers because of the humanizing factor within horror games.

Twitch streamer Laura when asked why she loves playing/streaming horror games can be quoted saying "I have been streaming on Twitch for 3 years and my community LOVES to see me jump! I think there is an enjoyment of all being scared together when it comes to horror games that create a bond between us" AirBand (2023).

There has been “The psychology of attraction to Horror films: A qualitative study." by scholar Caruana (2019). The author’s justification for this study is to examine the psychological attraction to horror films. The author hoped to find how and why the genre has an ever growing following. The main concepts within the study are attraction to horror films, sensation seeking, and horror film fandom. The author operationalized the by reviewing a collection of prior studies conducted by other researchers. The researchers aim was to better understand the horror genre through the lenses of a horror enthusiast, and those who actively dislike it. To achieve this, they wanted to gain as much information as possible from those who are exposed to horror the most. The methods used were semi-structured interviews (p.27). The questions chosen were open-ended to allow the horror enthusiasts to make small digressions. The author claimed that it made respondents feel safer to answer the questions so freely. There was also a niche sampling specifically purposive sampling. There were some guidelines the participants had to meet to be considered for the study, that are as follows: They had to be horror fans/ enthusiasts.

The author stated their criteria on page 28. - Self-identifying as a horror fan or enthusiast - Possesses more than entry-level knowledge on the subject - Seeks out or partakes in local horror events - And owns at least one item of horror memorabilia, such as a CD soundtrack, clothing, or posters.

The author also states that this study is a qualitative approach to social scientific research. This is typically chosen by researchers who aim to discover more research and analyses that is beneath a phenomenon. I.e., Phenomenological research. The author notes that it was more of a positivistic approach. The author claims the transcribed interviews were analyzed to find similarities to answer the research question. Four prominent themes were discovered through this narrative process. These were categorized as a change in mindset, realism vs. fictional horror, the fantasy of horror, and the thrill of fear. The author states that even though the interviews were "rich in individualism".

The common themes stated above could be found in the similarities of the horror enthusiasts' feelings towards the genre. (p. 43). It was also observed that the themes had to be working simultaneously since they influenced one another. As stated by the author "the identified themes must work harmoniously to influence the viewer's perception of the genre to shift from a negative one to a positive one - all respondents claimed this to be the reason they love horror as much as they do, and that the wide range of emotions experienced during a horror film would ultimately result in a positive response and the desire to return to it." While Caruana's study did not confirm or disconfirm her research questions

proposed, this research provided some groundwork for the ongoing question of why people enjoy the horror genre (Caruana, 2019).

Another study examined threat stimulation and horror entertainment by scholars Clasen, Kjeldgaard-Christiansen, and Johnson (2020) provide support for a theory known as the Threat Simulation theory of Horror, which states that horror media provides a form of benign masochism (a concept that is discussed in the above section). This form of benign masochism provides an offering of negative emotional stimulation through threatening scenarios.

The researchers supported this through the conduction of an online survey of horror preference and personality. The sampling consisted of a North American population, those who are horror fans and those who are not. The results found support a concept known as the evolutionary threat-simulation hypothesis, in direct correlation to horror. The researchers explain that the hypothesis proposes that people tend to find pleasure in imaginative experience with threat scenarios because these scenarios allow people to prepare for a real-world threat stimulation. When an individual desire intellectual stimulation, they find the use of horror gratifying thus allowing space for emotional and cognitive play in horror media (Clasen et al., 2020).

Welcome to the world of Horror video games: All things macabre

The world of horror games is a winding road that is still being built today. With the foundation of immersion being at the forefront, this section of the

literature review will be going over the evolution of horror videogames. Throughout its history, the horror video game genre has evolved, incorporating new technologies, storytelling techniques, and gameplay mechanics to deliver increasingly immersive and terrifying experiences for players.

However, this concept began much more modestly through its implementation of horror elements in the 1970s and 80s. These elements were very much limited due to the technology available at the time, which involved simple graphics and background sound effects. A notable game for the horror genre was Haunted House produced in 1982, available on the Atari, essentially the game laid the groundwork for future survival horror games as it immersed players in a haunted mansion and it was their job to escape without getting caught by the ghost Mr. Graves. However, another horror maze was released for the Sinclair ZX81 known as the "3D Monster Maze", which threw an even scarier monster for players to avoid the T-REX. As players went through this maze, things such as the monster's anxiety levels would pop up throughout the game, this was another stab at survival horror.

However, it was not until the 1989 game "Sweet Home" developed by Capcom, that survival horror took true shape. Based on a Japanese horror film, the game Sweet Home sets the story of five filmmakers exploring a mansion, in which they encounter ghosts and supernatural entities. This game had its players navigate an intricate mansion, with limited health and weapons to battle enemies. With five endings, the game's narrative moves forward whether the five main

characters stay alive. While this game, at the time did not localize itself in western markets, due to its imagery and lack of popularity outside of Japan, it is considered a landmark game as it can be often cited as laying true groundwork for horror games as well as the subgenre "survival horror". Sweet Home actually was the main inspiration behind the critically acclaimed 1996 Resident Evil , which is now a multimedia franchise (Lambie, 2019). Due to these games, around the 90s the gaming industry would branch out to all different aspects of horror. Whether that be gore, third person exploration, and even adventure games produced gruesome projects.

Resident Evil Series

The 1996 series Resident Evil, as stated above, is often credited by different outlets for being the catalyst for horror's popularity. Released for the PlayStation, Resident Evil did something games at the time didn't do, through cinematic cutscenes, atmospheric motifs, and a tense environmental gameplay. Resident Evil was also one of the pioneers for the utilization of 3D environments, which allowed players to explore detailed locations (Mason, 2023). Like Sweet Home, Resident Evil emphasized the idea of puzzle solving and resource management. The concept once again set horror from the rest as it provided an intellectual challenge. This game paved the way for many horror games to follow such as Silent Hill, Dead Space, etc. While Resident Evil was a martyr for the evolution of horror games, its significance to the genre today directly relates to the importance of this content analysis which will be delved into in later sections.

Amnesia

Before we delve into the game of SOMA, it is imperative to go over its sister game franchise Amnesia. Developed by Frictional Games, this franchise consists of numerous titles such as "Amnesia Dark Descent" (2010), and its sequel "Amnesia: A Machine for Pigs" (2013). These games are known for their innovative approach to horror due to the emphasis on psychological tension and vulnerability, this series is influenced by the horror work of H.P Lovecraft.

The significance of the franchise lies in environmental storytelling and its unique manipulation of a player's perception in the hope to induce fear. Dynamic lighting, disorienting level design, and unsettling audio cues contribute to a psychological horror experience that immerses players in a world where the line between reality and imagination becomes blurred (Oliver et al., 2022). Highlighted by Brown and Davis (2016), the Amnesia games represent the shift towards psychological horror, where fear is not solely derived from external threats but is deeply rooted within the internal threats within a player's psyche. A study done in 2018 aimed to show elements used to manipulate player industry. This study highlighted the Amnesia series due to its emphasis on staging. the study goes to explain the psychological parmeters within Amnesia, explaining how within this series the sanity of the player is largely emphasized, which poses many constraints on the player.

These parameters are dependent on various levels of light and darkness in areas within the game. Simply put, if a player stays in the dark and consistently

looks at the monsters, this will drain the sanity of the player. However, if the player exposes themselves to light makes the player sane. If the player in Amnesia is mentally unhinged, the game's world will be largely imagined by the player's character. This concept thins the line between what is real and what isn't within the game. This study allowed the researchers to develop an Agency Parameter Model that can categorize different elements within select horror video games. The aim of the study was to provide further insight on how horror games seek to make players assimilate the emotions of their avatar (Boones & Mieritz, 2018). This brings me to the game SOMA and its importance as an artifact within this, throughout this section, not only will SOMA be delved into, but the concept of human consciousness and fear will as well.

The Origin of Soma

While the Soma that is being referred to within the study is the video game, it is important to understand the origins within the whole aura of Soma. The origin of the word directly correlates with a person's perception. "Somatics is the field which studies the 'soma': namely the body as perceived from within by first-person perception.

When a human being is observed from the outside—i.e., from a third-person viewpoint—the phenomena of a human' body' is perceived. But, when the same human being is observed from the first-person viewpoint of his own proprioceptive senses, a categorically different phenomenon is perceived: the human soma" (Höök et al., 2018, p.6). In relation to the video game, the plot was

expanded on in introduction. SOMA is about human perception and the human psyche.

When speaking of the video game, SOMA is a first-person horror game, with a linear story path. *"SOMA* received "generally favorable reviews", according to review aggregator *Metacritic*, scoring the game 84/100 for PC and 79/100 for PS4 versions. Caitlin Cooke from *Destructoid* said that "SOMA gets everything right about the survival horror genre. It is like someone created the perfect video game mixtape", while the community on *Slant* agreed that the game offered an unsettling, thought-provoking story, that helped create a dreary and anxious atmosphere. (Wiki, *n.d.*).

SOMA is a first-person sci-fi horror game released in 2015 by Frictional Games. Taking place on an underwater remote research facility in the year 2104. This facility contains a plethora of machinery that displays human characteristics. The player will play as Simon, who finds himself not only confused as to why he is there but faces many dilemmas as his predicament unfolds.

A primary theme within Soma is consciousness, and artificial intelligence. The creators were adamant on designing the game to rely on actions of a player, so those who ignore the exposition material (audio logs, notes, etc.) and those who do not may have different experiences with the plot. Soma was developed in hopes to explore themes of free will and the self.

While Soma is like most games created by Frictional Games such as Amnesia, it goes a step farther from the typical exploration and stealth games many horror gamers are used to. Frictional Games takes away the well-known

"inventory management" aspect to have a tight focus on the narrative of the story. Soma is a very narrative driven game that is meant to stick with its fans especially due to the mature themes discussed above.

Jump Scares and Soma

Jump scares can be seen all throughout horror entertainment, especially horror videogames. Jump scares are created in hopes to startle or surprise players, which can involve sudden and unexpected events and movement. Frictional Games game Amnesia (which is discussed above) played a big role in jumps care development, as it had many peppered throughout the game which added to a player's unease.

However, while Soma does have jump scares, it relies on narrative driven horror as well as the existential themes discussed. The atmosphere Soma manages to crate is one that eerily challenges a player and their perceptions. In Soma is is important to understand that the horror evoked and curated is more psychological as well as existential, as identity, consciousness and artificial intelligence are at the forefront. The game does include jump scares; however these scares are crafted to fit within the thematic elements of the game, which ultimately affect the player.

The Fear of Consciousness

Being conscious is an evolutionary advantage for humans, as we are the only animals who can think of the past, present, and future. Humans have a sense of self, this allows us to do things such as analyze, imagine, plan, and decipher symbols etc.

Neuroscientist Antonio Damasio has described the basic skills as core consciousness. However, when it is more developed (I.e. thoughts of past and future) such skills are called autobiographical consciousness. (Gavrilina, 2021). You can notice that humans often tend to find themselves, doubting their abilities, being negative, thinking unpleasantly, the list goes on. Arguably, this makes consciousness frightful to many. Due to us paying attention to the quality of our thoughts, we lose out on the present moment.

When looking at human consciousness through the lens of a communication scholar, it can be noted that it must be overviewed how communication processes and symbolic interactions can contribute to the nature of self-awareness. Blumer's Symbolic Interactionism Theory within communication emphasizes how the use of symbols and language plays a role in shaping an individual's identity as well as their social reality (Blumer, 1969). It can be argued that the fear individuals associate with consciousness stem from the symbolic meaning's individuals can attach to their thoughts of self- awareness. Another theory that supports this fear is Berger and Calabrese's Uncertainty Reduction Theory (Berger & Calabrese, 1975).

The theory can be applied when trying to understand the concept of feat and its relation to the unpredictability of human consciousness. The uncertainty surrounding a person's thoughts and the inability a person possesses to control and comprehend the conscious mind ultimately can contribute to one's fear of consciousness.

The game Soma explores this concept and blows it up as seen in the section where Soma's plot is explained. It will be argued throughout this thesis that the effects of the videogame Soma directly influence not only the decision-making process within videogames, but it can affect someone's elaboration process.

Fear and Decision Making

The fear of consciousness can impact decision making due to how it influences cognitive processes, emotional responses, and how self-awareness is perceived. When someone experiences the fear of consciousness, this individual can experience something known as cognitive overload. If an individual is burdened with self-awareness, they could have the tendency to constantly evaluate how they think or act. This cognitive burden can impede on the clarity of thought and ultimately hinder the decision-making process (Baumeister & Masicampo, 2010).

This fear can also be connected to existential anxiety, which is known as the awareness of one's existence and morality. When someone must engage in decision making this can be directly influenced by a need to avoid confronting existential fears and uncertainties (Yalom, 1980). When immersing through the gameplay of Soma, Simon (the player's avatar) will often find himself having to often make decisions throughout the game's story, which ultimately causes the game's outcome. Now while some of these decision are made for the player due to Somas linear gameplay, there are nuances in the game where the player has to make decisions , such as deleting files, finding lore within the game etc. this is where the real life players questioning of decisions come into play, the more the

player seeks throughout the game , the more the player may be inclined to effectively think about the decisions they make within the game.

