

DIKULT350
Master's Thesis in Digital Culture



Psyche as a Playable Construct in Video Games

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Spring 2023
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ABSTRACT

The aim of this master's thesis called *Psyche as a Playable Construct in Video Games* is to explore how the human mind is reflected in video games and how thus the psyche becomes a playable environment. This study also analyzes whether video games as a medium can promote self-reflection and empathy by portraying the psyche and developing narratives around this theme. These set objectives are achieved by performing medium-specific multimodal discourse analysis of three case studies, as well as comparative game analysis.

The purpose is to discover how the psyche nowadays becomes an accessible, interactive, and embodied virtual environment through various modern modes of expression. In addition to the topic of the psyche as a game setting the research also looks at the reflection of the psyche in the theories of psychoanalysts, the principles of creating playable virtual spaces and mental landscapes, and the unique manner of video games in representing phenomena. This thesis includes a review of relevant scholarship into game studies, psychoanalysis and multimodal discourse, as well as an examination of three video games of different scales and genres, all of which render the human psyche a playable construct: *Nevermind* (2015), *When the Darkness comes* (2019) and *Psychonauts 2* (2021).

By showing distinctive approaches to representing the psyche and interaction with it, this research highlights the enormous potential of video games to offer their users experiences that cannot be delivered through any other channel. As well, my thesis demonstrates how game design reflects scientific discoveries about the psyche to the present day: as independent but influenceable; chaotic and multi-layered but deterministic. It also proposes future research suggestions in this context on how likely are games set in the human mind to promote compassion, empathy, and self-analysis in a wide audience.

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INTRODUCTION

The digital culture we live in today has transformed most aspects of life, and video games have become, perhaps, the central product of this culture (Muriel & Crawford, 2018, p. 18), surpassing other forms of media such as the music and film industries in terms of revenue. Referring to Kirby, who has discussed *digimodernism*, video games act as a prototype of digital culture and play a vital role in shaping the contemporary social imaginary (Kirby, 2009, p. 167). Therefore, it would be difficult to fully comprehend digital culture and modern society without considering the influence of this medium. As defined by Muriel and Crawford, video game influence or *videoludification* unfolds in many forms such as gamification, virtual or augmented reality, social networks and many other spheres (Muriel & Crawford, 2018, p. 21).

Since video games are one of the biggest players in the entertainment industry they are thus powerful in their ability to convey a message to a wide audience. Nowadays, video games are being addressed in critical scholarship and should not be seen only as plain enjoyment or “nonserious” media but also as a valuable tool for new experiences, learning, and enhanced multisensory perception (Gee, 2007; Heineman, 2015; Bavelier & Green, 2010; Bavelier, 2012). The themes of video games and their interwoven statements are a noteworthy field of research as they can affect how people perceive and understand various phenomena in life.

Also, this medium is expressive and persuasive in its own unique way as it uses interactivity and procedurality as the main rhetoric. Therefore, it is not a simple computational artifact, but a computational artifact with cultural significance, although not as widely recognized among academics as other cultural manifestations (Bogost, 2007).

Lately, in the last five years or so, more and more games have featured topics related to psychology and the study of the human psyche in their narratives (Sendler, 2017; Ferchaud, Seibert, Sellers & Salazar, 2020). One of the most prominent examples of such games is *Hellblade: Senua's Sacrifice*, which has been widely studied and praised for its accurate portrayal of psychosis. This raises the question of how the human mind is represented in video games and whether they might even act as a modern method of psychoanalysis. Since this medium is able not only to reflect a particular phenomenon but also anticipates the user's interaction, engagement, and immersion, it has several advantages for its representations to influence the player's awareness and leave a more enduring impression. Representation as something that presupposes a lack of reality or materiality, whether it is of gender, identity,

culture, or psyche, in video games cannot be separated from their core elements such as code, hardware, mechanisms, as well as audiovisual elements that overlay it. Moreover, serious representation of various contemporary issues is increasingly demanded from this medium as well, such as the #INeedDiverseGames campaign, the emergence of the genre of queer games, and the expansion of the topic of mental illness in video games (Malkowski & Russworm, 2017).

Since video games are spatial concepts with a need of establishing a playable environment they can be interpreted as representational spaces (Günzel, 2020). Although virtual space can have a lot in common with physical space and could generally attempt to imitate reality by highlighting individual components, virtual environments are also able to create landscapes that are largely rooted in imagination and interpretations of the topic, such as selecting the human psyche as an intriguing and versatile game space with applicable game-mechanics. In this way, the mind is not only represented aesthetically and audiovisually but becomes playable, explorable, and analyzable.

Referring to the above, this thesis, titled *Psyche as a Playable Environment in Video Games*, aims to explore **how the human mind becomes a playable construct in video games**. The objective is to study games whose setting is the inside of someone's mind through medium-specific analysis. The work incorporates studies from psychoanalysis, cognitive psychology, multimodal discourse analysis, game and digital media studies as well as conduction and in-depth exploration of several case studies with the most outstanding games centered on the human psyche. As games that revolve around mental health and psychology are a relatively recent phenomenon, so far there have been no scholarly works that would address the topic of representation of the psyche in video games systematically and beyond individual case study approaches. This study helps to discover what the affordances of this type of digital medium are for portraying the human psyche as an active process of reflecting reality in the form of feelings, perceptions, concepts.

In order to achieve the objective of the thesis, several research tasks have been set:

1. generally get acquainted with the concept of *psyche*;
2. describe and analyze techniques used to construct and visually represent the human psyche as a game setting;
3. comprehend what are the characteristics of virtual game environments and how the user perceives them;

4. analyze how the mind is played through multiple modes of communication, and how it is medium-specific;
5. obtain and compile information on these types of video games and their role in the development and diversity of video games;
6. analyze in detail video games, the context of which corresponds to the topic of this research, and highlight the main insights a player can obtain by interacting with the game.

As this particular topic is not widely researched, the theoretical part of the paper will be based mainly on general industry research to develop a conceptual framework for analyzing the results of case studies and determining the overall methods of video games depicting the human mind.

Theoretical works are crucial for the development of this study, however, no studies exist to date that would address the topic of the portrayal of the psyche in video games. Therefore, in order to gain a more profound understanding of this subject, it is essential to conduct an independent analysis of video games, focusing on the reflection and portrayal of the psyche as game environments. The work will be structured into four chapters and several subsections. This division of chapters is designed to look more thoroughly at each of the components of the research topic. The thesis requires the use of a variety of theoretical materials from different disciplines such as psychology, game studies, and semiotics.

It is first necessary to look at the discoveries of psychology, particularly psychoanalysis, to get a general idea of how the psyche works and the basic principles of its structure, based on the theories of the most influential researchers of the psyche. Although I am not an expert in the field, it was important for me to gain a general understanding of the structure and principles of the mind in order to be able to compare to what extent video game developers attempt to represent it science-based, why these and no other design techniques have been chosen and on what assumptions their imagined representation of the psyche is based on. Recognizing that the psyche as an object of research is difficult to explore and is fairly incompletely studied as well as a relatively recent field of study, it is important to build on what has been discovered so far. It should be noted that some video game developers also consult with psychologists and people who have undergone specific mental health hardships, therefore it may be required to also use academic papers and scholarly works, which refer to clinical psychology and analyze the imprints left by psychological trauma. Some of the academic works that will be referred to in this thesis have also explained how video games

can be therapeutic for the player's own psyche (Baranowski, Buday, Thompson & J. Baranowski, 2008; Halbrook, Aisling, O'Donnell & Msetfi, 2019). The role of dreams as a popular and intriguing psyche-related element in video games, art, and media will also be briefly explained. Such aspects of the mind as trauma and dreams have been chosen to be examined in more detail as these motifs are often used when considering and contemplating the psyche.

Video games, when dealing with psychological topics, include sensitive content such as trauma, mental disorders and suicide. As several authors point out, analyzing sensitive content, especially if undertaken by non-clinical researchers, raises many issues, such as the risk of getting secondary trauma, as a result of being exposed to working with sensitive data for an extended time and possibly lacking coping strategies (Mckenzie, Li, Jenkin, & Collings, 2017). On the other hand, as Fred Cutter points out in *OMEGA - Journal of Death and Dying*, the theme of depression and self-termination in art, such as Shakespeare's plays or Giovanni Canavesio's painting *The Suicide of Judas*, is widely present throughout the centuries, conveying a broad variety of meanings such as an act of heroism, desperation, irrational or stigmatized action, and may be regarded differently in each time period (Cutter, 1972).

When studying the use of the psyche as a game setting, it will be assessed how the game space, as one of the cornerstones of the construction of video games, serves to convey the meaning of the game and functions as an independent mode of communication. In addition, it is important to consider the concepts of landscape and, more specifically, mental landscape, applying them directly to the virtual environment. In the age of digital technologies, these terms are more complex, allowing the creation of embodied landscapes in the form of the human psyche.

Further, the work aims to look at the topic from the perspective of media and narrative studies to comprehend how video games use knowledge of the components of the human mind to engage the player, create interest, make a strong impression and offer unprecedented experiences, as well as get the player deeply involved in their desired narrative. The concept of *storyplaying* (which arises when the game and narrative merge into a single whole) is relevant to video games, defining the player as a reader of signs and narratives, and also as an empowered agent who plays out the story more than in any other medium (Domsch, 2013). Media studies will help to understand how video games as a medium differ from any other

mode of expression and accordingly whether it has a greater potential to proficiently apply the psyche as the guiding motive and diminish the stigma around mental health.

Most suitable for this study is a qualitative methodology, more precisely, case studies, to obtain the most detailed insights possible, bringing to the fore aspects that are relevant to the research question. In order to achieve the objective of this research and to have a clear idea of how the psyche becomes playable in video games, the empirical section of this work is founded mainly on multimodal discourse analyses. This approach allows focusing on myriad agents of expression in video games, emphasizing those modes that most ensure the media's interactivity and user participation, such as game-mechanics and procedures, or procedural mode, along with the audiovisual and spatial representation of the psyche. As, for example, Sebastian Domsch points out, video games should be seen as a *meta-medium*, as they are able to express themselves by abundantly using all presentational media (written and spoken text, still and moving images, sounds, haptics, etc.) without necessarily minimizing the meaning of each (Domsch, 2013). Having said that, video games are largely built on actions and processes therefore, medium-specific means of expression should be highlighted and given increased attention perceiving them as a basis for ensuring playability. In addition, comparative analysis will be used to compile the results of the case studies, which will allow producing more comprehensive findings and conclusions about the topic.

The video games selected as study objects are of diverse genres but with a shared theme and setting. In order to get a more comprehensive scenery, games of different budgets are chosen, including a game developed by a single author, an indie game, and a so-called triple-A game. The process of game analysis identifies the most prominent techniques of portraying the psyche, describes how video game modes work for the purpose (and how they harmonize/contrast with each other), and in what ways the player is authorized to interact with the virtual psyche's landscapes, influencing gameplay.

1. CHARACTERISTICS OF THE PSYCHE AND ITS STRUCTURE IN THE APPROACH OF PSYCHOANALYSIS

Since part of this study includes the concept of the psyche and its visual representation, it is essential to consider what is generally understood by this term and whether there have been any attempts to visually illustrate the human psyche in the form of maps, schemes, works of art, etc. Within the framework of this work, the most significant theories in the history of psyche research, as well as more modern efforts to explain the psyche, will be briefly discussed.

Psyche - from the Greek word for breath, spirit, or mind - is an ambiguous concept. According to various dictionaries of psychology, psyche is primarily explained as the brain's ability to reflect objective reality, analyze and synthesize received irritations and respond to them correctly; a set of human nervous activity processes; but also the soul, if by this is understood the psychic structure of a person, the spiritual world.

"The human mind or soul." (Colman, 2009). *"1. The mind in its totality, as distinguished from the physical organism. 2. The self, or soul."* (Corsini, 2017, p. 75).

If in modern psychology, psychoanalysts most often choose to use the term *psyche*, then experts of cognitive psychology denote it with the concept of mind. Often the term *mind* is used to signify the conscious part of it (which is also relatively more manageable to study and work with), while in Jung's works the psyche refers to all components of the mind, including the unconscious (Conlan & Hobson, 1999; Slavin & Kriegman, 1992). In addition, one of the explanations of the word psyche means not only the mind but also the soul or the essence of a person. At the same time, both these terms are often used exchangeably.

The psyche is considered to be a *deterministically chaotic system*. A chaotic system is one whose states cannot be predicted, while a deterministically chaotic system has so many factors affecting its course of action (all of which cannot be identified) that it is impossible to fully apprehend (Quinodoz, 1997; Spruiell, 1993). Similar to various natural phenomena, such as the occurrence of earthquakes or the direction of tornadoes, they are usually not foreseeable due to their numerous influencing factors. Scholars apply the aforementioned deterministic chaos theory, which is primarily used in mathematics, to both physical phenomena and psychic systems, as opposed to considering them as random or evidently

disorderly. To put it another way, although psyche can appear to be based on randomness it actually is deterministic which means that it follows some hard-to-calculate pattern.

1.1. The discussion of mind and body

Since ancient times, there has been a current discussion about body vs. mind. One of the central questions in philosophy, and nowadays also in psychology, concerns the body/mind dilemma: is the psyche part of the body, and is the body part of the psyche? If they are separated, the question arises as to how they interact with each other and who can be considered superior.

Today, we have discovered a lot about the human structure and know that the psyche is responsible for mental processes, thoughts, and consciousness, while the body is for the physical aspects of the brain's neurons and how the brain is structured. However, the mind-body problem is in their synergy (Kirk, 2014).

Frequently a human is characterized dually - as a being with both a non-physical mind and a physical body/brain that exist as separate independent entities. Cartesian dualism assumes that there is a two-way interaction between our mental and physical substances. Descartes argued that the mind interacts with the body at the pineal gland. Thus, the mind is not superior to the body, because the body is also capable of influencing our rational behaviour, for instance, doing something driven by overwhelming emotions. Until Descartes, the relationship between the body and psyche was largely believed to be one-way (McLeod, 2018).

Monism theories which strictly presupposes the existence of only the physical or, on the contrary, only the spiritual, should also be mentioned in contrast to dualism. There are two main types of monism:

- materialism - belief that there is nothing else except the material world; materialists-psychologists generally agree that consciousness (psyche) is a function of the brain. Mental processes can be identified with physical processes in the central nervous system, and humans are just complex physiological organisms.
- phenomenalism - the belief that physical objects and events are reducible to mental objects. There are only mental objects (psyche) and what we think of our body is also only a perception of the mind (McLeod, 2018).

Different approaches to psychology provide contrasting views on whether the mind and body are linked or separate. Nevertheless, there is increasing evidence that the body and mind interact regularly and should be viewed holistically as a thorough-going process. This is also revealed by psychosomatic medicine, which studies the interaction of psychic and somatic processes and their connection with the surrounding environment (Wise, 2014). It can be said that this is a multidisciplinary approach that focuses on the connection between mental suffering, physical disorders as well as adding the third component of the living environment, which even extends beyond the mind-body dilemma.

Authors of the book *Simulating the Mind: A Technical Neuropsychanalytical Approach*, where they are drawing parallels with psychoanalysis and engineering, raise the issue that of the sciences related to the psyche (so-called *brain sciences*), it is difficult to determine which one to use to create a unified model of the mental apparatus. Neurology is not applicable as it mainly refers to chemical and physiological processes. Psychology, on the other hand, focuses only on certain aspects of psychological functioning, which does not allow synthesizing holistic models, whereas psychiatry deals only with pathologies. Therefore, scholars emphasize the only science being worth considering when studying the psyche is psychoanalysis, which attempts to create a somewhat unified description of the psyche (Fodor, Dietmar, Georg, & Bruckner, 2009).

1.2. Depiction of the human psyche in the theories of psychoanalysts

Psychoanalysis can be described as a process to understand the unconscious psychic reality of a person and its method is primarily that of observation and interpretation, therefore subjective. Today, psychotherapy tends to work at the level of consciousness, while psychoanalysis mostly deals with the subconscious (Banning & Valerie, 2006). Although contentious and possibly subversive, many still believe this model of the human psyche lays out the most thorough understanding of our minds (Gabbard, Litowitz & Williams, 2012).

Sigmund Freud, its founder, was the first to conceive and formulate it,

“[...] we know two kinds of things about what we call our psyche (or mental life): firstly, its bodily organs and scene of action, the brain (or nervous system) and, on the other hand, our acts of consciousness, which are immediate data and cannot be further explained by any sort of description” (Freud, 1915, p. 144).

He named the main components of the psyche a little more than 100 years ago and they are still used today. Freud discovered that the human psyche has three aspects that influence our behavior. It is our *Self (Ego)* – the conscious part of us that deals with reality. The subconscious is home to our desires, fantasies, and impulses (*Id*), which are often disturbing and unacceptable. And the third aspect is the *Superego* – our conscience and societal norms, which in turn try to force our *Ego* to act in a morally acceptable way. If our mind does not cope with our subconscious desires, the limitations of reality, and moral standards, we feel an unpleasant state inside - anxiety. It signals that something is wrong and the *Ego* activates defense mechanisms to help alleviate these unbearable feelings of anxiety, including feelings of guilt, shame, or threats to self-worth (Ffytche, 2012).

If Freud believed that human actions are determined by unconscious processes in the psyche, then his fellow psychoanalyst Alfred Adler came into the psychoanalysis scene being certain that human agency is central and created individual psychology. His observations of the human psyche led to the assertion that a person's personality is one indivisible whole and that his future expectations are a greater motivation than past traumas (Adler, 1956).

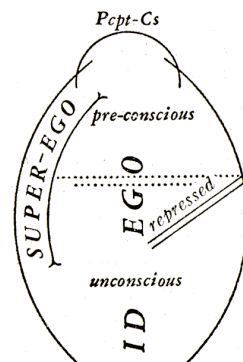


Figure 1: “Reflection of the psyche according to Z. Freud” (Campbell & Pile, 2010)

However, the greatest contribution to the detailed description of the psyche was made by Carl Gustav Jung. He owns the statement that trying to describe the psyche is like trying to describe the world. The psyche extends far beyond the possibilities of verbalizing it, and any theoretical description of the psyche is like a map of the terrain, not a description of the territory itself. Jung’s approach to the study of the psyche was very personal. His research in the field of the unconscious was based not only on work with patients, experimental data but also on long-term self-research by carefully analyzing his dreams and developing the technique of active imagination, he came to deeper and more hidden fields of the inner world. Jung believed that dreams are a crucial part of the study of the unconscious. By experiencing,

studying, and analyzing his dreams and those of his patients, he gradually came to the concept of the collective unconscious and archetypes. Jung discovered that the unconscious has the ability to form images and use them in the form of symbols (Mattoon, 2005). He observed that the human psyche expresses itself through myths, even in the psyches of people who have no prior knowledge of mythical motifs, which led him to conclude that the collective unconscious does not arise through personal experiences. In his book *On the Nature of the Psyche*, Jung writes that our personal unconscious lies above the transpersonal unconscious. (Jung, 1969, p. 155) Later psychologists distinguished another layer - the cultural unconscious (Henderson, 1984), which is located between these two unconscious and gives the person a cultural identity. It also plays a role in the formation of cultural complexes, which are manifested in creative works of art and literature (Wolf Vestergaard, 2019, p. 6).

According to Jung's concept of analytical psychology, the psyche as an entirety consists of two distinct parts - consciousness and unconsciousness. Consciousness is the waking state of observing and interacting with the external and internal world. The subconscious, on the other hand, is considered the basis of the human psyche, where images, desires, actions, and goals rest, which we need so often that we do not burden our consciousness by constantly thinking about their fulfillment (Mattoon, 2005). Jung introduced the term *psychoid space* to describe the space of transformations between the potentially knowable and the unknowable, between the potentially affectable and the unaffected, where the somatic also interacts with the psychic, instincts with archetypes (Mattoon, 2005).

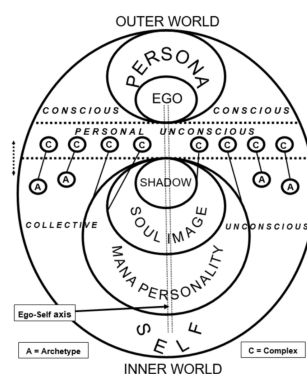


Figure 2: “Reflection of the psyche according to C.G. Jung” (Daniels, 2015)

Turning to more modern and controversial theories, depth psychologist Bill Plotkin, a leading researcher of the psyche today, focuses on the psyche including its interaction with all living nature and also sees the psyche as the human soul. In his book, *Wild Mind: Field Guide to the Human Psyche* he presents a holistic and integral ecology of the human psyche, also touching on the untapped potential, diversity, complexity, and elegant structure of the psyche. This

pattern is based on four directions - North, East, South, and West - each containing different natural energies and aspects that reflect the cycles and aspects of our inner nature. In his nature-based map of the psyche, on the horizontal plane, he places the *Self* (by description most equivalent to the subconscious mind), as well as *Subpersonalities* (fragmented or wounded parts of the psyche), whereas on the vertical axis are located *spirit* and *soul*. Plotkin distinguishes them as the spirit being the dimension of the psyche connected to God or nondual (reaching upward), and the soul being the unique individual identity (reaching down into depths). In the center lies the Ego as self-awareness within the psyche.

Plotkin believes that by discovering and relearning natural resources that we all possess simply because we have human nature, we can more easily understand and resolve our intrapsychic and interpersonal difficulties. He believes that a person must fully experience all aspects of his wild mind (Plotkin, 2013).

One of the problems he points to in Western psychology is the belief that difficulties are primarily the result of problems in individual psyches. Instead, Plotkin theorizes that the health of our psyche rests primarily in the health of the world, in other words, the psychological well-being of our families, the maturity and diversity of communities, and the vitality of the natural surroundings,

“Psychological health is interpersonal and ecological and cannot be coherently reduced to something merely subjective, internal, or neurological.” (Plotkin, 2013, p. 6)

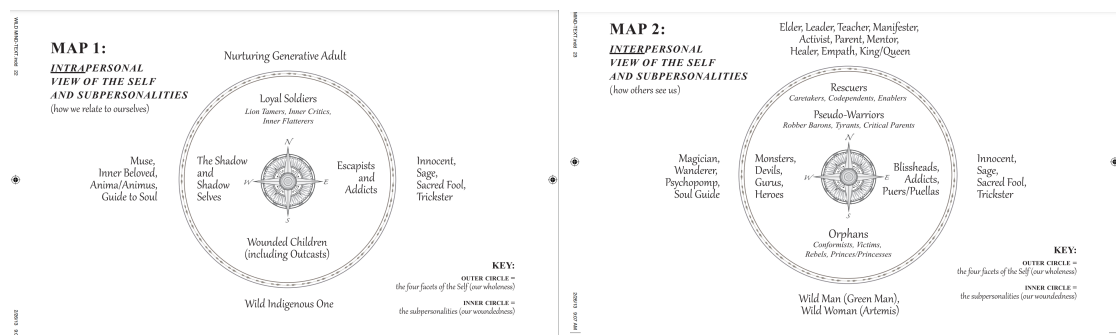


Figure 3: “Reflection of the psyche according to Bill Plotkin” (Plotkin, 2013)

Overall, the psyche is a rather abstract concept, where it is challenging to determine whether the authors mean by it a synonym for the concept of mind, brain activity, or perceive it as the human essence or soul, or all together. Moreover, this is an object of study that has been analyzed for less than 150 years and is to a great degree difficult to comprehend even today.

When looking at the scholastic works of psychology, psychoanalysis, and neuroscience, the term *psyche* is most often used without explaining its meaning in detail. In addition, those researchers of the psyche who have tried to describe the segments of the psyche, which they have uncovered through work with patients, experimentations, and self-analysis, use a fairly poetical phrasing, often even bordering on possibly esoteric or obscure assumptions. Besides, each scholar of this phenomenon tends to have different ideas about its structure. This leads to the conclusion that interpretations and imagination play an integral role in creating descriptions of the psyche.

1.3. The significance of dreams in the reflection of the psyche

When studying the human psyche, it is necessary to mention such a manifestation of the mind as dreams. Dreams reveal much about the human psyche and display it visually; from here we get an idea of the seemingly cluttered, mysterious, and independent nature of the mind. They provide a world simulation, abundantly include symbols and their purpose could be considered ambiguous and enigmatic.

The question of dreams has occupied mankind since ancient times. The scientific approach first emerged with the analyst Sigmund Freud. At first, he said that dreams are hallucinations from the unconscious. Then he rephrased this idea to say that dreams are the “royal road to the deep secrets of the unconscious” (Michael, 2015). In the end, however, Freud stuck to the idea that dreams are our repressed, unrealized desires, mainly associating them with sexuality.

Jung came to the idea that a dream is a spontaneous autobiographical expression of a person through symbols that reflect reality but also take place in reality. To put it simply, a dream is related both to what is happening in a person’s actual everyday life and to the huge amount of material that has accumulated in his unconscious. Jung and his followers say that no dream is completely interpretable. Namely, the line between consciousness and unconsciousness, between personal and interpersonal, between mind, brain, and understanding is very fragile (Jung, 1974).

According to Jung, our ego’s state during the day can be optimistic that everything is under control and understood, but the dream might give a balancing compensation to one’s often very one-sided perception of oneself. A person has shadows, complexes, and different facets. These aspects also appear in dreams, and they can appear in a wide variety of images.

Furthermore, a dream has neither space nor time boundaries. That is why one can sometimes be surprised to suddenly see events from a very deep past or people one has not seen for a long time (Jung, Hull & Shamdasani, 2010).

Although there are some who deny any meaning of dreams, nowadays the most common belief is that they are a normal psychic phenomenon with the main function to balance the psyche and indicate aspects that one is not aware of in waking life (Jung, Hull & Shamdasani, 2010, p. 87). There have been several brain studies that have proven this idea (Cooper & Weule, 2017). The brain is an emotional organ and emotions process even faster during sleep - they reach the cerebral cortex. As a result, new neurons appear in large numbers, new connections in the brain that fuse emotions, which are frequently much brighter in a dream than when awake. That is why terrors chasing people, disasters, and all kinds of cataclysms can appear in dreams (Cooper & Weule, 2017).

While, in general, dreams are characterized as individual and atypical, intriguingly some typical motifs can also be distinguished among dreams, for instance, falling, flying, being chased by someone, being in a hurry or lost, and having to fight with useless weapons (Jung, Hull & Shamdasani, 2010, p. 98).