While throughout this section it is aimed to set the groundwork for the concepts behind Soma's ability to being an effective game when it concerns decision making through persuasive theories (which will be discussed in later sections of the literature review), it is necessary to give a brief overview of gaming lore within Soma.

Gaming Lore

Lore is a term within gaming that simply means the game's story. Lore relies on world building as well as its rich narrative to encompass the games past, present, and potential future. While there are a multitude of ways to get lore within a video game, the focus will be the lore of Soma. In Soma, the linear story and lore are interwoven together. Soma allows the player to collect lore through different means such as pre-existing texts, pictures, and recordings which the player can read, look at, or listen to.

They include journals, diaries, orientation videos, data buffers, computer screens, audio logs, memos, post-it notes, sketches, tool instructions, diagrams, surveys, and the main hero's unique ability to listen to other characters' last moments before they die by connecting to their black boxes. Other methods include dialogue with Catherine, your gray area companion throughout the game, the environment and character design within the game (Wolek, 2022). However, you could go about the whole game, without experiencing the lore within the game of Soma, as a lot of the rich lore is hidden in plain sight as seen above. The reason lore is so important is due to how the finding of lore will ultimately

influence the high elaboration of a player. If a player does not search for the lore, then they could be more susceptible to experiencing jump scares within the game.

Why ELM and Soma?

There are few studies done within ELM theory that cover video games, and even fewer that explore the realm of horror. The reason lore is so significant besides what is spoken about above is because the phenomenon of the horror genre is ever growing. Communication scholars should begin studying within the horror subgenre so we can find ways to incorporate this within academia. The reason Soma is an important artifact is due to how timely its subject matter is in today's day and age. With technology growing with things such as artificial intelligence, human-like robots, etc. The plausibility that people begin to question humanity and even the ultimate intention of what is to come of these ever-growing technological advances, it is natural for fears to arise.

While Soma is a very exaggerated version of this concept, it does not change the fact that players are ignited with these prolonging thoughts. Also, Soma's gameplay and concept drives a player's decision making, and they effectively can do this without jump scares within it. Soma may not be a unique game in terms of its genre of survival horror. However, it is a unique game in the sense of how it atmospherically has the potential to make players think about their in-game decisions and frighten them through narrative.

However, this begs the question when applying the theory ELM, when given a game with both elements of high and low elaboration (i.e. narrative and atmospheric jump scares) what is the driving factor when fear is inflicted? When

sat in front of a horror game, are the jump scares within the game what frightens people, or is it the story within the game that truly sticks with someone in the real world?

This study could be revolutionary within the world of communication due to the freshness of its artifact, horror is an extremely popular genre. With that being considered, and how much fear affects people, this will allow future research into how fear fuels our central and peripheral routes. One can argue, if done successfully, the realm of story- based horror games can be melded to better help people not only make decisions, but this can also allow games to make stories that will stick with someone long term. Horror video games have the potential to be a persuasive tool, and Soma is a mix of everything good about a horror game. In order to keep ELM theory fresh, it is important to implement these modern-day factors in a more retro communications theory

Research Questions

1. What peripheral cues, (e.g. background music, lighting, and visual effects) are present within the sequences analyzed in "Soma"?
2. What central cues (e.g. character interactions, dialogue, and plot developments) are present within the sequences analyzed in "Soma"?
3. What elements or textual features within the sequences analyzed in "Soma" serve to establish and expand the game's lore?

Method

After completing the IRB process (see Appendix A for approval form). The study sought to investigate the patterns in different elements within SOMA that activate a person's elaboration through potential central and peripheral cues. Looking at this through the lenses of ELM theory and PMT, specifically by examining different gaming sequences in hopes to unveil different cues that can trigger different cognitive elaborations. The aim of this study is to set the groundwork for future studies within the realm of horror gaming and persuasive tools, as well as preliminary work for the researcher's future dissertation.

The artifact being used is sci-fi horror game SOMA (see Appendix B for in-game photos) , made by Frictional Games, released in 2015 . How this game will be accessed is through YouTube, in where youtuber patologTV did a multipart commentaryless walkthrough of the game. Due to SOMA being a linear game, this method is most efficient due to the ability to pause as well as analyze the game holistically. PatologTV was chosen due to their mission statements regarding gaming, which states: "Cinematic game walkthroughs with a big focus on smooth gameplay and showing everything the game has to offer" (PatologTV, n.d.). There will be 8 videos watched through and coded;

each video is the same playthrough, broken into parts for ease of access and organization.

The sections of the game being look at are Site Upsilon, Site Lambda, Delta, Theta, Omicron, the end of Tau, and Site Phi/the ARK. This is due to how impactful these sections are within game play and the progression of the games story. Due to the nature of the study, the research tool being used is a content analysis.

A content analysis is used to categorize and classify different types of communicative tools. However, in recent times content analysis have often been used to understand and analyze different aspects of media. Political scientist/ communication theorists Harold Lasswell began the foundational work for content analysis by asking the core question “Who says what, to whom, why, to what extent and with what effect?" (Lasswell, 2008). This method then took a quantitative approach due to communication and media scholar Berenard Berelson, who suggested the definition of a content analysis (Albig, 1952). In recent years, content analysis has been being used to analyze media content and logic. The type of content analysis being used is a conceptual analysis, so that the frequencies of when something occurs in game can be recorded. Which will be done through human coding by only the

researcher. Microsoft Excel will be used for coding (see Appendix D for excel sheets).

A series of questions will be asked to first identify if the variable is present (0 = no,1 = yes) be rated on a scale of 0-4 to see if different variables are effective and present, as well as how effective and present those variables are. The variables being looked at are: lore, decision making, existential horror, atmosphere and jump scares. (see Appendix C for codebook).

Definitions

Definitions were created to ensure the variables they are looking for remain consistent (please see Appendix C for SOMA codebook). To begin there were general terms defined, these terms are seen throughout each category within the questions asked throughout the analysis. Effective is defined as "able to produce desired effect whether that be through peripheral or central cues, i.e. how impactful was the message being received". Prominent is defined as "noticeable".

Although, not in the analysis questions the terms central and peripheral cues, due to the relevance the terms share within the research questions. Central cues is defined as requires high elaboration, content heavy. Peripheral

cues is defined as requires low elaboration, general impressions, visual prominence (Petty & Cacioppo, 1986).

Lore: Definitions and subcategories

Lore is peppered throughout Soma; therefore, it was important for lore as well as lore's subcategories within Soma were defined. Lore is defined as "backstory, history, and world building elements that make up the game". Categories for lore as well as the numbered attached to them for the coding process include audio recordings (2), notes (3), data buffers (4), dialogue (5), case files (6), surveys (7), and emails (8). Audio recordings are defined as "in-game prerecorded dialogue, located in various areas entitled "Audio Player". Notes are defined as "in-game writings/ drawings in various areas (e.g. sticky notes, notebook paper) will be handwritten". Data Buffers are defined as "in-game, within various terminals there will be the label "DATA BUFFER", once activated will play out."

Dialogue is defined as "conversations between characters, conversations with In-game self." Case Files are defined as "reports/Documents found that detail extra information." Survey's is defined as "in-game questionnaire, labeled "Calibration survey". Lastly, within the category lore, Emails are defined as "In-game messages found on various computers."

Decision Making: Subcategories

Although a linear story, Soma involves decision making throughout the game to immerse the player, the categories for decision making and the numbers assigned to them for coding are forced (3) and optional (4). Decision making is defined as "in game choices made through the main character (Simon)." Forced is defined as "in-game decisions that have no other option in order to progress the game." Optional is defined as "in-game decisions that have more than one choice, doesn't impact game progression." ***Existential Horror:***

Existential horror is defined as "Cognitive and emotional experience of existence and the meaning of life. (e.g. conversations with robots, fear/questioning of human consciousness)". No subcategories were included due to broad nature of existential horror.

Atmospheric: subcategories

Atmospheric horror is something the researcher believes to be important in any horror game, atmospheric horror is defined as "fear evoked through the elements of audio, artwork, and in-game map design that can elevate game experience." Categories within atmospheric horror include sound. (2), lack of sound (3), and visual (4). Sound is defined as "in-game audio." Lack of sound is defined as "in-game absence of audio that aids games atmosphere." Lastly,

visual is defined as “in-game aesthetics and level designs that aids in game atmosphere.”

Jump Scares: Subcategories

The last set of terms defined within the code book is what a jump scare is and what is included within that. Jump scare is defined as “a scripted moment intended to startle player.” Categories within jumps cares include noise (5), hidden attack (6), hide and seek. (7), the chase (8), and surreal scare. (9). Noise is defined as “loud or jarring sounds.” Hidden attack is defined as “a scare that comes out of nowhere.” Hide and seek is defined as “hiding from monster who is in the same area as player.” The chase is defined as “attempting to run from monster trying to catch up to the player.” Lastly, the surreal scare is defined as “Something so out of the ordinary it is startling (e.g. monsters).”

Results

Present Peripheral Cues (RQ1)

One of the research's goals was to identify the peripheral cues within Soma's sequences. RQI ask's what peripheral cues, (e.g. background music, lighting, and visual effects) are present within the sequences analyzed in "Soma"? (see Appendix D for tables).

It can be noted that there are peripheral cues consistent throughout the sequences within Soma. The peripheral cues being examined were atmospheric horror (sound, lack of sound, and visual), and the jump scares within the game (noise, hidden attack, hide and seek, the chase, surreal scare. Timestamps were recorded in which these cues occurred and identified each type.

Site Upsilon

Site Upsilon is one of the first game levels; sequence A, B and C that the atmospheric horror found was (2) sound and (4) visual. The prominence of all in-game sequences (A, B, C) was seen to be measured as (2) prominent. However, in-game sequence C differed in effectiveness compared to A and B, being measured as (1) slightly effective. Whereas in-game sequences A and B was measured as (2) effective (see Table 1).

Table 1 Similarities in Prominence and Effectiveness for Atmospheric Horror

Similarities found within different in-game sequences

In-game Timestamps	Atmospheric Horror Found	Prominence	Effectiveness
(A) 17:07-17:34.	2,4	2	2
(B) 18:48-19:20	2,4	2	2
(C) 42:43:00	2,4	1	2

A multitude of in-game sequences had both sound and visual atmospheric horror present, as well as noted as (3) very prominent and (3) very effective. (See Table 1.5).

Table 1.5 Similarities in Prominence and Effectiveness for Atmospheric Horror

Similarities found within different in-game sequences

In-game Timestamps	Atmospheric Horror Found	Prominence	Effectiveness
(D) 18:28	2,4	3	3
(E) 19:24-19:56	2,4	3	3
(F) 20:23-20:29	2,4	3	3
(G) 28:02-28:41	2,4	3	3
(H) 29:54-30:00	2,4	3	3
(I) 30:04-30:41	2,4	3	3
(J) 33:46-35:01	2,4	3	3
(K) 36:50-40:19	2,4	3	3
(L) 41:22-41:33	2,4	3	3
(M) 41:34-42:15	2,4	3	3

(N) 46:54-48:19	2,4	3	3
(O) 52:27-53:38	2,4	3	3
		3	3

It can be noted that if an in-game sequence did have atmospheric horror it was almost always (4) visual accompanied with (2) sound. The exception to this is when (90) atmospheric horror was not present within the game, due to that the prominence and effect could not be gauged. Outliers within the data included in game sequences P and Q, while both indicated to only have visual atmospheric horror. P was seen to be (3) very prominent, it was only effective. Q was seen to be prominent and effective. Insignificant data found was during In-game sequence R, this is due to the fact while it was. Seen to be sound and visual atmospheric horror, it was (0) not prominent and (1) slightly effective (see Table 1.6).

Table 1.6 Outliers and Insignificant Data

In-game Timestamps	Atmospheric Horror Found	Prominence	Effectiveness
(P) 46:20-46:38	4	3	2
(Q) 50:52-51:09	4	2	2
(R) 35:17-35:19	2,4	0	11

Jump scares are not relied on very much within the Site Upsilon level, as majority of what the research found was that jump scares were not present within

the sequence(s) therefore the effectiveness cannot be measured. However, where jump scares do occur it was found that nearly all of them were (3) very effective. It can be. Seen that the most effective jump scares are (6) hidden attacks and (9) surreal scares.

The research also notes that when a surreal scare occurred (Jc and Jg) the same monster was present. The surreal scare was accompanied with another scare, sequences Je and Jg consisted of (7) hide and seek. Whereas sequence Jc consisted of hidden attack. The only time that jump scares were seen as (2) effective was during sequences Jb and Jf. The jump scares seen within the sequence was (5) noise (see Table 2).

Table 2 Jump scare occurrence and effectiveness

Similarities found within different in-game sequences

In-game Timestamps	Jump scare Type	Effectiveness
(Ja) 18:28	6	3
(Jb) 19:24-19:56	2	2
(Jc) 20:23-20:29 6,9 (Jd) 25:38-24:46 6		3
(Je) 33:46-35:01	7,9	3
(Jf) 36:09	5	3
(Jg) 46:54-48:19	7,9	2
		3

Site Lambda

The next game level analyzed was Site Lambda, when looking into peripheral cues. It was apparent that atmospheric horror was prominent throughout. A majority of Stie Lambda's in-game sequences consisted of sound and visual atmospheric horror. The outlier within this was sequence LQ, while it had visual horror, it conveyed (3) lack of sound. When looking at the prominence of atmospheric horror within Site Lambda mostn were scaled as very prominent. Sequences LC, LD, LG, LK, and LO, however, were scaled as prominent. Outliers within the data was in-game sequence LI, which was scaled as (1) slightly prominent.

These concepts cross apply within effectiveness as a majority was scaled as very effective. Sequences LC, LD, LG, LK, and LO, however, were scaled as effective. Outliers within the data was in-game sequence LI, which was. Scaled as (1) slightly effective (see Table 3).

Table 3 Similarities in Prominence and Effectiveness for Atmospheric Horror

Similarities found within different in-game sequences

In-game Timestamps	Atmospheric Horror Found	Prominence	Effectiveness
(LA) 56:49-57:02	2,4	3	3
	2,4	3	3
(LB) 58:07-1:01:29	4	2	2
(LC) 1:02:06-1:02:46	4	2	2

(LD) 1:03:20 (LE	4	3	3
1:03:26-1:04:32 (LF)	2,4	3	3
1:05:55-1:06:53.	4	2	2
(LG) 1:09:12-1:10:01	4	3	3
(LH) 1:10:58-1:11:09	4	1	1
(LI) 1:11:10-1:11:57	2,4	3	3
(LJ) 1:19:12	4	2	2
(LK) 1:20:08-1:22:30	4	3	3
(LL) 1:20:44-1:25:19	4	3	3
(LM) 1:25:56-1:26:26	4	3	3
(LN) 1:26:27-1:26:59	4	2	2
(LO) 1:27:08-1:27:49	4	3	3
(LP) 1:32:38	3,4	3	3
(LQ) 1:33:10-1:33:28	4	3	3
(LR) 1:35:18-1:35:57	2,4	3	3
(LS) 1:36:40-1:36:49		3	3
(LT) 1:37:26-1:38:07	4	3	3
(LU) 1:38:23-1:38:31	2,4	3	3

However, jump scares were not significant within Site Lambda, only a few in-game sequences relied on jump scares for game progression. Majority of jump scare types seen were surreal scares, which was found within in-game sequences Jj, Jk, and Ji. Few of these surreal scares were partnered with another jump scare, (6) hidden attacks were also seen within in-game sequences Jk and Jl. The outlier within the data is sequence Jh due to the jump scare being noise.

The effectiveness remained consistent throughout Site Lambda with majority being very effective. The outlier within the data is sequence Jj being effective (see Table 3.1).

Table 3.1 Jump scare occurrence and effectiveness

In-game Timestamps	Jump scare Type	Effectiveness
(Jh) 1:19:12	5	3
(Ji) 1:32:38	9	3
(Jj) 1:33:10-1:33:28 9 (Jk) 1:36:40-		2
1:36:49 6,9		3
(Jl) 1:38:23-1:38:315	6,9	3

Site Delta

Site Delta did not consist of any jump scares, therefore data on effectiveness could not be recorded. However, the entirety of the game level did consist of atmospheric horror. Every in-game sequence consisted of visual atmospheric horror. The outlier within the data is Jo due to visual being paired with lack of sound atmospheric horror. Most of the atmospheric horror was very

prominent within Site Delta. Outliers within the data were sequences. Jn, Jt, J4, Jy, and Jw. Sequences coded as prominent were Jn, Jt and J4. Jy and Jw were coded as slightly prominent.

Like the observations made for how prominent atmospheric horror was within the sequences, effectiveness mirrored prominence. Most of the atmospheric horror was very effective within Site Delta. Outliers within the data were sequences. Jn, Jt, J4, Jy, and Jw. Sequences coded as effective were Jn, Jt and J4. Jy and Jw were coded as slightly effective (see Table 4).

Table 4 Similarities in Prominence and Effectiveness for Atmospheric Horror

Timestamp	Is there atmospheric horror present	Type of atmospheric horror	Prominence of atmospheric horror	Effectiveness of atmospheric horror
(Jm)1:55:30 1:56:15	1	4	3	3
(Jn)1:56:15-1:56:34	1	4	2	2
(Jo)1:58:45-1:59:12	1	3,4	3	3
(Jp)1:59:20-1:59:35	1	4	3	3
(Jq)1:59:42-1:59:47	1	4	3	3
(Jr)1:59:56-2:00:09	1	4	3	3
(Js)2:00:42-2:01:00	1	4	3	3
(Jt)2:02:55-2:03:07	1	4	2	2

(Ju)2:04:05	1	4	3	3
(Jv)2:04:42-2:05:10	1	4	1	1
(Jw)2:05:11-2:05:44	1	4	1	1
(Jx)2:06:52	1	4	3	3
(Jy)2:07:11-2:07:55	1	4	3	3
(Jz)2:09:58-2:10:39	1	4	3	3
(J1) 2:10:52-2:11:50	1	4	3	2
(J2) 2:12:00-2:12:31	1	4	3	3
(J3) 2:12:58-2:13;:32	1	4	3	3
(J4) 2:13:57-2:14:48	1	4	2	2
(J5):16:25-2:18:10	1	4	3	3

Site Theta/ Theta Lab

Site Theta/ Theta Labs was the longest game level within Soma, due to it being where the plot peaks. While there is atmospheric horror within the game's level, it is not as frequent as other levels.

When looking at Table 5, visual atmospheric horror is present within every in-game sequence that had atmospheric horror present. Like other data collected visual horror was accompanied by sound (TG, TL, and TS) and lack of sound (TH, TM, TQ, TR, TV, T1 and T2). When looking at effectiveness most of the in-game sequences were very effective. Some were coded effective (TE, TK, TO, TW, and TX).

Outliers within the data were TF, TJ, TN, and TP coded as slightly effective.

Table 5 Prominence and Effectiveness of Atmospheric Horror

Timestamp	Is there atmospheric horror present	Type of atmospheric horror	Prominence of atmospheric horror	Effectiveness of atmospheric horror
(TA) 2:18:37-2:19:20	1	4	3	3
(TB) 2:19:35-2:20:20	1	4	3	3
(TC) 2:20:55-2:22:04	1	4	3	3
(TD) 2:22:22-2:24;52	1	4	3	3
(TE) 2:28:28-2:29:31	1	4	1	2
(TF) 2:32:14	1	4	2	1
(TG) 2:33:06-2:33:18	1	2,4	3	3
(TH) 2:43:12	1	3,4	3	3
(TI) 2:45:16-2:45:18	1	4	3	3
(TJ) 2:46:04-2:47:36	1	4	3	1
(TK) 2:47:36-2:48:24	1	4	2	2
(TL) 2:53:47-2:54:30	1	2.4	3	3
(TM)) 2:55:34-2:57:31	1	3,4	3	3
(TN) 2:58:16-2:59:0	1	4	2	1
(TO) 2:59:40-3:00:04	1	4	2	2

(TP) 3:12:32-3:12:50	1	4	2	1
(TQ) 3:14:48-3:15:05	1	3,4	3	3
(TR) 3:16:16-3:17:00	1	3,4	3	3
(TS) 3:26:06-3:27:03	1	2,4	3	3
(TT) 3:27:57	1	4	3	3
(TU) 3:28:14-3:29:15	1	4	3	3
(TV) 3:30:28-3:31:51	1	3,4	3	3
(TW) 3:33:12	1	4	3	2
(TX) 3:33:21	1	4	3	2
(TY)3:34:00-3:35:32	1	4	3	3
(TZ)3:36:45-3:38:40	1	4	3	3
(T1) 3:38:40-3:41:42	1	3,4	3	3
(T2) 3:42:11-3:43:14	1	3,4	3	3
(T3) 3:45:05-3:57:59	1	4	3	3
(T4) 3:58:27-3:59:43	1	4	3	3

Jump scares were not frequent within Site Theta's game level as majority of the level had no jump scares, when looking at Table 5.1 the jump scares that were present are recorded. Where the jump scare's hide and seek and surreal scare are the present jump scares, the research noted it was the same monster throughout the level. When the sequences only had the hide and seek jump scare,

which was coded as slightly effective (J12, J13, J14, J15, and J17) as well as effective (J11 and J16). But when accompanied with the surreal scare (i.e. the monster) it was coded as very effective. Sequence J10 also had the other jump scare noise.

Table 5.1 Jump Scare occurrences and effectiveness

Timestamp	Is there Jump scares present	Type of jump scare	Effectiveness of jump scare present
(J6) 2:32:14	1	5,6	3
(J7) 2:45:16-2:45:18	1	9	3
(J9) 2:55:34-2:57:31	1	7,9	3
(J10) 3:28:14-3:29:15	1	5,7,9	3
(J11) 3:30:28-3:31:51	1	7	2
(J12) 3:32:13-3:32:54	1	7	1
(J13) 3:33:12	1	7	1
(J14) 3:33:21	1	7	1
(J15) 3:33:46	1	7	1
(J16) 3:34-3:35:32	1	7	2
(J17) 3:36:45-3:38:40	1	7	1
(J18) 3:38:40-3:41:42	1	7,9	3
(J19) 3:42:11-3:43:14	1	6,9	3
(J20) 3:45:05-3:57:59	1	6,9	3
(J21)3:58:27-3:59:43	1	8,9	3

Site Omicron

Site Omicron consists of frequent atmospheric horror. While a majority consisted of visual atmospheric horror, the outliers are sequences OL and OR which are coded as only have sound, as well as sequence OO that is coded to have lack of sound. A few sequences were partnered with visual atmospheric horror, OG and ON with lack of sound to where sequences OM, OU, OW, OX, OY and OZ had sound.

Sequences OI, OJ, OO, OR, and OV were shown to be prominent, while the other in-game sequences were shown to be very prominent in terms of atmospheric horror. While nearly all the in-game sequences were very effective, sequences OI and OO were effective and sequence OR was the only in-game sequence that was slightly effective (see Table 6).

Table 6 Prominence and Effectiveness of Atmospheric Horror

Timestamp	Is there atmospheric horror present	Type of atmospheric horror	Prominence of atmospheric horror	Effectiveness of atmospheric horror
(OA) 4:01:16-4:02:40	1	4	3	3
(OB) 4:02:43-4:03:37	1	4	3	3
(OC) 4:04:59-4:08:01	1	4	3	3
(OD) 4:08:01-4:09:24	1	4	3	3
(OE) 4:10:36-4:11:34	1	4	3	3
(OF) 4:13:40-4:15:28	1	4	3	3
(OG) 4:18:21-4:19:10	1	3,4	3	3

(OH) 4:19:19-4:209:13	1	4	3	3
(OI) 4:20:26-4:22:18	1	4	2	2
(OJ) 4:22:25-4:24:50	1	4	3	3
(OK) 4:26:04	1	4	3	3
(OL) 4:26:47-4:26:57	1	2	3	3
(OM) 4:27:40-4:31:42	1	2,4	3	3
(ON) 4:32:06-4:32:18	1	3,4	3	3
(OO) 4:32:31-4:33:27	1	3	2	2
(OP) 4:33:37	1	4	3	3
(OQ) 4:33:55-4:34:07	1	4	3	3
(OR) 4:35:28-4:36:42	1	2	2	1
(OS) 4:39:07-4:40:46	1	4	3	3
(OT) 4:40:52-4:41:23	1	4	3	3
(OU) 4:41:35-4:43:44	1	2,4	3	3
(OV) 4:44:33-4:46:26	1	4	2	3
(OW) 4:47:51-4:49:43	1	2,4	3	3
(OX) 4:49:44-4:50:56	1	2,4	3	3
(OY) 4:51:02-4:51:52	1	2,4	3	3
(OZ) 4:52:57-4:56:42	1	2,4	3	3
4:59:02-5:02:42	1	4	3	3
5:03:41-5:04:56	1	4	3	3

Table 6.1 Jump Scare occurrences and effectiveness

Timestamp	Is there Jump scares present	Type of jump scare	effectiveness of jump scare present
(J22) 4:19:19-4:209:13	1	6,9	3
(J23) 4:20:26-4:22:18	1	5	2
(J24) 4:32:06-4:32:18	1	6,9	3
(J25) 4:49:44-4:50:56	1	6	3
(J26) 4:51:02-4:51:52	1	8,9	3
(J27) 5:03:41-5:04:56	1	6,9	3

End of Tau Alpha

Within the analysis the most significant part of the game level Tau was the end, throughout the entire sequence atmospheric horror is present, as seen in Table 7. Every in-game sequence contains visual atmospheric horror except for sequence EB that has only sound atmospheric horror. Sequences EA and ED are partnered with lack of sound, whereas sequences EF and EH is partnered with lack of sound. Almost each in-game sequence is very effective except for sequence ED that was coded as effective.

Table 7 Prominence and Effectiveness of Atmospheric Horror

Timestamp	Is there atmospheric horror present	Type of atmospheric horror	Prominence of atmospheric horror	Effectiveness of atmospheric horror
(EA) 5:43:56-5:46:55	1	3,4	3	3
(EB) 5:47:42	1	2	3	3
(EC) 5:49:03-5:52:29	1	4	3	3
(ED) 5:53:20	1	3,4	2	2
(EE) 5:57:23-5:58:30	1	4	3	3
(EF) 5:58:39	1	2,4	3	3
(EG) 5:59:18-6:02:36	1	4	3	3
(EH) 6:03:10-6:04:33	1	2,4	3	3
(EI) 6:04:46-6:09:01	1	4	3	3

Jump scares only occur three times within the game level, two of those sequences (J29 and J30) experience a surreal scare. Sequence J30 is partnered with hide and seek.The outlier within the data is sequence J28 due to the jump scare present is the hidden attack. All sequences were observed to be very effective (see Table 7.1).