Symbols are the primary “language” of dreams and a way to portray what is occurring in the mind. But as is known, modern people have difficulty comprehending symbolic language, and this form of expression can even get bypassed,

“As daily adaptation to the reality of things demands accurate statements, we have learned to discard the trimming of fantasy, and have thus lost a quality that is still characteristic of the primitive mind” (Jung, Hull & Shamdasani, 2010, p. 84.).

Nonetheless, it is a characteristic of dreams to use striking, emotionally charged pictorial and picturesque language instead of rational statements, that is, *natural symbols* as opposed to *cultural symbols*. Therefore, it can be argued that dreams merge our daily experiences, events, and usual way of expression with a primitive, pictorial form of expression, which is directly based on feelings and emotions. The subconscious mind can be called a natural-symbol-producer, from which we receive signals every day, but which we cannot fully understand.

As the current studies show, there is still much that is unknown about dreams; however, what we know for certain - symbols possess a tremendous role in the construction of dreams, they

are saturated with emotions, and the brain is presumably as active during dreaming phases as in waking moments, therefore they must be vital in the processes of the psyche.

1.4. Impact of trauma on psychic processes

During the last decades, trauma from a solely medical inquiry has now been discussed in cultural, literary, anthropological, political, and other contexts, evolving at the same time a humanistic theory (Bond and Craps, 2020, p. 42). Already in 1997, Mark Seltzer wrote about the emerging *wound culture* in which we live, which may have arisen due to the extremely large-scale war conflicts of the 20th century. According to him, it is characterized by the revival of traumas in the public space as in art, television, and media, which represent shared wounds, psychological and physical suffering, and shock (Seltzer, 1997, p. 4).

According to childhood trauma researcher Donald Kalsched, trauma is an impairment of sensation (Kalsched, 1997). Trauma occurs when an individual perceives a situation as threatening and potentially traumatic and experiences intense and unbearable feelings, creating psychological damage in the psyche. Whether an event causes psychological trauma is determined by a person's subjective emotional experience, that is, what seems traumatic to one person may not have a significant impact on another (Waldron, 2008, p. 531).

Psychological trauma can trigger intense anxiety, fear, and depression. Trauma survivors have often encountered such painful emotions that they have to isolate themselves. This is the method the psyche attempts to protect the core of the person and ensure the survival of the individual. However, trauma can be stronger than ego and, as a result, our ego is severely challenged and attacked. In this sense, the self-defense mechanism of the psyche, designed for the survival of the individual, can be traumatic for the psyche as a whole. Trauma affects the psyche in various forms such as physical sensations (e.g. panic attacks), visual images (persecutory dreams, flashbacks), anger cycles, and shame (Kalsched, 1997; Waldron, 2010). The isolation of recollections into separate visual, sensory, somatosensory, and affective elements associated with the trauma can be current in the memory but cannot be merged into the narrative plot (Van der Kolk, 2014).

What is valuable to this research are the inner "monsters" which can inhabit traumatized psyches. Especially in dreams, but also in moments of consciousness, people who have been exposed to traumatic events are tormented by inner, archetypal figures, which psyche

researchers call differently: *inner critic*, *internal saboteur* (Fairbairn, 1954), *sadistic superego* (Bion, 1962, p. 97), *internal tyrant* (Symington, 2003). Kalsched had observed that in the dreams or visions of traumatized minds, mythical creatures/animals often turn into monsters and devour the dreamer (Kalsched, 2013). Kalsched also put forward the presumption that it is a sacred-child or childlike part of the individual's self that is being assailed in that instant (Kalsched, 2013, p. 14). In order to be able to work with this attacking inner figure, it is necessary to visualize it (Jung's process of active imagination), recognize it, and cease identifying with it.

Researchers of the topic of trauma also mention the alternative or mythopoetic world (with metaphors, symbols, and narratives), in which victims of trauma tend to live, which is destructive for the psyche. Evija Volfa Vestergaard explaining the mythical world of trauma points out that, in the alternative reality, the psyche has the ability to reorder experiences without taking into account their biographical and historical aspects and thus change their meaning and nature (Volfa Vestergaard, 2019, p. 8).

Research on the effects of trauma does not end with psychology but also includes linguistics. Traumatic experiences change human language and, with the help of metaphors, alternative worlds are revealed, which, according to the authors Wilson and Lindy, would most accurately be described metaphorically with the "basement of Hell" (Wilson and Lindy, 2013, p. 29). Moreover, sometimes there are no words to describe traumatic experiences.

In spite of what preceded, Sharn Waldron argues that although trauma is a negative experience, it can lead to the growth of the individual (Waldron, 2008) Janoff-Bulman and Frantz (1997) believe that traumatic events cause people to face and immerse in meaning-making actions. *Adversity Activated Development* (AAD) refers to positive growthful developments that have occurred while working with the injuries left by psychological trauma and emerged through suffering (Papadopoulos, 2007).

Media genres that engage with trauma such as pop-therapeutic TV shows, like Oprah Winfrey, and modern video games depicting the pain of others prompt to address the query of how the ever-present concept of trauma functions in the present culture (Bond and Craps, 2020, p. 114). Video games - by placing the player in the place of a traumatized character or in a traumatic situation, or by incorporating trauma-specific aesthetics or structure - are able to evoke greater empathy and identification in the player than, for example, movies or

literature, thanks to their interactive and immersive format (Smethurst 2015; Smethurst and Craps, 2015).

2. CONSTRUCTION OF VIRTUAL SPACES, THEIR PERCEPTION AND MENTAL REPRESENTATIONS

As described by authors Muriel and Crawford, video games include a collection of experiences beyond the visible and known,

“Video games as experiences are not just a way to discover or depict a reality, they are actively participating in the enactment of those realities that are translated into a game experience. [...] Video games are a bundled hinterland of experiences” (Muriel and Crawford, 2018, p. 139).

This medium allows us to (re)connect with various aspects of reality and experience something unprecedented. Aarseth argues that the cornerstone of video games is not the narrative or interactivity, but the art of simulation/construction (Aarseth, 1997, p. 52), whereas Grodal also defines this medium as “simulations of basic modes of real-life experiences” (Grodal, 2003, p. 129). Katie Salen and Eric Zimmerman take it further emphasizing that video games simulate life experiences, and the goal of designing a video game is to offer an unprecedented experience (Salen and Zimmerman, 2004, p. 87). Similarly, the players themselves also often indicate that the main reason why they play video games is to attain mediated experiences that would otherwise be impossible to get (Muriel & Crawford, 2018, p. 86).

To ensure the possibility of such experiences, it is necessary to construct elaborate virtual spaces, which are made of compelling mental landscapes presenting a playground for playing out various ludic episodes that might uncover the meanings and beliefs they contain.

2.1. The multifacetedness of mental landscapes and *designing with a mind in mind*

When thinking about mental landscapes through a psychoanalytic lens, one must understand the scope of this term’s usage generally. In this study, the use of the term *mental landscape* can have two meanings. On the one hand, when studying the psyche or the human mind as a playable construct, the settings created artistically by game designers are analyzed, which are mental landscapes in the literal sense that they are an effort to reflect the mind in a visual way. At the same time, this concept is also used in other contexts, for instance, when trying to visualize various mental constructs (metaphors, associations, etc.) or to define how a person perceives different dimensions in his mind, such as space.

The moment when the observer perceives an environment and forms their ideas about it turns the environment into a landscape; it is a co-construction between individual and environment. Therefore, any study of landscapes begins with human beliefs and concepts about a certain landscape, and human perception is one of the main elements of a landscape. In other words, to comprehend a landscape, a human's grasp of the landscape should be understood. Moreover, the modern era is characterized by rapid changes, and thus the way in which different landscapes are perceived undergoes regular transformations. As Chair of the Archaeological Spessart-Project and European Pathways to Cultural Landscapes Gerhard Ermischer points out,

“One has as well to state, that landscape in itself is never static. [...] Landscape, therefore, is a process. To manage landscape one has also to understand the process. [...] Therefore it is important to view the landscape not only as 3-dimensional but as 4-dimensional” (Ermischer, 2003).

From the point of view of creating landscape architecture, mental landscapes include constructing a kind of scenography and journeying, that is, uncovering episodic scenes that allow one to construct a mental map and associate a location with certain artifacts of it. Explaining his vision of landscape and mind combination, landscape architect and theorist James Corner offers to look at the landscape as a profound environment, related to deep inward feelings, in which the person is thoroughly immersed. He describes the mental landscape as follows,

“Landscape serves as a useful counterpoint to the urban condition, providing an alternative lens through which to better understand and design for human experience, social encounter and meaningful association. Landscape speaks to movement, duration, and the full sensual haptic spectrum of experience and perception, typically bound into the very specific qualities of place and time, and as such it is a total environment, all-encompassing and demanding of engagement. It also plays with the alternating simultaneity of prospect and refuge, foreground and background, intimacy and immensity, and fear and security, all psychological states of mind and well-being” (Corner, 2020, p. 62).

While our contiguity with landscapes is inescapably physical in one form or another, it is our engagement and interaction with a specific environment that creates meaning, new experiences, neural connections in the brain, and modes of understanding. Kevin Lynch, who

was an early advocate of mental mapping, emphasized that a person's psychological sense of place is also formed due to the sedimentation of stories, occurrences, legends, and characterizations (Corner, 2020). Explaining human reaction to landscapes in his book *The Experience of Landscape*, Jay Appleton states that landscapes should rather be perceived as a biotope that attracts or repels us and the focus should be on the relationship between the individual and the particular environment - whether one is able to apply its elements to their needs.

Connected to the psychology of landscape space is also the approach to design *with the mind in mind* which presents instruments and strategies that result in unexplored or alternative modes of perceiving, encountering, and projecting (Corner, 2020). One such example of creating mental landscapes is *intimate immensity*, an oxymoron invented by the French philosopher Gaston Bachelard, in his book *Poetics of Space*. Bachelard explains how one can feel entirely puzzled in an endless and vast space, yet at the same time feel the immediacy of tactility and close-up detail. To put it simply, a person encounters every seemingly infinite space in his mind with immediate intimacy (Bachelard, 2014). In the mental landscape context, it is the experience of landscape that is not related to perception, but mainly to the creative or poetic part of the mind. That is, in order to construct landscapes, all spatial and material design components used in the creation must be adjusted for the potential of notional and poetic speculation.

Designing with the mind in mind is emphasized in the theoretical works of both landscape architects and technology developers. Its importance unfolds also in the design of different interactive computer systems: user interfaces (UI), websites, software, and video games (Johnson, 2010). Essentially, this is where computing, art, and psychology meet, thus, the creation of interactive landscapes should be seen as a distinctly interdisciplinary field.

As Delanie Ricketts and Dan Lockton argue, technology designers use metaphors strategically to externalize thoughts and help users understand new ways of interacting. Accordingly, they define mental landscapes as the externalization of mental models, emphasizing the use of metaphors. In addition, they point out that landscapes are a common kind of metaphor we use, such as *oceans of possibilities*, *entering new territory* and *career paths*, sometimes comparing a new concept to an existing thing in the landscape, or using an idea conceptually (Ricketts & Lockton, 2019).

2.2. The effect of virtual landscapes on spatial perception

If before people lived and perceived natural space, today, due to digital devices, we are able to perceive and interact with simulated environments, or virtual landscapes. John Heskett offers to define *virtual space* as “frameworks for activities, significantly affecting patterns of use, behavior, and expectations” (Heskett, 2002). In virtual worlds, physical space does not exist, but perceptual space and cognitive space still exist in the minds of users. A virtual world can be seen as an illusion or a space that imitates physical space and is revealed as three-dimensional only in the minds of the viewers. In addition, the more realistic the virtual space is created, the easier it is for the mind to accept and understand it (Saunders, Rutkowski, Van Genuchten, Vogel, Orrega, 2011).

As discussed above, it is accepted to believe that the landscape arises when a person perceives a certain environment. It also applies to virtual landscapes in virtual spaces. The term *virtual landscapes* can be used to refer to the moment when an individual engages and interacts with a virtual environment. The purpose for which the virtual environment is created determines what kind of landscape experiences will be offered. Simultaneously, the ways in which users interact with these landscapes and thereby co-construct these landscapes can change the ability of the virtual environment to perform its intended purpose. A 2020 study by Phil Ian Jones and Tess Osborne, where participants in an experiment were invited to explore virtual landscapes of 19th century London and then interviewed about their experiences of the landscapes, showed that individual position and imagination significantly influence participants’ understanding of elaborate virtual landscapes, exceeding the intentions of their creators (Jones & Osborne, 2020).

What is special about virtual landscapes, such as 3D game-based visualizations, is that they provide a sense of scale through an embodied, evocative and affective connection. Viewers are, in a sense, transported into the scene and thus allow a better reading of the intention of the landscape creator than two-dimensional landscapes (Jones & Osborne, 2020). As Gregory Whistance-Smith discusses,

“The expressive spaces of video games invite us to explore and engage with their vibrant worlds, weaving ourselves into complex interactive feedback loops that cut across physical and virtual space” (Whistance-Smith, 2022, p. 1).

Digital renderings of the environment such as in video games include various degrees of accuracy, and some may be delivered as realistic depictions of material spaces. Regardless,

the developers' imagination has a great influence, as well as the central need to construct playable environments (Jones & Osborne, 2020).

When it comes to video game spaces, various relevant terms apply to them, such as *virtual environments*, *mental landscapes*, *interactive landscapes*, and *immersive designs*. Therefore, it is clear that video games have developed a very particular way of reflecting the environment. Their spatial designs are multi-layered, multimodal, complex, immersive, interactive, and are largely dictated by narrative and play. As the player themselves interact with the game mechanics, the virtual space and the story that permeates it are revealed.