Table 7.1 Jump scares occurrences and effectiveness

Jump scares within the End of Tau Alpha

In-game Timestamps	Jump scare Present	Effectiveness
(J28) 5:58:39	6	3
(J29) 6:03:10-6:04:33	9	3
(J30)6:04:46-6:09:01	7,9	3

Site Phi/The Ark

Site Phi/ The Ark is the final in game level, no jump scares are present within the level therefore effectiveness could not be recorded. Table 8 shows the atmospheric horror that is present within Site Phi/ The Ark. Every sequence's atmospheric horror is visual. Sequence's PA and PC is noted to be prominent, whereas sequence PB and PD is very prominent. In terms of effectiveness, sequences PA and PC are slightly effective. Sequences PB and PD are very effective.

Table 8 Prominence and Effectiveness of Atmospheric Horror

Timestamp	Is there atmospheric horror present	Type of atmospheric horror	Prominence of atmospheric horror	Effectiveness of atmospheric horror
(PA) 6:14:32	1	4	2	1
(PB) 6:16:13-6:17:51	1	4	3	3
(PC) 6:17:56-6:20:28	1	4	2	1
(PD) 6:22:45-6:29:26	1	4	3	3

Present Central Cues (RQ2)

Another goal within this research was to identify the central cues being used within Soma. RQ2 asks "What central cues (e.g. character interactions, dialogue.

and plot developments) are present within the sequences analyzed in "Soma"?". The research notes that as the game progresses more central cues are apparent. The central cues being examined was lore, decision making and existential horror. The type of lore being identified was (2) audio recording, (3) notes, (4) "Data Buffers", (5) dialogue, (6) case files, (7) survey, and (8) emails.

Site Upsilon

Due to Site Upsilon being one of the very first game levels, there is significant lore seen. With it being the beginning of the game there is a mix of the type of lore present, so that the player can learn the different ways to collect lore. In-game sequences A5, A6, A7, A8, A11, A12, A13, A18 and A22 consist of (3) notes.

Sequences A23, A24, A25 and A26 consist of (2) audio recordings. Sequences A2, A9, A10, A14 and A28 consist of (5) dialogue. Sequences A3, A19, A20 and A27 consist of emails. The data shows that notes, audio recordings and emails were the most reoccurring types of lore within Site Upsilon's game level. Sequences A1 and A4 consists of (4) data buffers. The outlier within the data is sequence A21 which consists of case files, as it is the only one within the game level. There is some lore that ties in together, it can be noted that sequences A15. and A17 consist of both "Data Buffers" and dialogue.

The outlier within the data is A16, which consists of dialogue and case files. Due to Site Upsilon being beginning of the game the lore's effectiveness wavered between effective and very effective. Outliers within the data are sequences A1 and A10, as the. Sequences were coded as slightly effective.

Table 1.7 Types of lore and its effectiveness

Timestamp	Is lore present	Type of lore	effectiveness of lore
(A1) 17:07-17:34	1	4	1
(A2) 18:4 8-19;20	1	5	2
(A3) 25 mins 8 sec	1	8	2
(A4) 26:26-27:00	1	4	2
(A5) 27:11--27:22	1	3	2
(A6) 27:24-27:29	1	3	3
(A7) 27:34-27:42	1	3	3
(A8) 29:54-30:00	1	3	3
(A9) 30:04-30:41	1	5	2
(A10) 31:36-32:38	1	5	1
(A11) 35:20-35:29	1	3	2
(A12) 35:38-35:47	1	3	2
(A13) 36:15:00	1	3	3
(A14) 36:50-40:19*	1	5	3
(A15) 40:36-41:03	1	4,5	2

(A16) 41:22-41:33*	1	5,6	3
(A17) 41:34--42:15	1	4,5	3
(A18) 42:43:00	1	3	3
(A19) 44:10-44:17	1	8	3
(A20) 44:40-44:50	1	8	3
(A21) 45:39:00	1	6	2
(A22) 46:20-46:38	1	3	2
(A23) 48:31-48:52	1	2	2
(A24) 48:54-49:18	1	2	2
(A25) 49:22-49:48	1	2	2
(A26) 49:49-50:15	1	2	3
(A27) 50:52-51:09	1	8	3
(A28) 52:27-53:38	1	5	3

Decision making is another cue that was analyzed within Soma, in Site Upsilon, most of the data did not have decision making. However, within Table 1.8 shows the presence of decision making. Sequences DM1 and DM3's decision making is (3) forced. The outlier in the data is sequence DM2's decision making as it is (4) optional. However, all in- game sequences that involved decision making within Site Upsilon was observed as very effective.

Table 1.8 Decision Making

Forced and Optional decision-making frequencies

In-game Timestamps	Forced Or Optional	Effectiveness
(DM1) 30:04-30:41	3	3
(DM2) 36:50-40:19*	4	3
(DM3) 46:20-46:38	3	3

Existential horror was also looked for when analyzing Soma, (e.g. conversations with robots, fear/questioning of human consciousness). As it is early within the game not a lot of existential horror is apparent. Sequence EH1, EH2, EH6 and EH7 is observed to be effective. Sequences EH3, EH5 and EH8 was observed to be very effective. The Outlier within the data is EH4 as it was observed to be slightly effective (see Table 1.9).

Table 1.9 Existential Horror presence

Timestamp	Is there existential horror present	Effectiveness of existential horror
(EH1) 18:48-19;20	1	2
(EH2) 28:02-28:41	1	2
(EH3) 30:04-30:41	1	3
(EH4) 35:17-35:19	1	1
(EH5) 36:50-40:19*	1	3
(EH6) 41:22-41:33*	1	2

(EH7) 45:39:00	1	2
(EH8) 52:04:00	1	3

Site Lambda

When analyzing Site Lambda, lore was prominent throughout the game level. Much of the lore were case files, which was seen in sequences A31, A32, A34, A39, A40, A41 and A42. Another item found was dialogue, which was seen in sequences A33, A35, A36, A37, and. A44. Data Buffers only occurred twice, which was within sequences A29 and A30. An outlier within the data was sequence A43 due to the sequence being the first occurrence where a (7) survey is seen.

There were two sequences that had two things of lore within them, sequence A45 and A46. A45 had both dialogue and emails, whereas A46 had dialogue as well as a survey.Effectiveness varied, with most of the lore found was coded to be very effective, Sequences A29, A31, A35, A39, A40, A42, A44, and A46 were coded to be effective (see Table 3.2).

Table 3.2 Types of lore and its effectiveness

Timestamp	Is lore present	Type of lore	effectiveness of lore
(A29) 57:08-57:45	1	4	2
(A30) 1:02:06-1:02:46	1	4	3
(A31) 1:03:20	1	6	2
(A32) 1:03:26-1:04:32	1	6	3

(A33) 1:05:55-1:06:53	1	5	3
(A34) 1:09:12-1:10;01	1	6	3
(A35) 1:11:10-1:11:57	1	5	2
(A36) 1:20:08-1:22:30	1	5	3
A37) 1:20:44-1:25:19	1	5	3
(A39) 1:25:56-1:26:26	1	6	2
(A40) 1:26:27-1:26:59	1	6	2
(A41) 1:27:08-1:27:49	1	6	3
(A42) 1:27:57-1:28:16	1	6	2
(A43) 1:28:16-1:29:19	1	7	3
(A44) 1:30-1:31:34	1	5	2
(A45) 1:32:45-1:33:0	1	5,8	3
(A46) 1:35:18-1:35:57	1	5,7	2

Decision making only occurs twice within Site Lambda, however both sequences were seen to be very effective. However, each sequence differed in which type of decision making was made, DM4 was forced and DM5 was optional (see Table 3.3).

Table 3.3 Decision Making

Decision making within different in-game sequences

In-game Timestamps	Forced Or Optional	Effectiveness
(DM4) 1:05:55-1:06:5.	3	3
(DM5) 1:28:16-1:29:19.	4	3

Existential horror was also not prominent within Site Lambda as it can be seen in Table 3.4, only sequences EH9, EH10, EH11, EH12, and EH13 had existential horror present. Sequences. EH11 and EH13 were coded to be very effective. Sequences EH9, EH10, and EH12 is seen as effective.

Table 3.4 Existential Horror in Game

Timestamp	Is there existential horror present	Effectiveness of existential horror
(EH9) 1:05:55-1:06:53	1	2
(EH10) 1:20:08-1:22:30	1	2
(EH11) 1:20:44-1:25:19	1	3
(EH12) 1:27:08-1:27:49	1	2
(EH13) 1:28:16-1:29:19	1	3

Site Delta

Site Delta consisted of many central cues, specifically with the amount of lore present (see Table 4.1). The most common lore found was dialogue, dialogue was in sequences A56,A58, A59, A60 and A6. Sequences A49, A50 and A51 consisted of notes. Sequences A47 and A57 consist of Data Buffers. Sequences A52 and A55 consist of emails. The outlier is A48 as it is the only sequence that has case files.

Effectiveness within these lore sequences lied mostly in being very effective. However, sequence A47, A48, and A55 is coded as effective. The outlier is sequence A58, as it was the only lore rated as slightly effective.

Table 4.1 Types of lore and its effectiveness

Timestamp	Is lore present	Type of lore	effectiveness of lore
(A47) 1:55:30-1:56:15	1	4	2
(A48) 1:56:15-1:56:34	1	6	2
(A49) 1:59:20-1:59:35	1	3	3
(A50) 1:59:42-1:59:47	1	3	3
(A51) 1:59:56-2:00:09	1	3	3
(A52) 2:02:55-2:03:07	1	8	3
(A53) 2:04:42-	1	2	

2:05:10			3
(A54) 2:05:11-2:05:44	1	2	3
(A55) 2:06:52	1	8	2
(A56) 2:07:11-2:07:55	1	5	3
(A57) 2:09:58-2:10:39	1	4	3
(A58) 2:10:52-2:11:50	1	5	1
(A59) 2:12:00-2:12:31	1	5	3
(A60) 2:13:57-2:14:48	1	5	3
(A61) 2:16:25-2:18:10	1	5	3

Decision making only occurs once within Site Delta (see Table 4.2).

Sequence DM6 was recorded to be forced, as well as very effective.

Table 4.2 Decision Making

Decision making within different in-game sequences

In-game Timestamps	Forced Or Optional	Effectiveness
(DM6) 2:12:00-2:12:31	3	3

Existential horror is present within Site Delta's level (see Table 4.3). Effectiveness of the existential horror was nearly all very effective, however sequences EH15, EH16 and. EH17 were only effective.

Table 4.3 Existential Horror in Game

Timestamp	Is there existential horror present	Effectiveness of existential horror
(EH14) 1:59:20-1:59:35	1	3
(EH15) 1:59:56-2:00:09	1	2
(EH16) 2:00:42-2:01:00	1	2
(EH17) 2:07:11-2:07:55	1	2
(EH18) 2:10:52-2:11:50	1	3
(EH19) 2:12:00-2:12:31	1	3
(EH20) 2:12:58-2:13:32	1	3
(EH21) 2:13:57-2:14:48	1	3
(EH22) 2:16:25-2:18:10	1	3

Site Theta/ Theta Labs

As stated in within RQ1's section, Site Theta is the longest game level, as it is the peak of the game. Due to that lore is actively present throughout. 20 sequences consisted of dialogue. Sequences A62, A63, A72, A86, A94, A95 and A97 consisted of data buffers. Sequences A67, A69, A73, A91 and A96 consist of case files. Sequences A68, A84, A93, A98 and A99 consist of notes. Sequences A74, A75, A76, and A101 consist of (2) audio recordings. Two sequences (A85 and A100) consisted of emails. An outlier is A92 as is the only sequence that consists of a survey.

Sequences A73 and A93, while the sequences consisted of dialogue, it is noted that the sequences. Are accompanied with another jump scare. Sequence A73 with case files and sequence A93 with notes. It can be noted that nearly all the in-game sequence's lore is noted to be very effective. However, sequences A62, A64, A70, A75, A85, A86, and A98 were noted to be effective. (see Table. 5.2)

Table 5.2 Types of lore and its effectiveness

Timestamp	Is lore present	Type of lore	effectiveness of lore
(A62) 2:18:37-2:19:20	1	4	2
(A63) 2:19:35-2:20:20	1	4	3
(A64) 2:20:55-2:22:04	1	5	2
(A65) 2:22:22-2:24;52	1	5	3
(A66) 2:28:28-2:29:31	1	5	3
(A67) 2:36:35-2:37;08	1	6	3
(A68) 2:39:06	1	3	3
(A69) 2:39:22-2:41:10	1	6	3
(A70) 2:41:49	1	6	2
A71) 2:46:04-2:47:36	1	5	3
(A72) 2:47:36-2:48:24	1	4	3
(A73) 2:49:15-2:50:04	1	6,5	3
(A74) 2:50:04-2:50:28	1	2	3
(A75) 2:50:28-2:50:58	1	2	2

(A76) 2:50:58-2:52:06	1	2	3
(A77) 2:52:18-2:52:42	1	5	3
(A78) 2:53:18-2:53:35	1	5	3
(A79) 2:58:16-2:59:0	1	5	3
(A80) 2:59:40-3:00:04	1	5	3
(A81) 3:01:59-3:02:41*	1	5	3
(A82) 3:02:45-3:04:49*	1	5	3
(A83) 3:05:59-3:06:41*	1	5	3
(A84) 3:07:25	1	3	3
(A85) 3:08:10-3:08:26	1	8	2
(A86) 3:08:56-3:09:13	1	4	2
(A87) 3:09:15-3:09:57	1	5	3
(A88) 3:10:34-3:11:30*	1	5	3
(A89) 3:11:35-3:12:05	1	5	3
(A90) 3:12:32-3:12:50	1	5	3
(A91) 3:20:50	1	6	3
(A92) 3:21:00-3:21:44	1	7	3
(A93) 3:22:16	1	3,5	3
(A94) 3:26:06-3:27:03	1	4	3
(A95) 3:28:14-3:29:15	1	4	3
(A96) 3:30:28-3:31:51	1	6	3
(A97) 3:32:13-3:32:54	1	4	3
(A98) 3:33:12	1	3	2
(A99) 3:33:21	1	3	3
(A100) 3:33:46	1	8	3
(A101) 3:34-3:35:32	1	2	3
(A102) 3:36:45-3:38:40	1	5	3
(A103) 3:44:10-3:4426	1	5	3
(A104) 3:58:27-3:59:43	1	5	3

There is not a lot of decision-making present within Site Theta, Table 5.2 shows the sequences that did include decision making. Sequences DM6, DM7, SM8, DM9, DM11 and DM12 is noted to be optional decision making. The outlier within the data is sequence DM10 as it was noted to be forced. However, the effectiveness of each decision is very effective.

Table 5.3 Decision Making

Timestamp	Is decision making present	Forced or optional	Effectiveness of decision
(DM6) 2:52:12	1	4	3
(DM7) 3:01:59-3:02:41*	1	4	3
(DM8) 3:02:45-3:04:49*	1	4	3
DM9) 3:05:59-3:06:41*	1	4	3
(DM10) 3:10:34-3:11:30*	1	3	3
DM11) 3:11:35-3:12:05	1	4	3
(DM12) 3:21:00-3:21:44	1	4	3

Existential horror is present within Site Theta, it is important to note that sequences EH37, EH38, EH39 and EH41 experienced similar existential horror, as the in- game sequences built off each other. These sequences also were coded to be very effective. It was found that 18 of the in-game sequences existential horror was very effective. Sequences EH25, EH30, EH36, EH40, EH42, and EH47 were effective. There were three sequences (EH27, EH31 and EH48) that were seen as slightly effective (see Table 5.3).

Table 5.4 Existential Horror in Game

Timestamp	Is there existential horror present	Effectiveness of existential horror
(EH23) 2:19:35-2:20:20	1	3
(EH24) 2:22:22-2:24;52	1	3
(EH25) 2:28:28-2:29:31	1	2
(EH26) 2:33:06-2:33:18	1	3
(EH27) 2:36:35-2:37;08	1	1
(EH28) 2:39:22-2:41:10	1	3
(EH29) 2:49:15-2:50:04	1	3
(EH30) 2:50:04-2:50:28	1	2
(EH31) 2:50:28-2:50:58	1	1
(EH32) 2:50:58-2:52:06	1	3
(EH33) 2:52:12	1	3
(EH34) 2:52:18-2:52:42	1	3
(EH35) 2:58:16-2:59:0	1	3

(EH36) 2:59:40-3:00:04	1	2
(EH37) 3:01:59-3:02:41*	1	3
(EH38) 3:02:45-3:04:49*	1	3
(EH39) 3:05:59-3:06:41*	1	3
(EH40) 3:09:15-3:09:57	1	2
(EH41) 3:10:34-3:11:30*	1	3
(EH42) 3:11:35-3:12:05	1	2
(EH43) 3:12:32-3:12:50	1	3
(EH44) 3:14:48-3:15:05	1	3
(EH45) 3:21:00-3:21:44	1	3
(EH46) 3:23:11-3:25:14	1	3
(EH47) 3:28:14-3:29:15	1	2
(EH48) 3:33:46	1	1
(EH49) 3:44:10-3:4426	1	3

Site Omicron

There is lore present within Site Omicron, (see Table 6.2). 11 in-game sequences lore is dialogue. Sequences A114, A116, A118, and A123 present lore consists of case files. Sequences A109, A120, and A122 present lore consists of audio recordings. The outlier within the data is sequences A115, as the lore present was emails. Nearly all lore that was present was noted to be very effective. Sequences A108 and A114 lore was noted as effective.

Table 6.2 Types of lore and its effectiveness

Timestamp	Is lore present	Type of lore	effectiveness of lore
(A105) 4:01:16-4:02:40	1	5	3
(A106) 4:02:43-4:03:37	1	5	3
(A107) 4:04:59-4:08:01	1	5	3
(A108) 4:08:01-4:09:24	1	3	2
(A109) 4:10:36-4:11:34	1	2	3
(A110) 4:13:40-4:15:28	1	5	3
(A112) 4:18:21-4:19:10	1	5	3
(A113) 4:20:26-4:22:18	1	5	3
(A114) 4:22:25-4:24:50	1	6	2
(A115) 4:26:47-4:26:57	1	8	3
(A116) 4:27:40-4:31:42	1	6	3
(A117) 4:32:31-4:33:27	1	5	3
(A118) 4:33:37	1	6	3
(A119) 4:35:28-4:36:42	1	5	3
(A120) 4:39:07-4:40:46	1	2	3
(A121) 4:40:52-4:41:23	1	3	3

(A122) 4:44:33-4:46:26	1	2	3
(A123) 4:46:48-4:47:08	1	6	3
(A124) 4:52:57-4:56:42	1	5	3
(A125) 4:59:02-5:02:42	1	5	3
(A126) 5:03:41-5:04:56	1	5	3

Decision making only occurs once within Site Omicron. It can be seen in Table 6.3 the sequence DM13 was an optional decision. However, it was noted to be very effective.

Table 6.3 Decision Making

Decision making within different in-game sequences

In-game Timestamps	Forced Or Optional	Effectiveness
(DM13) 4:52:57-4:56:42	4	3

Existential horror is actively present within site Omicron, 9 in-game sequences, existential horror were extremely effective. 12 in-game sequences existential horror were noted to be effective. The outlier within the data is sequence EH55 as the existential horror was noted to only be slightly effective (see Table 6.4).

Table 6.4 Existential Horror in Game

Timestamp	Is there existential horror present	Effectiveness of existential horror
(EH50) 4:02:43-4:03:37	1	3
(EH51) 4:04:59-4:08:01	1	3
(EH52) 4:10:36-4:11:34	1	2
(EH53) 4:13:40-4:15:28	1	3
(EH54) 4:18:21-4:19:10	1	2
(EH55) 4:19:19-4:209:13	1	1
(EH56) 4:20:26-4:22:18	1	2
(EH57) 4:22:25-4:24:50	1	3
(EH58) 4:26:04	1	2
(EH59) 4:26:47-4:26:57	1	2
(EH60) 4:27:40-4:31:42	1	2
(EH61) 4:33:37	1	2
(EH62) 4:33:55-4:34:07	1	3
(EH63) 4:35:28-4:36:42	1	2
(EH64) 4:40:52-4:41:23	1	2
(EH65) 4:41:35-4:43:44	1	2
(EH66) 4:44:33-4:46:26	1	2
(EH67) 4:47:51-4:49:43	1	3
(EH68) 4:49:44-4:50:56	1	3
(EH69) 4:52:57-4:56:42	1	3
(EH70) 4:59:02-5:02:42	1	3
(EH71) 5:03:41-5:04:56	1	2

End of Tau Alpha

The end of Tau Alpha consisted of much lore; a majority of the lore present is dialogue. The only two sequences that did not consist of dialogue, were A128 and A130.

Sequences A128 and A130 present lore were case files. 6 of the in-game sequences present lore was very effective. The outliers were sequences A128 and A130 as A128 was noted to be slightly effective and A130 was noted to be effective (see Table 7.2).

Table 7.2 Types of lore and its effectiveness

Timestamp	Is lore present	Type of lore	effectiveness of lore
(A127) 5:43:56-5:46:55	1	5	3
(A128) 5:47:42	1	6	1
(A129) 5:49:03-5:52:29	1	5	3
(A130) 5:53:20	1	6	2
(A131) 5:57:23-5:58:30	1	5	3
(A132) 5:59:18-6:02:36	1	5	3
(A133) 6:03:10-6:04:33	1	5	3
(A134) 6:04:46-6:09:01	1	5	3

Decision making was not prominent within Tau Alpha; however, two sequences did possess decision making (see Table 7.3). While sequence

DM14 was optional decision making it was noted to be very effective. Similarly sequence DM15 was forced decision making and was noted to be very effective.

Table 7.3 Decision Making

Decision making within different in-game sequences

In-game Timestamps	Forced Or Optional	Effectiveness
(DM14) 5:49:03-5:52:29.	4	3
(DM15) 6:03:10-6:04:33.	3	3

Existential horror is present Tau Alpha, nearly every in-game sequence where existential horror is present is noted to be effective. Whereas the last in-game sequence where existential horror is present within Tau Alpha (EH76) was noted to be very effective (see Table 7.4).

Table 7.4 Existential Horror in Game

Timestamp	Is there existential horror present	Effectiveness of existential horror
(EH72) 5:43:56-5:46:55	1	2
EH73) 5:49:03-5:52:29	1	2
(EH74) 5:59:18-6:02:36	1	2
(EH75) 6:03:10-6:04:33	1	2
(EH76) 6:04:46-6:09:01	1	3

Site Phi/The Ark

As discussed in RQ1, Site Phi/The Ark is the last in game level, therefore lore is present throughout the entirety of the level. Primarily dialogue is the in-game sequence lore that is present. However, in sequences A136 and A139 the lore differs. A136 consists of notes and A137 consists of the final in-game survey. Nearly every lorepresent is noted to. Be very effective. The outlier within the data is sequence A136 as it was noted to be slightly effective. (see Table 8.1).

Table 8.1 Types of lore and its effectiveness

Timestamp	Is lore present	Type of lore	effectiveness of lore
(A135) 6:10:07-6:12:36	1	5	3
(A136) 6:14:32	1	3	1
(A137) 6:16:13-6:17:51	1	5	3
(A137) 6:17:56-6:20:28	1	5	3
(A138) 6:22:45-6:29:26	1	5	3
(A139) 6:32:27	1	7	3
(A140) 6:35:39-6:37:38	1	5	3

Decision making was only present one time within the game level (see Table 8.2). Sequence DM16 was noted to be optional decision making and was also noted to be very effective.

Table 8.2 Decision Making

Decision making within different in-game sequences

In-game Timestamps	Forced Or Optional	Effectiveness
(DM16) 6:32:27.	4	3

Although, Site Phi/ The Ark is the final game level, existential horror is still prominent (see Table 8.3). Nearly every in-game sequence that had existential horror present was noted to be very effective. The outlier within the data is sequence EH80, as it was noted to be effective.

Table 8.3 Existential Horror in Game

Timestamp	Is there existential horror present	Effectiveness of existential horror
(EH77) 6:10:07-6:12:36	1	3
(EH78) 6:22:45-6:29:26	1	3
(EH79) 6:32:27	1	3
(EH80) 6:35:39-6:37:38	1	2

Lore Establishment (RQ3)

One of the final goals the research sought to find was what elements serve to establish the games lore. RQ3 ask “what elements or textual features within the sequences analyzed in "Soma" serve to establish and expand the game's lore. The research notes that given the data within each different game level central cues play a part in lore expansion.

Dialogue was the leading factor in effective lore development, this would be dialogue with other characters, as well as oneself. Data Buffers also plays a fundamental role within lore expansion as, it allowed the researcher to hear previous conversations that were had amongst NPC's. It was found that typically anytime something was found there would be a data buffer station. The only time data buffers were not present was during Site Omicron, End of Tau Alpha, and Site Phi/ The Ark. However, it can be seen within RQ2's tables that when Data buffers were not present dialogue was.

Central cues that were not as present within this study, that did not affect lore expansion as much were audio files. Out of the entire game being analyzed the researcher only encountered audio files 8 times, and while the researcher found them to be interesting, they believe they provided more for the game's atmosphere rather than useful information for lore building. Although few, something that the research noted to be impactful to the expansion of lore was the in-game surveys (see appendix E for an in game screen shot of survey). Given the nature of the questions asked, the research found that it immersed the player into the game, which allows them to focus on the story the game is trying to convey.

When looking at the element of decision making, even if forced due to the linear style of the game, the research notes every decision made throughout each level was either effective or very effective. Many of the decisions made the researcher question human consciousness and morality, which is the goal of the game.

Which is due to the game giving enough back story and building up the story, so when it is time to decide, it is not meant to be easy. An example of decision making can be seen specifically within Site Upsilon, the player speaks with a robot who believes they are human

(time stamp 36:50-40:19), as the robot asks for help due to being disillusioned and in pain, you then find the real human's lifeless body that the robots consciousness belongs to (time stamp 41:22-41:33). For the game to progress the player must turn off the power thus killing the robot, and never being able to talk to him again throughout the game. The researcher notes that it made them feel uneasy and a sense of sadness due to the human quality of the robot.