According to Ian G.R. Shaw and Joanne P. Sharp, authors of the article "Playing with the future: social irrealism and the politics of aesthetics",

"It is the ludic quality of video games, in which narratives are shown to the player through spatial exploration, rather than being simply told, which separates video games from other types of media" (Shaw & Sharp, 2013).

Viewers' agency could be considered the major aspect that differs video games from any other medium. Games are much closer to a first-person experience where the agency makes the character's actions the player's actions, especially since playing characters in games is often designed to allow us to project ourselves onto them, sometimes even to the point of creating a personal character. The interactive nature of this medium allows one to engage with ideas on a different level. Players do not passively experience the game space, but actively participate in how those landscapes function, progress, and end. To put it differently, an interactor creates meaning out of their engagement with a particular environment. The agency given to players navigating the game world and mechanics, allows them to form their own experience and reshape game environment, even with the landscape parameters being framed by developers, thus players and game creators are co-creating. However, in the case of video games, avatars should also be taken into account as a third party that can affect the viewpoint and the way virtual landscapes are constructed. As Jones and Osborne discuss it,

"This potential for identification with the character changes the composition of virtual landscape, from being a co-construction between body and environment, to a co-construction between body, environment and an imaginative engagement with the body of the avatar" (Jones & Osborne, 2020).

Nevertheless, virtual landscapes are noteworthy because they can have a profound effect on what we think and do. Players have had a real experience playing a video game as they have been actively involved in the entire course of its story. Games that revolve around a certain topic, especially so-called *serious games*, for instance, whose environment and narrative have a connection with a specific historical event, culture, tradition, social group, mental health, etc. have the potential to influence the player's beliefs, and perception of the given subject because they offer an experience.

2.3. Specificity in building a playable game space

Game spaces generate narratives as the player is making sense of them in order to engage with their environments. Reflecting on the role of space in games, Adam Chapman sees it as a container or representation (Chapman, 2016). In turn, Clinical Professor of Psychology Alexander Kriss offers the idea that game worlds function as “a kind of potential space, not fully belonging to either intrapsychic or objective reality but making contact with both” (Kriss, 2016). Espen Aarseth even suggests that “the defining element in video games is spatiality” (Tobin, 2012, p. 44). According to him, in gameplay more essential than time, characters, actions, events, and goals is the spatial exploration and representation as the major motif.

Video games have changed how we perceive space and provide new modes of experiencing it. The concept of *spatial ability* is relevant here, which describes a person's mental power to perceive space be it physical or virtual. Spatial ability is described as “the ability to manipulate visual images mentally”, meaning to be capable of thinking in images, of perceiving, transforming, and creating various aspects of the visual-spatial world (Burnett, Lane, & Dratt, 1979). Another definition offered by Lohman as “the ability to generate, retain, retrieve, and transform well-structured visual images” (Lohman, 1994). Video games have proven to enhance peoples' spatial abilities, however, there is no definite clarity among researchers on what exact spatial factors of the game provide the improved performance.

Space can be classified based on various factors, for example, how an individual experiences it, what are its purposes, or by separating its individual components. When analyzing the game space, Michael Nitsche distinguishes 5 conceptual planes, which reflect how the game space functions and also include the user's position:

- rule-based space (mathematical rules, codes, data at the basis of the game's structure and mechanisms),
- mediated space (presentation of audiovisual space, newly created world),
- fictional space (the part of the game space that the player has imagined, influenced by what he experiences in the game),
- play space (real space with player and gaming system),
- social space (connection with other players) (Nitsche, 2008).

All these planes of the game space are combined and essential for a full-fledged game, while the first three are what essentially form playable mental landscapes.

Some scholars emphasize the expressiveness of game space or *spatial communication* and thus, analyzing these spaces, pay attention to the various intentions for which the space was built. Gregory Whistance-Smith, studying how video game spaces convey a message spatially and how discourses can be provoked by interacting with them, emphasizes that space as a mode of communication in its own right is not highlighted enough. According to him, since game spaces have no physical functionality, they have much more opportunities for expression and communication. He, thereby, distinguishes four kinds of virtual environments based on their intent (while adding that they can be combined in video games):

- a) explorational and inhabitable,
- b) for providing pleasant motion,
- c) for enabling the player to implement certain behaviors,
- d) for teaching new ways of perceiving the world (Whistance-Smith, 2022, p. 3).

As to the latter, game environments that seek to rework the player's perception are relatively rare and are perceived as avant-garde. They are most often difficult to navigate, involve semiotics that are not easy to interpret, or even require learning a new form of perception in order to be able to navigate their spaces.

Authors of *Space Time Play* reinforce the importance of spatial communication in virtual worlds, using terms *environmental storytelling* and *evocative spaces* when referring to video game spaces (Tobin, 2012, p. 57). They create prerequisites for an immersive narrative experience with a player's movement across the map. The plot of the game is inextricably linked with the sculpting of the game settings, which allows the character to go through a

journey and reach a resolution. Game developers also change the rhythm of gameplay through game space attributes.

The main form of engaging with space is navigation or avatar-driven navigation specifically in video games which requires such spatial abilities as mental rotation and perspective-taking. As the navigator progresses through the setting, they generate an object-like 3D arrangement of the environment what could be called a mental map. Game spaces tend to be very complex with many graphical details - orientators, surfaces, textures, coloring - which the player can use as navigation means to read what clues the given environment presents (De Castell, Larios & Jenson, 2019).

As mentioned before, one of the most observable techniques in how game space can convey a message (besides the avatar's options for interaction with the game space) is through the rhythm in which the player moves between different landscapes. If speaking about physical space, this could be applied to the body and how effortless, complex, enjoyable, or unpleasant it is to move or act in a specific environment, then in the case of video games, we sense that through the avatar (Whistance-Smith, 2022). Another spatial communication method is through evocative aspects of the environment or *embedded narratives*. Crucial details of the story are hidden in the game space and can be included in various information channels. Embedded narratives require the player to examine and connect pieces of the storyline and reconstruct the complete narrative.

Regarding playable game spaces, Bo Kampmann Walther separates *playing* from *gaming* as two distinct but interlaced game modes, which together form the concept of gameplay,

Mapping a place through adventurous discovery in order to figure out the stories underneath the space and possibly invent new ones in the same process is all about "playing". Learning to move and advance in a space filled with discrete norms of orientation - meaning that you can do "this" but not "that" - is the art of "gaming" (Tobin, 2012, p. 291).

Interestingly, Walther describes playing as the state of being present in virtual space (presence) and demanding total attention, while gaming as a desire to advance (progression). Presence in the game is related to such widely discussed phenomenological conceptions as *flow* and *immersion*. Along with that, play-space is any setting in which game events take

place, whereas game space consists of rules and an informational network (Tobin, 2012, pp. 291-293).

In the ludic context, the concept of the *magic circle* is used, denoting the playground or a separated world, which is intended for playing out certain acts (Huizinga, 1949, p. 10). The *magic circle* contains its own rules and anticipates replacing the physical reality with the ludic or artificial existence which allows it to generate and provoke reflection of some ideas on another level. Mary Flanagan and Helen Nissenbaum state in their book *Values at Play in Digital Games* that all games express and capture some of the human values and allow playing out specific beliefs and ideas. They argue that “games are engrossing and reach deep parts of the human psyche, they may not only reflect and express but also activate these beliefs and values in powerful ways” (Flanagan and Nissenbaum, 2016, p. 4). The authors put forward a framework of 15 game elements, with the help of which the game creates meaning, namely:

- narrative premise and goals
- characters
- actions in game
- player choice
- rules for interaction with other players and nonplayable characters
- rules for interaction with the environment
- point of view
- hardware
- interface
- game engine and software
- context of play
- rewards
- strategies
- game maps
- aesthetics (ibid, p, 34).

Although all these elements are intertwined, their analysis closely to the context of the game allows to distinguish a bounded range of values. Furthermore, meaning is generated not by individual components of the game, but their mutual interactions, “similar to the syntax of a language, which [...] enables us to understand how words combine to convey meaning through sentences” (ibid, p. 71).

On balance, the spatiality of games is the basis for creating an interactive world and developing a narrative. When building a play space, it is essential to ensure that the player is able not only to move in it and fully operate with all of the game-mechanics embedded in it but also to comprehend what feelings the concrete space is attempting to evoke.

3. METHODOLOGY

In game studies, there are numerous methods to analyzing video games, but when studying the psyche as a playable environment, one of the most applicable is the multimodal methodological approach, as it focuses on all the representational and semiotic means that are used to convey the message and construct a playable virtual mind as gamespace with a corresponding storyline.

3.1. Medium-specific multimodal discourse analyses as a comprehensive method for game studies

Video games are a highly multimodal medium, even considered the most multimodal media according to some scholars. Information is conveyed to the player simultaneously through multiple channels or semiotic modes. The word *mode* itself is ambiguous and is often understood differently in one discipline than in others, however, it is necessary to understand what counts as a mode. Simply put, modes are specific ways of assigning meaning through material channels. Thereby, a mode can be anything – a real or fictional thing, phenomenon, abstraction, etc. As Charles Forceville points out, each medium enables or allows some modes but not others, as their expression depends on the environment in which it occurs (Forceville, 2016, pp. 3-6). In video games, it is possible to study semiotic modes, such as text, speech, images, sounds, layout, haptics, and others. Yet, it should be emphasized that these are not medium-specific modes, as they are also found in other forms of information expression.

Multimodality occurs when different modes form combinations. This allows us to study how different modes, working together, in one semiotic event, create its meaning, moreover, affecting each other both dynamically and unforeseeably (Hawreliak, 2018, p. 3-7). This should be taken into account when performing a multimodal analysis, that is, not so much listing all types of modes manifested in the particular medium, but studying how they are interconnected and influence each other. Another factor that characterizes multimodal analysis is the recognition of the science of semiotics that the perception of semiotic modes (as well as their creation) is related to the cultural, social, and ideological context of the receiver. In other words, a *sign* implies a conscious or unconscious agreement that something has a certain meaning. Therefore, a multimodal approach aims to conduct an analysis of the mechanisms of the existence and construction of semiotic modes, as well as the study of the

relations between the mode, its meaning, and the form of manifestation (phenomena, processes) (Lee, 1989).

In video games, modes construct semiotic systems that communicate meaning. Hence, looking at this medium through the multimodality perspective reveals how meaning unfolds in video games (Hawreliak, 2018, p. 7). Although one of the challenges of a multimodal approach is to ascertain exactly what meaning the recipient will translate as this process is influenced by many factors, we can determine what is the potential meaning even if it is varying and presumptive.

When performing a multimodal analysis, Hawreliak suggests initially looking at each mode separately, then examining how they interlude with each other, and eventually specifying whether all modes within an ensemble work together or create some kind of dissonance (Hawreliak, 2018, p. 39).

3.2. Overview of the fundamental medium-specific video game modes

Due to different modes of expression, we perceive video game narratives in a multi-sensory manner. Jerome Bruner distinguishes three different modes of representation: enactive, iconic, and symbolic (Bruner, 1966). Each of them encodes meaning in a distinguishable way. Enactive (interactive modes) is based on action and assumes that things are learned by doing. Iconic representations are image-based (visual modes), while symbolic representations (texts) are code-based and refer to how abstract information is recorded and encoded. Video games include all these types of representations: they can communicate through still and moving images, written and spoken texts, sound, noise, music, camera manipulation, montage, haptics, as well as game mechanics - a medium-specific mode.

3.2.1. Procedural mode

A computer is not a device for storing information, but rather for processing information; thus a video game that accentuates dynamic information processing will be more responsive, interactive, and well-programmed, utilizing the device's abilities to the utmost (Crawford, 1982, p. 96). Accordingly, the *process* as a successive change of states is a cornerstone of both computer and video games. Moreover, as Ian Bogost points out, procedural systems such as

software are ideal to model processes as they “represent process with process” (Bogost 2007, p. 14).

One of the modes *procedurality* or *procedural mode* which is used in game studies enables analysis of how game mechanics reveal underlying assumptions through rules, feedback, rewards, parameters, various processes, and all procedural content of the game. In addition, any game requires rule-based behavior and puts the player within certain ‘frames’ which should be taken into account when conducting the analysis. In the context of video games, this mode takes the form of a process, which can be any set of actions required to achieve game goals. Meaning is conveyed through a series of processes, so it can be argued that video games use a unique kind of rhetoric, called *procedural rhetoric*. Ian Bogost expresses it as “the art of persuasion through rule-based representations and interactions rather than the spoken word, writing, images, or moving pictures” (Bogost, 2007).

Having said that, rules and processes are always dependent on other types of modes such as visual or auditory. Hence, procedurality as a mode of expression is always tied together with other semiotic forms. Despite this, game procedures, for instance, dodging attacks, are a specific, predetermined game element that shapes a player’s experience, participates in assigning meaning, and consequently fits into the ensemble of game modes (Hawreliac, 2019, pp. 227-233).

3.2.2. Game-mechanics

Video games are a special type of medium that, due to their game-mechanics, require not only the cognitive ability of special intensity but also occasionally physical skill performance from the user. As Järvinen puts it, “both physical as well as mental abilities are required in gaming encounters” (Järvinen, 2007, p. 158). Likewise, the player’s engagement with the game manifests itself both as a conscious interaction with the game interface, namely *diegetic* activity, and the body’s reaction to the gaming space and embodiment (*extradiegetic* activity) (Shinkle, 2005, p. 3). Thus, the player’s body, in a way, becomes transcendent and is re-projected onto the narrative of the game. This is mainly facilitated by such separable and at the same time interdependent elements that constitute a game as game-mechanics and kinesthetic mode.

Although game-mechanics as a distinct mode of the game is quite widely noted in game studies, there is lacking a clear conceptual understanding that would be precisely defined. Game-mechanics can be viewed as a gameplay or feedback mechanism for implementing the underlying rules or elements of play, that drive the player's actions and procedures, namely, the gameplay (Cook, 2005). Game-mechanics as a game mode are related not only to the kinesthetic mode but also to the procedural mode, as they anticipate the action of the agent. Bogost's explanation of game mechanisms indicates that game procedures can be viewed as "rule-based symbolic manipulations" (Bogost, 2007). Also, they are closely connected to the rules of the game. Some game researchers use this term to describe the entire set of game rules (Lundgren & Björk, 2003; Järvinen 2008) or as the basic elements underlying game software and design, such as Rouse's definition of game-mechanics as "the guts of a design document" (Rouse, 2005, p. 310).

Taking into account the game system, hardware, and player insights, Miguel Sicart defines game-mechanics from object-oriented programming as "methods invoked by agents, designed for interaction with the game state" (Sicart, 2008). Such all-encompassing definition emphasizes all three components as equally related, meaning player's interactions with the interface and hardware that are constrained by the game rules. It should be noted, though, that the agent that activates some game-mechanism can be not only a player but also a computer as an AI agent.

Essentially, game-mechanics determine the nature of actions that are performed in the game. They are best expressed with verbs such as to run, to explore, to accumulate, to attack, to dodge, etc. and they directly affect the game state. Game-mechanics can be divided into core mechanics (as the most repeated) as well as primary mechanics (prerequisites to achieving the goal of the game) and secondary mechanics (rarer or combined with primary ones) (Järvinen, 2008).

This game mode also serves as an instrument for reaching the synaesthetic objectives of the game (Sicart, 2008). The design of the game system determines what actions and, on a larger scale, what procedures the player must execute during the game, which ultimately dictates what experience one has gained. Game-mechanics also facilitate the process of identification and self-projection in the game environment, along with determining the intended emotional state and self-esteem, based on what rules constrain the mechanisms. For example, the player might need to feel empowered and hence be provided with 'aggression' mechanics or, on the

contrary, vulnerable with the main challenge to dodge and reach the resolution of the game while unnoticed by the enemy.

Considering the construction of the game-mechanics and their expressiveness potential, they should be analyzed related to the logic behind them and the operational context. Noah Wardrip-Fruin, studying video games and the meanings they communicate, focuses only on medium-specific modes, namely the ludic means of communication. He points out that the basis of each game-mechanics is *operational logic*, for example, a combination of movement physics and collision logic, which allows the execution of a specific action in the game environment. Wardrip-Fruin also came up with the concept of *playable models*, meaning procedural representations, such as a playable model of space, of character, of combat, and such. He theorizes that by using some logic typical to the game genre such as spatial logic and combining it with a specific environment such as a domestic environment, a certain message is conveyed. Operational logics and playable models, skillfully used in a distinct cultural context, can promote the game's potential to be a means for cultural discourse. As an example, Wardrip-Fruin cites the game *Papers, Please!* (Pope, 2013), which, thanks to a refined pattern-matching logic, functions as a provocative cultural metaphor and inspires reflection on ethics (Wardrip-Fruin, 2019).

3.2.3. Visual mode and graphics

The graphical rendering power of a computer brings visual forms as one of the main communicative modes and the quality of games tends to be rated largely by how beautiful and/or smooth the visuals are in a game. It is stylistic preferences such as color range, lines, shapes, proportions of characters, degree of realism, that give the game uniqueness and makes it recognizable. Although a game's graphics set the aesthetics and emotional tone of the game, no less significant is their task of clarity - what is strived to be represented - so that the player can quickly perceive this data and intuitively operate in the enacted reality of the game.

Games can consist of numerous visual inputs spread throughout the game space. Ramona Feriozzi and Alessandra Meschini apply the same analysis methods that are used in fine arts and study the graphics of video games by comparative methodology (Feriozzi & Meschini, 2020). Tonal value (such as brightness levels) can also be applied to the visual images of

video games, which creates the effect of image depth and indicates where the gaze should be focused. Likewise, visual mode communicates depending on the arrangement of elements in the landscape and the compositional rules used, as well as proportions and silhouettes, where one object is accentuated more than others. All these factors of the construction of visuals are essential for the player to find the direction of the path, to understand who are companions and who are enemies, what puzzles should be solved, and so on.

The appearance of the game is significantly affected by its dimensionality. Two-dimensional games position the action of the game along a single plane and the approach of creating their graphics has been influenced by early 20th-century animation drawing techniques, such as how to de-focus the player's attention from the background of the environment (Perron & Wolf, 2014, p. 93). Three-dimensional space, on the other hand, simulates depth and offers free movement, and explorable space by modeling three-dimensional landscapes, characters, and objects. The simulation of depth and breadth produces an illusion of freedom and openness.

The visual construction of the game world also includes the creation of a visual perspective. The first-person point of view intends that the gameworld is seen through the character's eyes, that is, the screen equals the player's field of vision. The less frequently used second-person perspective shows the character through the eyes of another character, while the third-person point of view is used in games where the player must be able to see his character, for example, from over-the-shoulder or rear view. Perspective shapes the player's experience and how the player perceives himself within the field of the game and what role is assigned to him (Perron & Wolf, 2014).

Expressly visual communication can happen in such an artistic technique as pre-scripted *cutscenes*, also referred to as 'cinematics' or 'in-game movies', which are sometimes used in video games. They take away the player's control for a moment and can be viewed as a small movie embedded in the game's narrative. However, occasionally even in these episodes, the player is allowed certain actions, for instance, altering the point of view or being asked to press a key to "launch" the cutscene (for example, in dialogue scenes). Giles Hooper distinguishes three types of cut-scenes: cinematic (without any player's agency), viewpoint (with camera control), and fixed dialogue (required to start interaction) (Giles Hooper, 2018, p. 117).

Video games as a medium are often compared to cinematography. Both films and digital games are visual media, both include style, continuity, motion, and composition and in both visual structure is a prerequisite for good storytelling (Newman, 2013, p. 91). Any pictorial art form, including video games, executes such visual ideas that communicate the intended point of view (ibid, p. 102). At the same time, as film and video game creator Bruce Block states, video games, unlike movies, are adaptable, that is, the player can rearrange the visual features and the layout of the narrative, which the movie spectator cannot change. Block also emphasizes that visual information alone cannot express a narrative - it requires other modes of expression, but visual effects can create mood, intensity and evoke an emotional response (Block, 2001).

3.2.4. Auditory mode

Sound undoubtedly plays an integral role in video games, as it complements the visuality of the space and “synchronizes the kinetic link between the player and game through instant feedback”. It acts as a connector between visual, kinesthetic, and auditory modes (Tobin, 2012, p. 111).

Creating music and sound effects for video games is usually more complex than, for instance, film soundtracks and involves the creation of an audio design document. Most often, referring to Karen Collins, the design of sound modes begins with determining the general atmosphere and style of the game that corresponds to the aesthetics. Then clarifying their functionality and how the sound interacts with the gameplay, or “the game-specific behavior of audio” (Collins, 2008, p. 90). Sound mode depends on the overall design of the game - its graphics, narrative, and rules because only after the creation of these elements and the identification of game-state modifications it is attainable to determine which episodes are more suited for ambient music and which require silence. In the creation of sound effects, game landscapes, objects, personalities of various characters, progress, pace, tension and release moments, intended actions, etc. are taken into account.

It could be argued that it is the audio element of the game that plays a decisive role in making the rhythm of the game with the creation of distinct emotional peaks. For this purpose, music cue sheets are often created, which enable music composers to organize the soundtrack, for example, guided by the necessary mood of the music. Whereas programmers are shown at which moments of the game the specific files should be included. In addition, it is substantial

to take into account the player’s actions with the controls, in other words, the kinesthetic modes, where each action should also be reflected in the corresponding sound effects of the game (Collins, 2008).

Area Cues				
File no.	File name	Action	Time	Notes
1	dungeon_01	Nonlooped	2:07	Slightly dramatic or dark mood
2	Caves_01	Looped	1:37	Scarier, more foreboding than dungeon but less somber than King’s Grave
3	Desert_01	Nonlooped	1:57	Egyptian/vaguely Arabic
4	Mystical_01	Nonlooped	1:49	Places meant to be very mystical
5	Gothic_01	Nonlooped	2:00	Darkness filled with metallic elements

Figure 4: “Jeff Simon’s music cue sheet from MMORPG *Earth Eternal*, 2007” (Collins, 2008, p. 91)

As already mentioned above, the auditory mode in video games is closely related to creating the desired emotions, therefore most video game music designers create an emotion map of the game, which allows the creation of effective audio. Each game landscape may demand a different underlying emotion and mood, such as for wandering - inspirational or mystical music might be reasonable while when compelled to flee from an enemy adrenaline-inducing music is indispensable. In-game music can serve to prepare the player for certain actions, hence potentially reducing the amount of visual details. However, the sound can also mislead the player into assuming that a certain area is safe. Ambient sounds in games have a psychological effect of affecting the player and enriching what is seen on the screen with the player’s own imagination, using certain techniques to cause specific emotions, such as fear, vulnerability, anxiety, or similarly - positive feelings (Collins, 2008, p. 94).

The way video games are produced and played, specifically, 3D video games make them well-suited to the benefits of *multi-channel audio* (Goodwin, 2009). This term is used to refer to techniques designed to project sound to the listener from multiple directions, creating a surround sound effect - spatial audio. Virtual Surround Sound (VSS), known as a software-based technology, strives to imitate true surround sounds. On the whole, this approach has been well-received by gamers (Ciesla, 2022). In general, the purpose of multichannel audio is to enhance the listener’s experience of multimedia content by fostering a sense of immersion. Ideally, spatial sound signals should respond dynamically to the player’s input. Spatial audio attributes such as distance accuracy, sense of depth and width, and envelopment (which refers to what extent the player feels enveloped by the sonic setting)

are used to define the spatial properties of audio (Joe Rees-Jones and Damian T. Murphy, 2018, p. 143). Interestingly, unlike visual information, which always remains in the virtual realm in video games, sound transcends the virtual space and enters the physical as well (Collins 2013, p. 42).

A study by Joe Rees-Jones and Damian T. Murphy, which aimed to discover how influential multichannel audio is in video games for player perception, immersion, and gameplay advancement, confirmed that players favored games with extensive use of spatial audio, while games with mono sound were least preferred. In addition, high-quality multichannel audio contributed to players' navigation and localization abilities (Joe Rees-Jones and Damian T. Murphy, 2018).

Having said that, there are no well-developed methodologies to discuss the player-sound mode connection or the interactive sound experience in video games, where not only listening but physical interaction with music is of particular importance (Collins, 2013). Possibly interactivity as such is a challenging study object of new media or as Karen Collins puts it, "there are good reasons that the player has been absent from many approaches to sound in media: the experiential aspect of interactivity is highly contested" (Collins, 2013, p. 2).

3.2.5. Textual mode and language

Video games have also borrowed from older media forms the use of words, text, and dialogue in expanding their narratives. Greg M. Smith in his article *Computer Games Have Words, Too: Dialogue Conventions in Final Fantasy VII*, emphasizes that the function of text in video games should become a more significant element of current criticism and future game design (Smith, 2002).

Werner Wolf in game studies uses *reduced paratextuality*, meaning verbal and spatially connected (peritextual) elements to describe such game-related texts as intro sequences, menus, game credits, and others. He points out that although they are usually supportive they can also be central (Wolf, 2006). This framework is useful for close analysis of games and is suited for in-depth research as it allows for the consideration of tangible elements spatially associated with a cultural artifact and their potential impact on audience perception. However, Švelch recommends treating paratextuality "as a link between a text and the surrounding

socio-historical reality, emphasizing that paratextuality is often accompanied by other (trans)textual qualities” (Švelch, 2020).

In video games, spoken or textual monologues or dialogues, as some of the language modes used, should be made particularly vivid and thoughtful as it is known that players are frequently impatient with long interludes that could ‘knock’ the player out of the state of flow. Likewise, in revealing the backstory, proper timing is also important to maintain an exciting dynamic in the unraveling of the plot and to not overwhelm the player (Smith, 2002).

Verbal mode in video games can function simply as indicators of what tasks the player needs to complete, or as clues where the provided text information allows to solve, for example, a puzzle. But along with that, textual modes are often used to introduce events that happened before the player entered the game world. Part of the phenomenon of video games lies in the passion of players to learn about the game’s *lore* or its “fictional past” (Ford, 2021). Lore is a form of myth: it consists of an ensemble of all the game modes that contextualize the game world. Lore gives the player a sensation that the game world and its events existed long before their participation and will continue to exist after (Anderson, 2019). Although lore is also produced through audiovisual and procedural design elements, the most explicit information players can receive from textual modes. For instance, in the famous game *World of Warcraft*, as in many others, lore emerges from the quest descriptions (also item descriptions). Frequently, games also use a written or spoken prologue, which prepares the player for the perception of the game’s content. Thus, it can be said that the exploration of lore through textual clues can be a respite from the ludic and more active forms of engagement with the gameworld.