Peripheral cues also played a significant role within lore establishment, as noted throughout RQ1, atmospheric horror was prominent throughout the levels, specifically visual. The research notes that when there was high prominence of atmospheric horror there was high effectiveness as well. Atmospheric horror allowed the researcher to be immersed within the world Soma was attempting to create, thus driving the researcher wanting to learn more about the world.

This was done with dark visuals, as well as the feeling of abandoness the game portrayed through lighting, color, and visual effects. The researcher notes that while the sounds and lack of sounds were interesting, they were more so used as embellishment for the visual atmospheric horror.

Jump scares also played a part within lore expansion, specifically through surreal scares (I.e. monsters). Each level a different monster is encountered, and each monster has a background, that if the player paid attention to the different lore elements would know before interacting with said monsters. The researcher notes that within Site Theta, the monster known as the proxy monster drives the whole level.

Not only does the monster disengage your ability to data buffer by the gruesome manor of beheaded NPCs, but the proxy monster also continuously follows you and even gets mentioned

within case files. Through the lore, you learn that many of these monsters are former members of the different crews you learn about in game.

Lastly, the researcher notes that one of the most effective monsters within lore expansion is seen in Site Omicron. Simply referred to as Ross, this monster is a former head scientist helping head the project “The. Ark”, throughout the level Ross speaks with your character through jump scares and crypted messages, in hopes to tell your in-game character the dangers of the WAU (in-game program).

To sum up, the researcher argues that most elements analyzed within Soma all play a significant role in lore building. The researcher claims that due to the linear nature of the game, nearly every element found is needed to get the full impact of Soma, as well as every piece of the lore so there are no plot holes.

Discussion

The purpose of this study was to set foreground for the researcher's future dissertation, that would involve cognition within horror video games and how that affects the persuasion process. By doing a content analysis the researcher hoped to show where peripheral cues and central cues lied within Soma. As well as show how, Soma relies more on lore rather than jump scares to convey the game's message. The reason the studies concept wanted to be shown is to add validity to the world of video games specifically in the lens of horror and
show how that genre drives persuasion.

While it was noted in the literature review section that there had been many studies done within ELM theory, there had been no research within ELM and Soma. The game was significant to this study due to how rich in narrative it is as well as how impactful the story line is within the game. It is also important to note that the researcher did not play the game but watched a cinematic playthrough of the game.

The analysis supports the theory that Soma drives player decision making without jump scares. Lore is present throughout each game level, often effective or very effective. However, lore also lies within jump scares, specifically surreal scares, which are seen throughout each level due to the monsters and their back stories.

Soma puts its story at the forefront, allowing players to immerse themselves within the game and feel the main character's feelings. The deeper each level goes, the more lore is gathered, and the question of human consciousness is brought up.

The research found that decision making was not as apparent as initially believed, but when it was, it was always very effective even if forced. Lore is seen throughout every game

segment, driving linear gameplay and immersing gamers within the world Soma aims to create. Atmospheric horror in Soma is typically accompanied by sound or lack of sound, adding to the game's immersion and feeling.

The higher the prominence of atmospheric horror, the higher the effect on the researcher watching. As the game progressed the researcher noticed that existential horror became more present within the game. The researcher believes this is due to the amount of lore being gathered and the question of human consciousness being brought up.

Lore, Decision Making & Existential Horror (Central Cues)

The research hypothesized that lore would be a crucial factor when determining if horror video games can help in the decision-making process beyond the aspect of jump scares. As the results show lore is significant throughout the entire game sequences.

This is important because lore, directly correlates with the central route of thinking due to the fact it is very content heavy and requires high elaboration. It can be seen throughout the game that dialogue is heavily relied on. When viewing the game, the primary dialogue relies between the main character Simon and his AI counterpart Catherine.

Through the dialogue a relationship is being built as the lore expands which the researcher argues that the connection attaches potential players to the game storyline more thus guiding the decisions to be more favorable towards the bigger message within the game. When the researcher was watching the game sequences it was imperative to take time to listen to the dialogue as the dialogue guided the linear story being told, this concept also occurred within other areas of lore such as data buffers.

When looking into the data buffers the research noticed that anytime something significant would happen within the game that a potential player should know a data buffer

would appear, it is not required to go to that data buffer however the research noted within the video that the data buffer would give background on things that happened within the game before it is played (i.e. off-screen plot). Within Soma there are many off screen characters that you hear of, and you see through existential horror, but you don't have much context on them without the lore behind their character.

When looking at the example of the robot within Site Upsilon, that has very human like qualities as well as is convinced they are a human named Carl, the player will go off to find him help as well as find the code needed for the game.

The player will then come across Carl's lifeless body and a data buffer will come up and give context as to what happened to Carl. In doing that there is a direct correlation with the in-game decision that is made shortly after the sequence.

The player then must then power the building down so that they may continue through the rest of the map, this in turn will kill the robot and the player will no longer be able to power on the robot nor help the robot. As the researcher stated previously this is a decision that is forced, what made the sequence so effective is the player got this context and felt empathy for this robot especially when it is found out that Carl’s consciousness was in this robot. Not only does it show the significance of existential horror but it shows how through lore and through world building it makes the decisions tougher even when decisions must be made.

A significant similarity to this concept comes even later within the end of Tau Alpha. This game level is one of the last ones that has objectives for the player to complete to finish the game. The main character comes across the last living human on earth known as Sarah. The player then gets to look around Sarah’s room as she's speaking to them about her life and that builds a small character to be someone of significance.

Simon goes through this inner turmoil that ideally through this point of the game the researcher notes that the player has been through this turmoil with him due to the lore collected and the different obstacles faced. One of the final optional decisions occur within the game and the player can choose to end Sarah's life for her.

Naturally the heaviness of this subject may affect a player's decision when they make this. But if it is chosen to do so the player then sits with Sarah, and she describes to what she wishes her life would have been like and how she has no regrets and she hopes that the various human consciousnesses on the ark make it to the stars.

The researcher notes that this adds a big significance within the decision making as in that short amount of time the player grows an attachment to Sarah because an attachment has been grown to Simon. It can then be argued that due to this the decision making activates once again central cues because of the nature of content and the player actively using their brain to make conscious decisions that is affecting a life.

Something interesting the researcher saw was that existential horror and lore go hand in hand. The researcher tied both concepts within central cues but did not hypothesize that they directly affected each other. It could be noted that throughout the game as the player goes on as Simon, he will often comment on what is it to be human and if he's real.

This is significant due to the fear of human consciousness as discussed within the literature review, oftentimes people will face anxiety when thinking about the true meaning of life and what the true reasoning of being on Earth is.

As expected, Soma directly hits this idea and uses it throughout the game thus being very effective. The researcher notes that this fear would not be as effective if it was not for the expansion of the lore. The researcher argues that Soma does not directly tell the players that this

will be a game that delves into reality and what that even means, that is a concept that is figured out later through world building within the game.

This can be seen through Site Omicron; the research notes that within this game level not only does the player find out that Simon is in one of Catharine's dead colleagues, but that Simon's consciousness must be transferred to a different suit to complete the level. After successfully transferring Simon's consciousness into another suit the player finds out that Simon's other suit is another version of Simon.

The research notes that in transferring the consciousness another consciousness was made. The only decision that is made within Site Omicron is an optional decision which is whether the player will kill that other Simon's or allow him to live. As the research notes this is a very effective decision due to the player having to essentially end another Simon's life, if the player chooses to do so. Tying this back to the idea that existential horror thrives through lore building this is evident due to the fact the player sees that Simon is Simon, however physically Simon is someone else and robot parts, hence furthering the question "who am I?" The researcher argues that this fear is then enhanced due to consciousness being transferred and created simultaneously. This may have the player wonder who the real Simon is.

Something the researcher did not expect was for lore and jump scares to relate together which was an interesting find throughout this study. The research notes that while the surreal scares (i.e. monsters) are the driving factors within surreal scares the researcher did not expect the monsters to have such in-depth back stories.

While this concept is seen throughout the game the researcher states it is most effective in Site Omicron, when you encounter Dr. Ross for the first time. Throughout lore within the game

the research notes that you will discover more on Ross as the game progresses as he is one of the lead scientists.

The researcher argues this is the most impactful because towards the end of the game you are then faced with a surreal scare, who is trying to communicate with the player the dangers of the Wau. Ross eventually does try to kill Simon which in turn goes into a chase sequence where the player ultimately will defeat Ross.

Although the research did not hypothesize that lore and jump scares would go hand in hand due to jump scares being peripheral cues. The researcher does argue it is important for the players to understand the importance that lore adds to the monsters specifically.

Peripheral Cues

The research notes that peripheral cues are significant within horror games as it is hypothesized that there will be peripheral cues throughout Soma. Something the researcher found interesting was that atmospheric horror was primarily visual throughout Soma rather than relying so much on sound or lack thereof. The researcher argues that if atmosphere was accompanied with sound or lack of sound, it was just embellishment.

This can be seen throughout the entirety of Soma within the world around the player. Through this research it can be shown that peripheral cues are very significant when building a game specifically of the horror variety. However, this still leaves the researcher with the question how effective peripheral cues within decision is making in terms of a horror game. The research notes that this concept cannot necessarily be measured through a content analysis however once again this analysis builds up the case to conduct this study in the future.

Another peripheral cue essential for the game were jump scares.

However, the research notes that the jump scares did not drive the game as it can be seen throughout the analysis that jump scares were rarely present and if they were it was primarily through surreal scares. Something surprising was that rarely any of the other jump scares were seen, when they were they were typically always accompanied with the surreal scare.

Limitations and Future Research

The findings within this study provides significant foreground for horror video games to be a foundation when it comes to the persuasion process and decision making. However, this study did have limitations.

One limitation was that the only coding being done was through the lens of the researcher therefore it can be argued that some information may be bias as it is limited to one person. To combat this the researcher, suggest in future research having multiple coders, as well as the justification that this content analysis is being used as groundwork for a study involving multiple subjects in the future. Another limitation was that the researcher did not analyze the entire game Soma rather than most parts within Soma, it is suggested that in the future the entire game is analyzed.

Something the researcher wishes would have been done is placing surreal scares within central cues rather than peripheral, this is due to the fact while the surreal scares may be visually unappealing and arguably scary, they do provide a lot of rich lore and world building within Soma.

Not necessarily a limitation, but something to note is that when using Soma and it being a linear game, whoever plays the game must find the lore to understand the game. The researcher notes that if someone attempted to speed run this game the results may differ. In the future maybe a game that

has multiple games or is non-linear would be beneficial to do a similar study on to see the differences within peripheral and central cues.

Another limitation within this study was that the researcher did not gather data through their own playthrough rather than a non-commentary cinematic playthrough on YouTube. The researcher hopes that in the future when building studies around this idea that data can be collected through physical gameplay.

Conclusion

The thesis set to see how through the lens of ELM theory, thoughtful decision making can occur within horror video games. This was done through a content analysis, the findings within the game indicate that central cues such as lore and existential horror is prominent throughout Soma. While expected it is to be noted as well that peripheral cues will always play a big role in the world of horror, this is especially seen within Soma due to the atmospheric horror present throughout the entire game. This leads to the question how central and peripheral cues correlate with one another. This study also helped show how important lore truly is within video games in general but specifically horror games. This research helps communication scholars due to it leading us to expand our horizons into the realm of gaming as gaming is such a prominent figure within the world we see today. With the world ever changing it is imperative that communication scholars begin to study these games and see how they can help us build better communicators. Future studies can potentially involve other horror games as well as other theories partnered with these games to determine the communication process.

Specifically in terms of persuasion, the researcher fully believes that they hold a place in effective decision making. Not only was this shown within the content analysis, but for future studies that elaborate how players make their decisions based off narrative within a horror games. This will allow for interesting groundwork and development within not only ELM theory but other persuasive theories.

The road to studying horror games and its relation to persuasive theories and communication is one not yet explored. However, this researcher hopes that through this content analysis it will show the importance of that research as it attempts to lay foundation for the future of horror gaming and communication. The researcher believes the next step in this is putting together a

study that goes beyond content analysis and into practice. Horror is always going to impact people's lives and how they make decisions whether those be big decisions or small decisions, with video games on the rise it is imperative that they get studied further for the betterment of the future.

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Appendices

Appendix A:

Institutional Review Board (IRB) Approved Research Form

Institutional Review Board (IRB)
for the Protection of Human Research Participants

Graduate Student Research
IRB Oversight Screening Determination Report

Project Title: Is it just Jump Scares? A look into ELM and horror.

Name: Gabrielle Lamura

Department: Communication Arts

E-mail: gllamura@valdosta.edu

Telephone: 229-541-2721

Faculty Advisor: Dr. Michael Eaves

Please indicate the academic purpose of the proposed research:

- ☐ Doctoral Dissertation
- ☒ Master's Thesis
- ☐ Other:

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*You answered "**NO**" to all questions on the IRB Oversight Screening Determination Form; therefore, your research **is not** subject to IRB oversight.*

1. ☐ YES ☒ NO **Will you utilize *existing identifiable private* information about living individuals?** "Existing" information is data that were previously collected for some other purpose, either by the researcher or, more commonly, by another party. "Identifiable" means that the identities of the individuals can be ascertained by the researcher by name, code number, pattern of answers, or in some other way, regardless of whether or not the researcher needs to know the identities of the individuals for the proposed research project. "Private" information includes information about behavior that occurs in a context in which an individual can reasonably expect that no observation or recording is taking place or information provided for specific purposes that the individual can reasonably expect will not be made public (e.g., a medical record or student record).