3.2.6. Kinesthetic mode

Interestingly, in the gaming process, the primary action takes place in one sphere, while its consequences (result) or derived action appears in another. There is a correlation between the physical actions taken by the player and what materializes in the game environment. Veli-Matti Karhulati believes that although *vicarious kinesthetics* is not the only available mode of engaging with the game, it is the defining mode of a video game and specifies that “a gaming challenge is kinesthetic if altering the input device alters the nontrivial effort that is required to overcome it” (Karhulahti, 2013). Steve Swink also defines a video game as “the tactile, kinesthetic sense of manipulating a virtual object” (Swink 2009, p. xiii). The

kinesthetic mode requires psychomotor skills and it is this aspect that characterizes video games as an extraordinary medium in visual and performative culture.

Haptics researchers emphasize the potential of touch to act cybernetically as a medium for processing and representing information (Bliss, 1970). Kinesthetics or the haptic modality in playing video games does not necessarily manifest itself as the movements of the whole human body, but rather in the converting options of the input device. Haptics, which includes both kinesthetic and tactile perception, is mainly used in video games to create a sense of touch and enhance feedback that is primarily provided in another modality (Nordvall, 2013). However, the feedback could also be in the simple form of a rumble or a vibration of a controller, thus encouraging a deeper immersion (Morelli, 2016).

The design of the input device determines the actions of the player. The player's body can recall and even learn to forget to remember (turning them into subconscious moves) illogical input arrangements such as different key combinations for different actions that may need to be performed at high speed and under pressure. Likewise, the player's actions, such as pressing a key and how effortless/demanding it is to perform, affect the experience, rhythm, and flow of the game. For example, when experiencing resistance, frustration may arise in the player, as an unexpected or intended part of the game experience (for example, a fight with a boss may be envisioned as a difficult part of the game to complete). Yet, haptic feedback is only creating an illusion of force which is called pseudo-haptic feedback (Lécuyer, Burkhardt & Tan, 2008).

Kinesthetic modality is closely related to the player's sense of control. Kinesthetic immersion can be viewed from two different forms of input: *symbolic* and *symbiotic*. Symbolic control displays itself in player interaction with keys, controller buttons, computer mouse, etc., and does not have mimetic relationships between player-avatar movements. Symbiotic or mimetic control, on the other hand, anticipates the player's actions being mapped onto the avatar (Calleja, 2011, p. 63). Most games utilize a symbolic control mechanism for kinesthetic immersion, but games with motion-sensor usage, such as input technology *Kinect*, are also increasingly common.

Nevertheless, digital games authorize the player to experience spectacular movements unattainable in real life and offer kinesthetic pleasure arising from the combination of their performance and cinematic visuals. If one masters to skillfully manipulate the offered control

schemes, they awaken kinesthetic sensations, which let to perceive the actions performed by the avatar as experienced by the player himself (Calleja, 2011).

Summarizing, modern video games as complex productions can communicate ideas through more familiar literary devices such as cinematics, language, sound, and imagery, as well as through tactility and interaction - distinctive features of the medium which is why they require a holistic approach in their analysis. In addition, some message may be built into the video game by game designers, however, it should be considered that due to the medium's sophistication, the player may decode it differently than intended. That might also be dependent on one's purpose for playing a game - to learn something, to steer away boredom, to use it as a form of escapism, etc. Furthermore, the game itself is not a message (Bogost, 2007). The true meaning develops in the process of interplay between the player and the game world.

3.3. Case study analyses

In order to study the psyche as a playable construct, three different video games were selected, including both single-author work and larger-scale games, which would enable drawing more objective and accurate conclusions from a wider spectrum of case studies. Likewise, the games fit into diverse genres: an action-adventure game, a puzzle game, and a walking simulator. It should be noted that two of the three games are described as horror or psychological thriller games and come with a warning about mature content requiring a player's stable mental health. For all the selected games, the human psyche acts as the central game space, which entitles to experience different mental or mind landscapes.

Before the actual analysis, each of the games was played through and this process recorded, hence each game will be studied after one arbitrary gameplay, acknowledging that possibly other types of storyplaying and corresponding scenarios would have been probable. The aim is to examine the games, taking into account as many game modes as possible (and their mutual relations), as well as referring to the previously developed theoretical framework on the structure of the psyche and playable game environments as a whole. The main focus will be on the visual representation of psyche, and sonic mode, as well as on game-mechanics, rules, and procedural mode, which involves influencing and interacting with the game environment. In the process of analysis, it is necessary to determine what kind of mental landscapes are incorporated in the game space, if/how the environment itself expresses any

kind of communication, and from what perspectives the psyche is represented (for instance, as something bright/terrifying/nebulous). In order to achieve this, an explicit characterization of the used audio-visual aesthetic techniques will be developed and the key mechanics for each game identified as their genres and structures differ. Finally, all modes of the given game will be examined as a coherent or conceivably dissonant set.

Eventually, the obtained results will be evaluated, by conduction of comparative analysis, and key findings put forward, seeking to answer the primary research question by what methods video games achieve the psyche as a playable and embodied construct. Along with this, it is also necessary to consider how the human mind is represented and discuss whether and why these types of games have the potential to encourage empathy and self-analysis based on new findings.

4. VIDEO GAMES DEPICTING THE PSYCHE: MULTIMODAL DISCOURSE ANALYSES

4.1. *Nevermind*

This case study was chosen for its serious content and gameplay that takes place entirely within the human psyche. The video game offers to partake the role of a fictional doctor who can access people's minds just like in a VR experience and affect them. In this case study, the psyche is reflected in an aesthetic that most resembles surrealist art or a dream-like landscapes, illogically combined from familiar, abstract, symbolic, and distorted objects. It is through various modes and interactions with the psychic environment that its hidden traumas and protective mechanisms of the psyche are exposed. This game envisages delving into the expanse of the psyche through multisensory stimuli, offering an immersive, embodied experience in the virtual space of the simulated psyches.

The video game *Nevermind* (2015) by *Flying Mollusk*, LLC puts the player in the role of a neuroprober, analyzing the minds of trauma patients and helping them recover from traumatic past experiences and PTSD. This game fits into the genre of adventure, puzzle, and psychological horror, depicting the human mind as a complex, chaotic, and frightening place. Moreover, the creators of the game have supplemented *Nevermind* with biofeedback technology, detecting a player's anxiety and fears which affect the gameplay. This is achieved by connecting additional hardware - a heart rate sensor and a webcam. The responsive gameplay experience is manifested by the game detecting significant changes in heart rate and analyzing facial expressions through *Affectiva's Affdex* technology (based on facial-reaction data), and, in those moments, immediately intensifying the course of the game. As the authors of the game themselves state, "If you let your fears get the best of you, the game becomes harder. If you're able to calm yourself in the face of terror, the game will be more forgiving" (Flying Mollusk, 2015).

The designers of the game have chosen the human mind as the main setting of the game, highlighting its dark and frightening aspects, emphasizing that "the greatest enemy is the one inside your head" (ibid). By choosing the surreal subconscious as the game environment and creating different mental landscapes, the game developers have opened the door to unlimited imagination of what could inhibit this subconscious and how it impacts the functioning of the human mind. Furthermore, the mind does not allow the player to solve the issues easily, often

uncovering new complications and resisting in unexpected ways, forcing the player to battle with the patients' psyches.

In *Nevermind*, the player as a neuroprober - a doctor similar to a neuroscientist or psychotherapist who uses special technology (although the game does not explain in detail what exactly is this device) to enter people's psyches, is physically located at the Neurostalgia institute. Their job is to treat patients who cannot cope with their past psychological traumas. By choosing a specific patient, designated by a number, the player must travel to a specially designed room that transports him to the patient's psyche. This is followed by an image of what looks like human brain neurons, and a voice-over narrative of the patient's story, that is, their version of what once happened to them. The player then finds themselves in the human psyche, which can appear in a variety of manifestations and is highly influenced by the patient's memories. In the mind of every patient, both scenes of a joyful atmosphere, as well as horrid and alarming corners are depicted, and the psyche is always portrayed as absent from any people.

The game requires the player to perform various procedures. All procedures related to the game are inseparable from the game environment. The necessary actions should always be performed with the things found in the setting of the psyche, which, in turn, interact with other objects there. Also, all the clues have to be uncovered in the mental landscapes created by the game, which are most often ludicrous, such as the number combination of the pin code can be guessed by counting the number of rats, syringes, and bottles located in the room.

The main procedural modes of *Nevermind* are the exploration of the psyche and the search for clues that would indicate what traumatic events had happened in the patient's past, the collection of fragments of memories, performing dexterity against mind resistance, and the creation of a unified narrative from what is discovered. The more such processes the player performs, the clearer the traumatic experience that the patient has gone through becomes. However, the most dominant procedural mode, which is incorporated in *Nevermind* and which is not distinctly manifested as a specific game-mechanic, is the effort to avoid various strange, surreal objects that aim to injure, by simply staying out of their sight. Not following this procedure is also the only prerequisite to losing in this game if the player fails to dodge too many times.

As the author of the book *Video Gamers* Gary Crawford has expressed it, video games provide an embodied experience that is corporeal, sensory and psychological (Crawford,

2012, p. 85). In *Nevermind* that is particularly evident in an unusual game procedure that is primarily based on the auditory mode, which involves listening closely to which ear of the headphones the sound of a car horn honks loudest in order to know which direction to take and be able to get out of the maze. This episode is a prime example of harmonious mode collaboration as it highlights the procedural and auditory modes, which strongly involve the sensations of the body. In other words, the game requires a fully embodied experience in a disembodied but multimodal simulation of the mind. In a way, it suggests that the processes taking place in the psyche can only be understood by involving multisensory stimuli. Respectively, without bodily senses, it is impossible to fully experience the world created by the psyche and the processes taking place in it.

In *Nevermind*, the dualism of mind and body largely disappears and, although the game is made in first person graphical perspective, where no body is visible, the way the psyche is explored is very corporeal, not only in this example, where the player has to rely only on the sense of hearing, but also in other episodes of the game where one has to climb stairs, avoid being cut by blades, carry some objects, etc. Hence, the Cartesian mind-body split which is explained in the first chapter of this work can be overcome in video games through embodied mechanics as demonstrated in this example. This statement is also backed by the formulation of the sociologist García Selga that embodiment allows us to overpower the Cartesian oppositions of mind and body, where the symbolic and the material, the subject and the object, merge (Selgas, 1994, p. 41). Therefore, video game experiences - that happen on the screen, in the mind, and also inevitably haptically - call into question the assumption that we enter cyberspace/virtual space disembodied as we still experience them through our bodies.

A large part of the procedures for the gameplay is somewhat silly or absurdly designed: in the psyche of patient #412, it is required to throw three coins, obtained by depositing cans, into a fountain with a title “Throw Your Future in the Fire and Return Changed”. Therefore, it is necessary to wander around the empty city for a long time, open all the trash cans, and throw the cans one by one at the deposit machine. As soon as three coins are tossed, an explosion is heard and the environment changes drastically, indicating that the player has reached the next stage of the game. Later, in the same patient’s psyche, absurd procedures continue when it is crucial to find a coin in the mouth of a blood-stained mannequin lying on the street, which opens by stabbing it in the arm with a knife. Similarly, IntroSim’s psyche simulator requires picking up pieces of bread in the forest, carrying and placing them on massive animal statues made of stone. On the one hand, these types of procedures are relatively unexciting, but at the

same time, the designers of the game may have desired to point out with the help of such procedural modes how absurd and enigmatic our psyche sometimes works, where elements irrelevant to reality sometimes connect, and thus exactly this type of procedures are applicable to the psyche game space. Another effect attained with absurd procedural modes is drawing attention to the designed audiovisual atmosphere, which, in this case, conveys more details than game-mechanics or procedural modes.

	Procedural mode	Game-mechanics	Visual mode and graphics	Auditory mode	Textual mode and language	Kinesthetic mode
<i>Nevermind</i>	<ul style="list-style-type: none"> • “traveling” to patients’ minds • exploring the psyche • combating with the mind • collecting fragments of patients’ memories • piecing together each patient’s traumatic narrative 	<ul style="list-style-type: none"> • walking • collecting items • carrying • solving puzzles • shooting • interacting • clicking and dragging • dodging 	<ul style="list-style-type: none"> • haunted forest filled with unusual statues • an abandoned city in depressing tones full of mannequins • a distorted childhood house • ghostly amusement park 	<ul style="list-style-type: none"> • dark ambient music • mysterious whispers • baby cries and laughs • people shouting clues • random, out of place noises • creepy doll-house music • gunfire 	<ul style="list-style-type: none"> • patient descriptions • patients telling of a traumatic experience • patients’ revelations after resolving past traumas • subtitles for what is being said • an explanation of how you want to interact, e.g. “push” • writings on walls/streets 	<ul style="list-style-type: none"> • using hardware to navigate and move • listening to which side of the headphones the horn is blowing to escape the maze • holding the right click of the mouse to carry an item • allowing the webcam and heart rate sensor to read the sensations

Figure 5: Mode matrix of *Nevermind* case study (Source: created by the author)

In *Nevermind*, the human psyche is visually represented in a paradoxical dream-like, illogical manner, resembling the Surrealists’ paintings that were also most often lacking human representations (at least in their natural form) but depicted ensembles of various unrelated objects, creatures, and symbols. It is not a big surprise that video games also take a similar practice or are consciously or unconsciously inspired by this modernist art movement, given that it was also closely related to the unleashing of the psyche in terms of psychic automatism, where artists believed they were thereby allowing their minds to express art created by unconscious impulses. Instead of realism or formalism, the Surrealists proposed an aesthetic of the ‘miraculous’ found in representations of ‘surreality’: imaginary combinations of figurative or abstracted motifs and various materials, initiated by unconscious impulses. Different methods were used to untie them - writing or drawing in trance (“psychic automatism”), further development of randomly found colors and shapes, but also following irrational imagination. What is interesting in the context of this work, surrealists were influenced by the psychoanalysis of the time, most of all Sigmund Freud’s teaching about the unconscious, interpreting the symbolism of his patients’ dreams. The incoherent images of dreams became a kind of ideal of attainable surreality (Brodskaia, 2018; Waldberg, 1965). Similarly, *Nevermind*’s images and motifs, as well as objects are filled with landscape, floral, animalistic, urban, technological, etc. more or less identifiable motifs.

Since video game visuals are made by a moving picture as opposed to static images, game creators have made the game space frequently shift and get distorted as the player uncovers more and more of its environment. However, simple photos are also repeatedly used as an essential element in the game. The task of each level, or patient, is to collect ten fragments of the traumatic memories, which are visually represented in evocative photographs that are scattered in the game space, and then to select five that actually resonate with the traumatic events, discarding the rest as delusions of the mind. Photos as a visual element in the game are also used when neuroscientists' patients are explaining what is depressing them and a slideshow with various associative pictures appears, somewhat illustrating the traumatic events of their past.

Client IntroSim, which is a simulated mindscape, is made for the new neuroscientists' onboarding. Their trauma is based on the German fairytale of Hansel and Gretel, where they get taken to a forest and abandoned there. *Nevermind* offers to resolve Hansel's post-traumatic experiences as a test patient. In Hansel's mind, the game's visual modes are bewildering by lacking any sense and by their eccentricity. The player is led straight from a sunny backyard garden into a dark, haunted forest as he walks out of the yard. While in the sunny garden setting, apart from a few toys, bread, and cupcakes strewn on the ground, nothing is rendered out of the ordinary, exploration of the game space reveals visual landscapes that are increasingly difficult to comprehend. In the forest, a player can discover trees on which naked baby dolls hang and fall, other mutant trees as if made of jelly, stuffed animals, and giant candies on which ants swarm. At the forest, the player eventually arrives at a witch's house constructed of sweets, which is depicted with a colorful checkered floor, from which spears in the form of candy sticks shoot out, while giant cupcakes, remains of animal sacrifices, and cages are placed along the walls. Passing through the witch's house, the neuroprober finds himself in a seemingly endless furnace, from the walls of which many arms reach out and try to grab him. Through the distorted furnace, the neuroprober slides up like in an elevator, until finds himself riding a boat through a mysterious tunnel, lit with torches and decorated animal statues. The boat brings the neuroscientist back to the sunny garden, where the found memory fragments (photographs) are located and he can unravel the patient's traumatic events based on the scenes that were seen.

As illustrated by this complex and contrasting psychic journey, a person must go through dark and frightening episodes to resolve their past traumatic experiences, while simultaneously opposing the mind's resistance to accessing painful and enlightening fragments of memories.

The psyche of client #251, who has scopophobia (a morbid fear of being observed) since her mother's death and has no memory of the traumatic past events, reveals visual scenes that primarily take place in three different recognizable locations: childhood home, garage, and church, all of which are somehow deformed and unstable in shape. In the psyche, the visual mode helps recover fragments of traumatic memories and visually demonstrates the patient's phobia of stares, as well as strange evocative elements such as milk cartons. Initially, the player is located in a backyard, surrounded by countless replicas of houses stacked side by side as well as piled on top of each other, creating a dream-like visual effect. The only open door leads into a seemingly normal house with a living room, kitchen, and parents' bedroom. The player's perspective is presumably modeled after a child's point of view, as eye level extends slightly above the doorknobs and the stairs seem infinitely tall. Upon entering the parents' bedroom, there are envelopes with unpaid bills strewn everywhere and a sign on the wall that reads "To see the dark you must kill the light", possibly functioning both as a reference to the patient's denial, believing she had a great childhood, and as a game clue. When the light in the room gets turned off, a gunshot rings out and the room, as well as the whole game environment, alters instantly. The wall and carpet are now covered in blood, and there are clues on the walls - three paintings of a cow in a pasture, a framed gun permit, and a defaced photo of her parents' wedding. The stairs leading to the bedroom have also changed: they are now crooked, rollercoaster-like, and lead into a blood-stained, vandalized corridor. When entering the kitchen, something similar to a brain is baking in the oven, milk is spilled on the floor, flies are flying around, and the refrigerator is stained with blood. Opening it, the neuroprober finds himself in a huge milk warehouse, where countless black sacks hang from the ceiling between the shelves, with some bodies writhing in them. The house's living room is lit only by an old TV that doesn't show anything and giant jigsaw pieces are strewn across the floor (an indication of the patient's reference in the introduction to playing a jigsaw with her father), and the player is "watched" by giant heads placed on stone columns, rotating around their axis. On the wall, there is a stuffed cow and two framed child drawings. In one of them, the father is holding bills, while the child is holding a jigsaw, whereas, in the other, parents and a child are depicted, where the father's head is smeared with red paint. In the house, all the windows and glass surfaces look like they have been shot through with bullets. Through the house's garage, the player is thrust into a labyrinthine tunnel made of rusty car parts covered with blood. Dead ends in the tunnel contain random objects, such as giant milk cartons. Suddenly, a rusty car drives out of nowhere in the tunnel, with the patient's father

dead in the driver's seat (previously, the patient had stated, in her intro, that her father died in a car accident when she was very young). At the end of the car maze, or tunnel is a massive, graphic mouth, which leads to an abstractly designed space surrounded by many large, bald, crying, and screaming heads instead of walls. The last available game setting in this level is the church, which is accessed by the same spiral staircase that led from the bedroom to the corridor. The church hall has combined elements from a wide variety of locations: an ordinary living room, nature, and an actual church. For instance, stained-glass windows and church pews can be seen, while, at the same time, there is also a shelf with a milk carton, night lamps, and a mirror, while the altar area is covered with grass and a stream that washes around a coffin buried in the ground. Right next to it, there is a water mill made of stone, which, when activated, opens a large eye in its center. In the pews, sit many people dressed in identical black suits, with white masks instead of faces and voids instead of eyes. As the player moves around the room, all the people sitting on the benches follow with blank stares. When exiting the church, the spiral staircase is now colored electric blue and brings the player back to the starting point.

This patient's mind represents that she has no memories of the real events of the past, namely the suicide of her father, which the patient herself had seen with her own eyes as a child. This incident has traumatized her to such an extent that her psyche has managed to push it out of consciousness, also with the help of lies from her relatives. Nonetheless, the narrative shows that the symptoms of the trauma manifest in her scopophobia, in the unpleasant intuition that people are lying to her and a hunch that she has been living in an illusion. It is this symptom, the specific fear, that is the starting point from which the player begins to unravel why she has such tense fear and what is its cause.

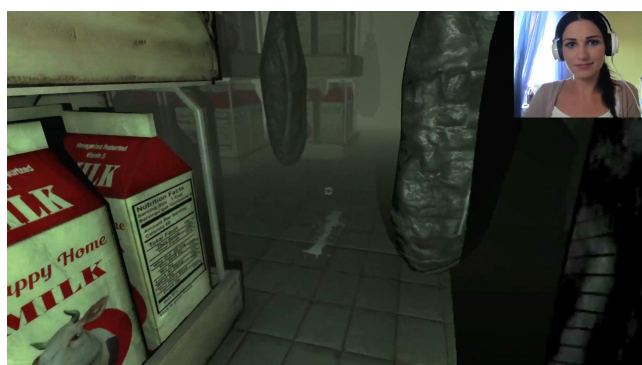


Figure 6: "The psyche of client #251 in *Nevermind*." Flying Mollusk, 2015.
Author's screenshot. January 21, 2023.

Client #418 is a homeless individual, whose psyche depicts life on the street, inhabited by mannequins instead of people, which, in the first episode, are located only in shop windows, whereas in later episodes are scattered both on the street and inside the buildings. Initially, the player is located under a bridge, in a sunny industrial city. Yet, a gray toned, gloomy filter is applied to the visual representation, which, despite the sunny environment, creates a peculiar contrast and a depressing atmosphere. Visually, the emphasis is mainly on various trash cans, which contain rats, cans, various weapons, and cardboard posters with inscriptions. As soon as certain procedures are completed, an explosion can be seen and heard, followed by a roll of patient's flashbacks, which are visually represented in unclear images (skulls, sandbags, gas cans, corpses, and other images), which vaguely indicate violence. The next episode of this psyche takes place in the same setting, but now it is set at night in bright red, haunting tones. The visual representation attempts to depict a surreal battlefield with different techniques. Fire can be seen coming out of the garbage cans, which were previously spotlighted, as well as smoke, while the facades of buildings are unfolded as if they were made of plasticine, and gigantic hands protrude from their windows and roofs. The player's movement maneuvers are restricted by barricades made of black-stained mannequins and metal barrels. Now the urban environment is filled with white apparitions, in the form of different people, which display the people killed by the soldier, who haunt him at every step. The player is directed to a basement, where a group of gilded mannequins can be seen gathered around a suitcase hanging in the air with a medical cross on it, which contains colorful drugs. When interacting with drugs, a psychedelic illusion is produced by swinging the camera angle and creating a blurry view, which gives the impression that one is under the influence of drugs. References to narcotics are also seen in other episodes, which may imply another issue in the patient's life, though, at the moment of final revelation, it is not clear whether the client used them or not. The third episode takes the player back to the starting point under the bridge, where the homeless man is most likely settled in reality, but now the space of the psyche is depicted in dark blue tones, during a heavy downpour. Mannequins are still standing everywhere and the windows of buildings and street lamps are constantly flashing, creating an anxious feeling. The only zone the player is permitted to explore at this point is a building where one has to go down a very long corridor, followed by a similar but winding hallway that leads to a 1930s-style hotel lobby. The hotel has countless open-plan floors and when opening the door of each room, a white phantom can be seen standing there. After performing several procedures, the interior of the hotel becomes completely dark with a bright red staircase and all the many ghosts have come out of the rooms and are looming

above. The only way out of the building is a falling elevator, where strangely the player initially finds himself in a shaft standing above it, but falls under the elevator until finally hitting a tiled floor with a pile of multicolored drugs on it. The last episode of this patient's psyche again visually portrays the same sunny city as at the beginning, only in the mood of the afternoon. Now there is an odd passage in the city, above which a glowing inscription "Carnival" can be seen. When entering the carnival, it is still empty of people - instead there are mannequins - although all the attractions are operating. As the patient experiences another quick flashback in the form of photographs, the carnival territory is surrounded by darkness, moving dummies, and apparitions.

This level, or the patient's psyche, displays how a person struggles every day with flashbacks of his terrible experience in the war and his guilt of what damage he has induced, even though he originally had a good purpose - to save the world. Along with that, it is reflected how this person unable to readjust and recover gets into the use of drugs, which slightly and for a short time cheers up the gloomy reality in which he is stuck. For individuals with military-related trauma, it is often difficult to treat post-traumatic stress disorder (PTSD) due to their avoidance behaviors. As seen in the video game, guilt is often at the root of it, i.e. guilt over whether or not the combat veteran did the morally right thing and why they survived while their fellow combatants did not is a common emotion that plagues these individuals (Schuman, Lawrence & Pope, 2019).

In this game, visual modes function as the most effective way of illustrating the psyche because various visual symbols and elements from patients' lives help to mirror the reality that manifests itself in the psyche of each person. Although, in general, the psyche in the game is graphically represented more like memories or a distorted reality that rapidly alters shape and state as if by magic, separate episodes and settings appear far from possible in reality, are highly conceptual and combined from seemingly incompatible elements of mind and memories. In this sense, the portrayal of the psyche offered by *Nevermind* could very well be compared to dreams as we encounter them in sleep. Here it is necessary to refer to the first chapter of this work, where it was discussed how in the state of dreaming we are carried away from one episode to the next. Dreams are also largely affected by the circumstances and events of our real life, in which we can therefore find various familiar features, similar to how it is designed in the game. However, according to psychoanalysts, most often the image of a particular person or familiar objects and locations do not have a significant meaning. The content of dreams is illogical because, in a dreaming state, the brain regresses and operates in

a certain way, thereby content of dreams is fragmentary, and it only occurs in isolated episodes without causality (Jung, 1974; Wamsley, 2020).

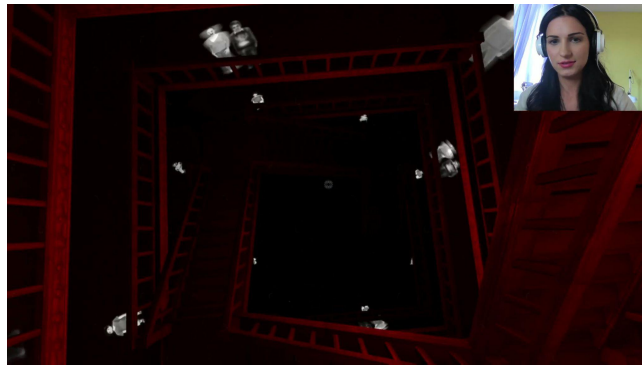


Figure 7: “The psyche of client #418 in *Nevermind*.” Flying Mollusk, 2015.
Author’s screenshot. January 23, 2023.