   Note: If you are using data that: (1) are publicly available; (2) were collected from individuals anonymously (i.e., no identifying information was included when the data were first collected); (3) will be de-identified before being given to the researcher, (i.e., the owner of the data will strip identifying information so that the researcher cannot ascertain the identities of individuals); or (4) do not include any private information about the individuals, regardless of whether or not the identities of the individuals can be ascertained, your response to Question 1 should be NO.

2. ☐ YES ☒ NO **Will you *interact* with individuals to obtain data?** "Interaction" includes communication or interpersonal contact between the researcher and the research participant, such as testing, surveying, interviewing, or conducting a focus group. It does not include observation of public behavior when the researcher does not participate in the activities being observed.

3. ☐ YES ☒ NO **Will you *intervene* with individuals to obtain data?** "Intervention" includes manipulation of the individual or his/her environment for research purposes, as well as using physical procedures (e.g., measuring body composition, using a medical device, collecting a specimen) to gather data for research purposes.

◆◆◆◆◆◆◆◆◆◆◆◆◆

Elizabeth W. Olphie *03.05.2023*
Elizabeth W. Olphie, IRB Administrator Date

Thank you for submitting an IRB application.
Please direct questions to irb@valdosta.edu or 229-259-5045.

Determination of Graduate Student Research – 11.21.2022 tw

Appendix B:

In-game Pictures

SOMA

Appendix C:

Coding Sheet

SOMA Codebook:

Each Game sequence will have a different excel sheet for organizational purposes, which will contain the following.

General Definitions:

Effective: Able to produce desired effect whether that be through peripheral or central cues, i.e how impactful was the message being received

Prominent: Noticeable

Code for not applicable: 90

Central: Requires high elaboration, content heavy

Peripheral: Requires low elaboration, general impressions, visual prominence

Lore ***Definitions:*** history, and world building elements that make up the game.

Lore: Backstory, In-game prerecorded dialogue, located in various areas entitled "Audio Player"

Audio recording: Notes: In-game writings/ drawings in various areas (e.g. sticky notes, notebook paper) will be handwritten

"Data Buffers": In-game, within various terminals there will be the label "DATA BUFFER", once activated will play out.

Dialogue: Conversations between characters, conversations with In-game self. Case Files: Reports/Documents found that detail extra information.

Survey: In-game questionnaire, labeled "Calibration survey". Emails: In-game messages found on various computers.

Is lore present? **0=no, 1= yes** If yes code for the following:

What type of lore is present (**2= audio recording, 3= Notes, 4= "Data Buffers", 5= Dialogue, 6= Case Files, 7= Survey, 8= Emails)**

On a 0-3 scale rate the extent in which the lore present was effective (0= not effective, 1= slightly effective, 2= effective, 3= very effective) How effective was this lore?

Decision Making ***Definitions:***

Decision making: In game choices made through the main character (Simon) Forced: In-game decisions that have no other option in order to progress the game. Optional: In-game decisions that have more than one choice, doesn't impact game progression

Is Decision making present? **0= no, 1= yes** If yes code for the following:

Was it forced or optional? (**3= forced, 4= optional)** How effective was this decision?

On a 0-3 scale rate the extent in which the decision was effective (0= not effective, 1= slightly effective, 2= effective , 3= very effective)

Existential Horror

Definitions:

Existential Horror: Cognitive and emotional experience of existence and the meaning of life. (e.g. conversations with robots, fear/questioning of human consciousness)

Is existential horror present (0= no, 1= yes) If yes code for the following;

how effective was the existential horror? **On a 0-3 scale rate the extent in which the existential horror present was effective (0= not effective, 1= slightly effective, 2= effective , 3= very effective)**

Atmosphere

Definitions

Atmospheric Horror: fear evoked through the elements of audio, artwork, and in-game map design that can elevate game experience.

Sound: In-game audio

Lack of sound: In-game absence of audio that aids games atmosphere.

Visual: In-game aesthetics and level designs that aids in game atmosphere

Is there atmospheric horror present? **(0= no, 1= yes)** If yes code for following:

(If type of horror is present code 2= sound, 3= lack of sound, 4= visual) How prominent is the atmospheric horror **(0= not prominent, 1= slightly prominent, 2= prominent , 3= very prominent)**

How effective is the atmospheric horror? **(0= not effective, 1= slightly effective, 2= effective , 3= very effective)**

10

Jump scares:

Definitions

Jumpscare: a scripted moment intended to startle player

Noise: loud or jarring sounds

Hidden Attack: Scare comes out of nowhere

Hide and Seek: hiding from monster who is in the same area as player

The Chase: attempting to run from monster trying to catch up to the player

Surreal Scare: Something so out of the ordinary it is startling (e.g. monsters)

Are there jump scares present? **(0= no, 1= yes)**

If yes code for following:

What type of jump scares are present? **(5= noise, 6= hidden attack, 7= hide and seek, 8= the chase, 9= surreal scare)**

How effective was the jump scare? **(0= not effective, 1= slightly effective, 2= effective , 3= very effective)**

Appendix D:

Tables

Site Upsilon

1	Date	Timestamp	Is lore pre	Type of lor	effectiven	Is decisior	Forced or	Effectiven	Is there ex	Effectiven	Is there ati	Type of atr	Prominen	Effectiven	Is there Ju	Type of jur	effectiveness of
2	2.24.24	17:07-17:34	1	4	1	0	90	90	0	90	1	2,4	2	2	0	90	90
3		18:28	0	9	9	0	90	90	0	90	1	2,4	3	3	1	6	3
4		18:48-19;20	1	5	2	0	90	90	1	2	1	4	2	2	0	90	90
5		19:24-19:56	0	9	9	0	90	90	0	90	1	2,4	3	3	1	5	2
6		20:23-20:29	0	9	9	0	90	90	0	90	1	2,4	3	3	1	6,9	3
7		21:58-22:00	0	9	9	0	90	90	0	90	1	2,4	3	2	0	90	90
8		25 mins 8 sec	1	8	2	0	90	90	0	90	0	90	90	90	0	90	90
9		25:38-25:46	0	9	9	0	90	90	0	90	1	2,4	3	2	1	6	3
10		26:26-27:00	1	4	2	0	90	90	0	90	0	90	90	90	0	90	90
11		27:11--27:22	1	3	2	0	90	90	0	90	1	2	3	2	0	90	90
12		27:24-27:29	1	3	3	0	90	90	0	90	1	2	3	2	0	90	90
13		27:34-27:42	1	3	3	0	90	90	0	90	1	2	3	2	0	90	90
14		28:02-28:41	0	9	9	0	90	90	1	2	1	2,4	3	3	0	90	90
15		29:41-29:53	0	9	9	0	90	90	0	90	1	2,4	3	2	0	90	90
16		29:54-30:00	1	3	3	0	90	90	0	90	1	2,4	3	3	0	90	90
17		30:04-30:41	1	5	2	1	3	3	1	3	1	4	3	3	0	90	90
18		31:36-32:38	1	5	1	0	90	90-	0	90	0	90	90	90	0	90	90
19		33:46-35:01*	0	9	9	0	90	90	0	90	1	2,4	3	3	1	7,9	3
20		35:17-35:19	0	9	9	0	90	90	1	1	1	2,4	1	2	0	90	90
21		35:20-35:29	1	3	2	0	90	90	0	90	1	4	3	2	0	90	90
22		35:38-35:47	1	3	2	0	90	90	0	90	1	2,4	3	2	0	0	90
23		36:09:00	0	9	9	0	90	90	0	90	0	90	90	90	1	5	2
24		36:15:00	1	3	3	0	90	90	0	90	0	90	90	90	0	90	90
25		36:50-40:19*	1	5	3	1	4	3	1	3	1	2,4	3	3	0	90	90
26		40:36-41:03	1	4,5	2	0	90	90	0	90	1	2,4	3	2	0	90	90
27		41:22-41:33*	1	5,6	3	0	90	90	1	2	1	2,4	3	3	0	90	90
28		41:34--42:15	1	4,5	3	0	90	90	0	90	1	2,4	3	3	0	90	90
29		42:43:00	1	3	3	0	90	90	0	90	1	4	2	1	0	90	90
30		44:10-44:17	1	8	3	0	90	90	0	90	0	90	90	90	0	90	90
31		44:40-44:50	1	8	3	0	90	90	0	90	0	90	90	90	0	90	90
32		45:39:00	1	6	2	0	90	90	1	2	0	90	90	90	0	90	90
33		46:20-46:38	1	3	2	1	3	3	0	90	1	4	3	2	0	90	90
34		46:54-48:19*	0	9	9	0	90	90	0	90	1	2,4	3	3	1	7,9	3
35		48:31-48:52	1	2	2	0	90	90	0	90	0	90	90	90	0	90	90
36		48:54-49:18	1	2	2	0	90	90	0	90	0	90	90	90	0	90	90
37		49:22-49:48	1	2	2	0	90	90	0	90	0	90	90	90	0	90	90
38		49:49-50:15	1	2	3	0	90	90	0	90	0	90	90	90	0	90	90
39		50:52-51:09	1	8	3	0	90	90	0	90	1	4	2	2	0	90	90
40		52:04:00	0	90	90	0	90	90	1	3	0	90	90	90	0	90	90
41		52:27-53:38	1	5	3	0	90	90	0	90	1	2,4	3	3	0	90	90

Site Lambda

	A	B	C	D	E	F	G	H	I	J	K	L	M	O	P	Q	R	S
1	Date	Timestamp	Is lore presen	Type of lore	effectiveness	Is decision m	Forced or opt	Effectiveness	Is there exsite	Effectiveness	Is there atmo	Type of atmos	Prominence	Is there Jump	Type of jump	effectiveness of jumpscare		Effectiveness *
2	3.1	56:49-57:02	0	90	90	0	90	90	0	90	1	2,4	3	0	90	90		3
3		57:08-57:45	1	4	2	0	90	90	0	90	0	90	90	0	90	90		90
4		58:07-1:01:2	0	90	90	0	90	90	0	90	1	2,4	3	0	90	90		3
5		1:02:06-1:02:	1	4	3	0	90	90	0	90	1	4	2	0	90	90		2
6		1:03:20	1	6	2	0	90	90	0	90	1	4	2	0	90	90		2
7		1:03:26-1:04:	1	6	3	0	90	90	0	90	1	4	3	0	90	90		3
8		1:05:55-1:06:	1	5	3	1	3	3	1	2	1	2,4	3	0	90	90		3
9		1:09:12-1:10;	1	6	3	0	90	90	0	90	1	4	2	0	90	90		2
10		1:10:58-1:11:	0	90	90	0	90	90	0	90	1	4	3	0	90	90		3
11		1:11:10-1:11:	1	5	2	0	90	90	0	90	1	4	1	0	90	90		1
12		1:19:12	0	90	90	0	90	90	0	90	1	2,4	3	1	5	3		3
13		1:20:08-1:22:	1	5	3	0	90	90	1	2	1	4	2	0	90	90		2
14		1:20:44-1:25:	1	5	3	0	90	90	1	3	1	4	3	0	90	90		3
15		1:25:56-1:26:	1	6	2	0	90	90	0	90	1	4	3	0	90	90		3
16		1:26:27-1:26:	1	6	2	0	90	90	0	90	1	4	3	0	90	90		3
17		1:27:08-1:27:	1	6	3	0	90	90	1	2	1	4	2	0	90	90		2
18		1:27:57-1:28:	1	6	2	0	90	90	0	90	0	90	90	0	90	90		90
19		1:28:16-1:29:	1	7	3	1	4	3	1	3	0	90	90	0	90	90		90
20		1:30-1:31:34	1	5	2	0	90	90	0	90	0	90	90	0	90	90		90
21		1:32:38	0	90	90	0	90	90	0	90	1	4	3	1	9	3		3
22		1:32:45-1:33:	1	5,8	3	0	90	90	0	90	0	90	90	0	90	90		90
23		1:33:10-1:33:	0	90	90	0	90	90	0	90	1	3,4	3	1	9	2		3
24		1:35:18-1:35:	1	5,7	2	0	90	90	0	90	1	4	3	0	90	90		3
25		1:36:40-1:36:	0	90	90	0	90	90	0	90	1	2,4	3	1	6,9	3		3
26		1:37:26-1:38:	0	90	90	0	90	90	0	90	1	4	3	0	90	90		3
27		1:38:23-1:38:	0	90	90	0	90	90	0	90	1	2,4	3	1	6,9	3		3

Appendix D Continued

Site Delta

A	B	C	D	E	F	G	H	I	J	K	L	M	N	O	P	Q
ate	Timestamp	Is lore present	Type of lore	effectiveness c	Is decision ma	Forced or opti	Effectiveness	Is there exsiter	Effectiveness	Is there atmos	Type of atmos	Prominence o	Effectiveness	Is there Jumps	Type of Jumps	effectiveness of
3.2	1:55:30-1:56	1	4	2	0	90	90	0	90	1	4	3	3	0	90	90
	1:56:15-1:56	1	6	2	0	90	90	0	90	1	4	2	2	0	90	90
	1:58:45-1:59	0	90	90	0	90	90	0	90	1	3,4	3	3	0	90	90
	1:59:20-1:59	1	3	3	0	90	90	1	3	1	4	3	3	0	90	90
	1:59:42-1:59	1	3	3	0	90	90	0	90	1	4	3	3	0	90	90
	1:59:56-2:00	1	3	3	0	90	90	1	2	1	4	3	3	0	90	90
	2:00:42-2:01	0	90	90	0	90	90	1	2	1	4	3	3	0	90	90
	2:02:55-2:03	1	8	3	0	90	90	0	90	1	4	2	2	0	90	90
	2:04:05	0	90	90	0	90	90	0	90	1	4	3	3	0	90	90
	2:04:42-2:05	1	2	3	0	90	90	0	90	1	4	1	1	0	90	90
	2:05:11-2:05	1	2	3	0	90	90	0	90	1	4	1	1	0	90	90
	2:06:52	1	8	2	0	90	90	0	90	1	4	3	3	0	90	90
	2:07:11-2:07	1	5	3	0	90	90	1	2	1	4	3	3	0	90	90
	2:09:58-2:10	1	4	3	0	90	90	0	90	1	4	3	3	0	90	90
	2:10:52-2:11	1	5	1	0	90	90	1	3	1	4	3	2	0	90	90
	2:12:00-2:12	1	5	3	1	3	3	1	3	1	4	3	3	0	90	90
	2:12:58-2:13	0	90	90	0	90	90	1	3	1	4	3	3	0	90	90
	2:13:57-2:14	1	5	3	0	90	90	1	3	1	4	2	2	0	90	90
	2:16:25-2:18	1	5	3	0	90	90	1	3	1	4	3	3	0	90	90

Site Theta/Theta Labs

	A	B	C	D	E	F	G	H	I	J	K	L	M	N	O	P	Q
1	Date	Timestamp	Is lore present	Type of lore	effectiveness c	Is decision ma	Forced or opti	Effectiveness	Is there exsiter	Effectiveness	Is there atmos	Type of atmos	Prominence o	Effectiveness	Is there Jumps	Type of jumps	effectiveness
2	3.2	2:18:37-2:19	1	4	2	0	90	90	0	90	1	4	3	3	0	90	90
3		2:19:35-2:20	1	4	3	0	90	90	1	3	1	4	3	3	0	90	90
4		2:20:55-2:22	1	5	2	0	90	90	0	90	1	4	3	3	0	90	90
5		2:22:22-2:24	1	5	3	0	90	90	1	3	1	4	3	3	0	90	90
6		2:28:28-2:29	1	5	3	0	90	90	1	2	1	4	1	2	0	90	90
7		2:32:14	0	90	90	0	90	90	0	90	1	4	2	1	1	5,6	3
8		2:33:06-2:33	0	90	90	0	90	90	1	3	1	2,4	3	3	0	90	90
9		2:36:35-2:37	1	6	3	0	90	90	1	1	0	90	90	90	0	90	90
10		2:39:06	1	3	3	0	90	90	0	90	0	90	90	90	0	90	90
11		2:39:22-2:41	1	6	3	0	90	90	1	3	0	90	90	90	0	90	90
12		2:41:49	1	6	2	0	90	90	0	90	0	90	90	90	0	90	90
13		2:43:12	0	90	90	0	90	90	0	90	1	3,4	3	3	0	90	90
14		2:45:16-2:45	0	90	90	0	90	90	0	90	1	4	3	3	1	9	3
15		2:"46:04-2:4	1	5	3	0	90	90	0	90	1	4	3	1	0	90	90
16		2:47:36-2:48	1	4	3	0	90	90	0	90	1	4	2	2	0	90	90
17		2:49:15-2:50	1	6,5	3	0	90	90	1	3	0	90	90	90	0	90	90
18		2:50:04-2:50	1	2	3	0	90	90	1	2	0	90	90	90	0	90	90
19		2:50:28-2:50	1	2	2	0	90	90	1	1	0	90	90	90	0	90	90
20		2:50:58-2:52	1	2	3	0	90	90	1	3	0	90	90	90	0	90	90
21		2:52:12	0	90	90	1	4	3	1	3	0	90	90	90	0	90	90
22		2:52:18-2:52	1	5	3	0	90	90	1	3	0	90	90	90	0	90	90
23		2:53:18-2:53	1	5	3	0	90	90	0	90	90	0	90	90	0	90	90
24		2:53:47-2:54	0	90	90	0	90	90	0	90	1	2.4	3	3	0	90	90
25		2:55:34-2:57	0	90	90	0	90	90	0	90	1	3,4	3	3	1	7,9	3
26		2:58:16-2:59	1	5	3	0	90	90	1	3	1	4	2	1	0	90	90
27		2:59:40-3:00	1	5	3	0	90	90	1	2	1	4	2	2	0	90	90
28		3:01:59-3:02	1	5	3	1	4	3	1	3	0	90	90	90	0	90	90
29		3:02:45-3:04	1	5	3	1	4	3	1	3	0	90	90	90	0	90	90
30		3:05:59-3:06	1	5	3	1	4	3	1	3	0	90	90	90	0	90	90
31		3:07:25	1	3	3	0	90	90	0	90	0	90	90	90	0	90	90
32		3:08:10-3:08	1	8	2	0	90	90	0	90	0	90	90	90	0	90	90
33		3:08:56-3:09	1	4	2	0	90	90	0	90	0	90	90	90	0	90	90
34		3:09:15-3:09	1	5	3	0	90	90	1	2	0	90	90	90	0	90	90
35		3:10:34-3:11	1	5	3	1	3	3	1	3	0	90	90	90	0	90	90
36		3:11:35-3:12	1	5	3	1	4	3	1	2	0	90	90	90	0	90	90
37		3:12:32-3:12	1	5	3	0	90	90	1	3	1	4	2	1	0	90	90
38		3:14:48-3:15	0	90	90	0	90	90	1	3	1	3,4	3	3	0	90	90
39		3:16:16-3:17	0	90	90	0	90	90	0	90	1	3,4	3	3	0	90	90
40		3:20:50	1	6	3	0	90	90	0	90	0	90	90	90	0	90	90
41		3:21:00-3:21	1	7	3	1	4	3	1	3	0	90	90	90	0	90	90
42		3:22:16	1	3,5	3	0	90	90	0	90	0	90	90	90	0	90	90
43		3:23:11-3:25	0	90	90	0	90	90	1	3	0	90	90	90	0	90	90
44		3:26:06-3:27	1	4	3	0	90	90	0	90	1	2,4	3	3	0	90	90
45		3:27:57	0	90	90	0	90	90	0	90	1	4	3	3	0	90	90
46		3:28:14-3:29	1	4	3	0	90	90	1	2	1	4	3	3	1	5,7,9	3
47		3:30:28-3:31	1	6	3	0	90	90	0	90	1	3,4	3	3	1	7	2
48		3:32:13-3:32	1	4	3	0	90	90	0	90	0	90	90	90	1	7	1
49		3:33:12	1	3	2	0	90	90	0	90	1	4	3	2	1	7	1
50		3:33:21	1	3	3	0	90	90	0	90	1	4	3	2	1	7	1
51		3:33:46	1	8	3	0	90	90	1	1	0	90	90	90	1	7	1
52		3:34-3:35:32	1	2	3	0	90	90	0	90	1	4	3	3	1	7	2
53		3:36:45-3:38	1	5	3	0	90	90	0	90	1	4	3	3	1	7	1
54		3:38:40-3:41	0	90	90	0	90	90	0	90	1	3,4	3	3	1	7,9	3
55		3:42:11-3;43	0	90	90	0	90	90	0	90	1	3,4	3	3	1	6,9	3
56		3:44:10-3:44	1	5	3	0	90	90	1	3	0	90	90	90	0	90	90
57		3:45:053:57:	0	90	90	0	90	90	0	90	1	4	3	3	1	6,9	3
58		3:58:27-3:59	1	5	3	0	90	90	0	90	1	4	3	3	1	8,9	3

D Continued

Site Omicron

	E	F	G	H	I	J	K	L	M	N	O	P	Q
1	effectiveness (	Is decision ma	Forced or optio	Effectiveness (	Is there exsiter	Effectiveness (	Is there atmosp	Type of atmosp	Prominence of	Effectiveness (	Is there Jumps(	Type of jumps(	effectiveness c
2	3	0	90	90	0	90	1	4	3	3	0	90	90
3	3	0	90	90	1	3	1	4	3	3	0	90	90
4	3	0	90	90	1	3	1	4	3	3	0	90	90
5	2	0	90	90	0	90	1	4	3	3	0	90	90
6	3	0	90	90	1	2	1	4	3	3	0	90	90
7	3	0	90	90	1	3	1	4	3	3	0	90	90
8	3	0	90	90	1	2	1	3,4	3	3	0	90	90
9	90	0	90	90	1	1	1	4	3	3	1	6,9	3
10	3	0	90	90	1	2	1	4	2	2	1	5	2
11	2	0	90	90	1	3	1	4	3	3	0	90	90
12	90	0	90	90	1	2	1	4	3	3	0	90	90
13	3	0	90	90	1	2	1	2	3	3	0	90	90
14	3	0	90	90	1	2	1	2,4	3	3	0	90	90
15	90	0	90	90	0	90	1	3,4	3	3	1	6,9	3
16	3	0	90	90	0	90	1	3	2	2	0	90	90
17	3	0	90	90	1	2	1	4	3	3	0	90	90
18	90	0	90	90	1	3	1	4	3	3	0	90	90
19	3	0	90	90	1	2	1	2	2	1	0	90	90
20	3	0	90	90	0	90	1	4	3	3	0	90	90
21	3	0	90	90	1	2	1	4	3	3	0	90	90
22	90	0	90	90	1	2	1	2,4	3	3	0	90	90
23	3	0	90	90	1	2	1	4	2	3	0	90	90
24	3	0	90	90	0	90	0	90	90	90	0	90	90
25	90	0	90	90	1	3	1	2,4	3	3	1	9	3
26	90	0	90	90	1	3	1	2,4	3	3	1	6	3
27	90	0	90	90	0	90	1	2,4	3	3	1	8,9	3
28	3	1	4	3	1	3	1	2,4	3	3	0	90	90
29	3	0	90	90	1	3	1	4	3	3	0	90	90
30	3	0	90	90	1	2	1	4	3	3	1	6,9	3

End of Tau Alpha

	A	B	C	D	E	F	G	H	I	J	K	L	M	N	O	P	Q
1	Date	Timestamp	Is lore present	Type of lore	effectiveness o	Is decision mak	Forced or optio	Effectiveness o	Is there exsiten	Effectiveness o	Is there atmosp	Type of atmosp	Prominence of	Effectiveness o	Is there Jumps(	Type of jumps(	effectiveness of
2	3.3	5:43:56-5:46:5	1	5	3	0	90	90	1	2	1	3,4	3	3	0	90	90
3		5:47:42	1	6	1	0	90	90	0	90	1	2	3	3	0	90	90
4		5:49:03-5:52:2	1	5	3	1	4	3	1	2	1	4	3	3	0	90	90
5		5:53:20	1	6	2	0	90	90	0	90	1	3,4	2	2	0	90	90
6		5:57:23-5:58:3	1	5	3	0	90	90	0	90	1	4	3	3	0	90	90
7		5:58:39	0	90	90	0	90	90	0	90	1	2,4	3	3	1	6	3
8		5:59:18-6:02:3	1	5	3	0	90	90	1	2	1	4	3	3	0	90	90
9		6:03:10-6:04:3	1	5	3	1	3	3	1	2	1	2,4	3	3	1	9	3
10		6:04:46-6:09:0	1	5	3	0	90	90	1	3	1	4	3	3	1	7,9	3

Site Phi /The Ark

	A	B	C	D	E	F	G	H	I	J	K	L	M	N	O	P
1	Date	Timestamp	Is lore present	Type of lore	effectiveness o	Is decision mak	Forced or optio	Effectiveness o	Is there exsiten	Effectiveness o	Is there atmosp	Type of atmosp	Prominence of	Effectiveness o	Is there Jumps(	Type of ju
2	3.3	6:10:07-6:12:3	1	5	3	0	90	90	1	3	0	90	90	90	0	
3		6:14:32	1	3	1	0	90	90	0	90	1	4	2	1	0	
4		6:16:13-6:17:5	1	5	3	0	90	90	0	90	1	4	3	3	0	
5		6:17:56-6:20:2	1	5	3	0	90	90	0	90	1	4	2	1	0	
6		6:22:45-6:29:2	1	5	3	0	90	90	1	3	1	4	3	3	0	
7		6:32:27	1	7	3	1	4	3	1	3	0	90	90	90	0	
8		6:35:39-6:37:3	1	5	3	0	90	90	1	2	0	90	90	90	0	

Appendix E:

In-Game Survey

Question
8. Would you rather be removed from the project and accept death?
Answers
1 No.
2 Maybe - I need to think about it.
3 Yes.
Next Question