It is interesting that, in *Nevermind*, none of the patient’s psyches included the presence of people: neuroprobing the minds of the individuals, a feeling of total isolation arises. In other words, all the surrounding mindscapes are centered on the individual, and with that, the world of the psyche constructed by the game is the most distinct from the physical one. It is known that in our dreams we often see and interact with people we know, who can also be vague and deformed by psyche, for instance, when we know undoubtedly that we see a certain person in a dream, even though they look and behave differently. Considering this aspect in more detail, it is guessable why the creators of the game did not include the presence of people, perhaps specifically not to create a dream effect, but to demonstrate that it is one distinguished, separate psyche.

The game-mechanics are very simply designed, letting one interact with numerous corners of the psyche in myriad forms, both to initiate new episodic pop-ups and to analyze its structure in detail. The main game-mechanics of *Nevermind* include walking, collecting items, carrying, solving puzzles, shooting, dodging, clicking and dragging, and interacting, allowing one to complete all the necessary procedures in the game. A lot of time is spent in the game using the simplest game-mechanic, namely walking: exploring the game environment and looking for memory fragments, because not everything seen is essential to achieving the goal of the game. Similarly, there are often various items lying around that need to be collected with no clarity or indication, of which of those are related to psychological trauma. For example, in the patient’s #418 game environment, it is necessary to collect and carry different weapons such as a knife and a gun, which correspond and associate with the particular mental trauma suffered by the patient in war. The game’s puzzle-solving game-mechanics involve

solving abstract and seemingly nonsensical puzzles that are intertwined with various past experiences. In other words, the game-mechanics mode interacts with the trauma-torn psyche, involving visual surroundings in the puzzles to be solved. For instance, in the case of client #251, it is required to form the sentence “Bathe in woes” on the magnetic letters of a blood-stained kitchen refrigerator, which automatically opens the refrigerator door, which in turn unfolds a new unnerving game setting. For patient #251, it is then necessary to follow the puddles of spilled milk in the milk warehouse, which leads to the requisite memory fragment. Also, in the bedroom pictured in this patient’s mind, there is a safe, which must be opened by dialing the required combination with the words *milk-gun-sorrow*, which are the main associations that remind the patient of traumatic events in her life.

Patient’s #418 game-mechanics include collecting cans and dropping them off at a drop-off point, as this is the daily routine of the veteran, who has become a paranoid homeless person after the psychological trauma he got at war. His war trauma is also played out in other game-mechanics. In the mind of this patient, for whom explosions and gunshots have become an indispensable element of the psyche, the player is provided with an opportunity to use the shooting game-mechanic. The game requires shooting at passing dummies in the amusement park, which are not located as normally in the attraction tent but in the entire park area and are able to shoot back.

The patients’ psyches resist and try to attack the neuroscientist who is aiming to reveal the layers of the mind, therefore the game involves avoiding attacks that manifest themselves in various, strange ways. For example, in the IntroSim patient’s mind, it is needed to dodge the blades sticking out of the floor in the sugar house, as well as avoid the hands reaching out from the wall of a hallway, trying to grab the neuroscientist. In contrast, in patient’s #251 mind, the player needs to avoid the sight of the giant heads that are placed in the living room of her childhood home and turn around from time to time, wounding with their gaze. In a similar manner, the guests at the funeral of the patient’s father, who are sitting at the church, aim to injure by sliding and pushing on the church pews. This technique of bypassing or outplaying enemies is borrowed from *stealth games* (though this sub-genre is more prevalent in First Person Shooter (FPS) and Role Playing Games (RPG)), where one of the main game-mechanics is to achieve game goals by hiding and sneaking past when the enemy’s gaze is directed away. This pushes the game developers to build special parameters for the placement of guards and their field of action (Tremblay & Verbrugge, 2014). In the case of *Nevermind*, the enemy or the guards in the game, which must be avoided with stealthy

behavior, are dynamic, so the player must learn the rhythm of when to move, as well as to locate areas of space and path choices where they can feel protected from exposure, which can be challenging to determine.

When the player collects all the memory fragments, they appear on a wall or a tree in the game environment, and they need to be put together in sequential order with the help of clicking and dragging game-mechanics. This creates a complete story, thus helping the trauma victim understand the meaning of their flashbacks and achieve the goal of the game. The game also offers interaction with various environmental objects, which does not directly affect the gameplay but provides additional information about the patient's mind.

Audio, in the game, at first, functions as an important orientational tool, providing clues as to what actions the player must do when entering the patient's mind. Investigating the mind of the first client, the IntroSims, initially, in the background, guidance as a neutral voice teaches that the neuroscientist cannot take as truth what the client tells him or what is seen while neuroprobing their psyche. It is also instructed that even the smallest detail can be subconscious efforts to present its own story, while part of what is found in the mind can be misleading and corrupted by the consciousness so that the negative effects of the trauma would not interfere with the functioning of the mind. In addition, the guidance indicates that the real psyches of patients will be much more complex and frightening than the current simulation.

The sound elements of the game are the primary triggers of anxious and disturbed feelings and work in a coherent ensemble with the game's visual modes and game-mechanics. For instance, in the sinister forest inside the IntroSim patient's mind - sharp, unpleasant ambient music is playing, someone's footsteps can be heard behind, and somewhere in the distance there are children's cries and howling wolves while approaching the witch's house - a creepy doll-house music starts sounding, played on the xylophone. Patient's #251 trauma manifests sonically in the form of gunshots and parents' clamor, accompanied by suspenseful ambient music, car horns, and funeral music coming from the church. Opening the parents' bedroom door, short but heavy breathing is heard, which the trauma has not been able to extrude from the mind and while wandering through the disturbing maze, defiant cries of "Figure it out!" are audible.

As the player gets closer to each patient's resolution, the music becomes solemn and in slightly brighter tones, sometimes even including melodies with singing. The auditory mode

finely indicates at what point the player has reached the most intense moment of the gameplay as well as when they have come to the denouement.

If patient's #251 traumatic experience with her father shooting himself is revealed visually and textually in the course of the game, it is almost exclusively due to the audio and language modes that the mother's negligent behavior is also disclosed: when knocking on the bathroom door, the mother's voice is heard yelling "Go to your father!", while entering the refrigerator that leads to the warehouse, the mother shouts "Get your own damned milk!" in the background. Also, when interacting with the living room door, parents can be heard loudly arguing about unpaid bills. In *Nevermind*, the language mode, both in audio and text format, plays a significant role in giving the player an introduction to the client's background. Before each trip to the patient's psyche, the patient tells their story, which is most often erroneous and misleading. Likewise, each mind journey concludes with the patient's revelation and understanding of what happened in their past and why they struggle. Also, during the gameplay, various exclamations and texts are heard, which originate either from the patient's memories or the haunting post-traumatic feelings, which also help to analyze what is going on in the psyche. Texts also appear on photographs that symbolize fragments of memories. For example, the photos of patient #251 combine visuals and texts where it is written, "Me trying to pour some milk. I made such a mess", "Me going upstairs. Daddy was usually there working. Maybe we could play jigsaw if he isn't mad", "What is Daddy eating?", while patient #418 has memory fragments that portray such statements as, "I was a warrior. I wanted to save the world," and, "But sometimes to save something you have to destroy something".

The patient's #418 psyche is based in an urban setting, complemented by city sounds (although visual reflection does not reveal anything that could produce this noise, namely, no cars, people, or construction work). In the background, melancholic electric guitar music can be heard that complements the city's depressing and gray visual mode. The replacement of each episode in the psyche occurs with the noise of a grenade explosion or gunshot, which causes an increasingly frightening, and unnerving mood. The second episode of a war veteran's psyche, which depicts a war-degraded environment, is supplemented with stinging, intensive music, whispering, and ghostly gasps. In the episode of drug use, some gasps indicate euphoria. Circus music is played in the background of the same patient's carnival episode, as well as people's chattering and screams from roller coasters, even if people are not present. The night scene in the carnival is then complemented by squeals, which sound much

more desperate than those that came from the roller coaster, cries of troubled soldiers from invisible walkie-talkies, constant firing, and helicopter noise, creating a sense of panic. In the last scene, which is introduced by another explosion sound effect, ringing and muffled blasts can be occasionally heard, just as after hearing damage.

Music, but more noticeable different sound effects, provoke diverse feelings that the patient senses, such as panic, anxiety, disturbance, horror, curiosity, and enlightenment. Often in the psyches created by *Nevermind*, sonic elements overlap and blend into a swirl. In addition, the above-mentioned lack of people in the psyche does not manifest itself in sound modes, because human voices are heard in the psyche of every patient both familiar to the patient and unidentifiable; similarly - both heard communicating clear texts and creating undistinguished noises. However, generally, auditory modes do not convey much of a message about people's experiences, but most obviously inform about the patient's emotional state.

Various textual clues can also be found in the game space itself, for example, for patient #251, certain settings have engravings on the ground and walls that say "lie", referring to the patient's deep-seated sense that the story about the cause of her father's death is false. Similarly, in the mind of client #418, initially, in a normal city setting, a large signboard appears with a recruitment advertisement that says, "You can save the world. Become one of us!" but the rest of the massive poster is covered with graffiti saying "Do it!". At this level, it is the textual modes that most clearly signal the patient's connection to the military industry and the possible traumas associated with it. Later, already in a psyche-deformed environment, digital signs can be seen on the side of the road, which show such texts as "Why even try", "You are still a failure", "They all hate you", while cardboard inscriptions "Do what is right" can be found in garbage containers.

Client's #418 background information indicates that a pre-neuroprobing interview could not be performed because it has been unattainable to build an overall picture from the patient's narrative. When listening to a fragment of the client's narrative, mysterious phrases about blood, monsters, and culprits are heard. Not only the content patient expresses, but also his tone of voice and manner of expression reveal desperation and fear. This text, in a way, prepares the player for the chaos and dreadfulness that will unfold in the client's psyche. Graphic representation of the patient's psyche also integrates other textual modes, such as a fountain with a gold-plated badge reading "Throw Your Future in the Fire and Return Changed" which prompts the player to toss coins. Another significant textual indication of the patient's psychological state is seen during the carnival, where signs with the inscriptions

“You Will Never Belong”, “There Are Others Like You” and others pop up in the soothsayer’s hut. Collecting all the fragments of the patient’s memories, the text modes reveal that the client was a soldier who wanted to save the world, but in order to save something, one has to destroy something else. This written textual mode is followed by a spoken revelation by the patient, in which he reveals trying to escape from his past and, with the first person killed, dying himself. His narration informs it was the roller coaster of the carnival that acted as a trigger that recalled the screams and past events. Also, this textual cutscene artistically indicates that dealing with this trauma is this person’s final battle.

The textual modes, in the game, are those that entitle understanding of what kind of trauma and psyche the player is dealing with. Without the client’s introductory narrative and few-word-long descriptions of memory fragments, it would be impossible to thoroughly grasp the motley episodes of the psyche. Although the psyche itself does not contain numerous linguistic elements, one of the patient’s psyche included paranoid and self-deprecating texts in almost all urban inscriptions, which most directly pointed to torments of guilt and inferiority.

In *Nevermind*, kinesthetic modes, meaning body motion, work on a further level when compared to most games. Namely, since the game recommends adding additional hardware - webcam and heart sensor - the player’s bodily experience is involved not only at the standard haptic level but as the authors of the game call it, in the production of biofeedback. In order to get a complete game experience, it is required to include not only touch (interacting with the computer keyboard and mouse) but also enable the game to respond to eye movements and heart rhythm.

In the game, kinesthetic modes also operate in the way that *Nevermind* requires body movements to explore the game space, albeit minor. One of the illustrations is bending the head in different directions (which was not noticed during the gameplay, but later when analyzing the video recording of this case study), because the narrow game spaces, such as corridors and staircases, tend to be twisted and difficult to walk through. Although such spatial solutions can be irritating, they, first of all, create the feeling that one is traveling through the space of the psyche not entirely disembodied, but partially applying body movements as they advance through game space. Secondly, such small distortions of space add to the chaotic and unpredictable structure of the psyche. Similarly, another kinesthetic mode that the game may be attempting to provoke is injuring the player, which also causes the player’s body to react by flinching or wincing. For example, in the psyche of client #251, the obscure people at the church are pushing themselves over the neuroprober with their church

pews, which forces the player to regularly brace themselves for a hit and physically jump up when it happens. Also, in the mind of the same client, the incomprehensible bodies hanging and writhing in sacks in the milk warehouse make one turn away from the screen in repulsion.

As part of this case study, the game was played initially without supplementary biofeedback devices and later with additional ones added. Playing *Nevermind* with additional hardware did not display any modifications in gameplay, but this could be affected by several factors - the most likely of which might be the lack of a shock element when playing repeatedly, and possibly the incorrect installation of devices. Nevertheless, after reviewing the walkthrough videos of the game available on Internet resources, it can be stated that the game becomes more intense and challenging to play at certain moments when the player's stress level rises, for instance, filling the kitchen with milk and trying to drown the player, forcing them to search for a puzzle solution at a faster pace and calm their mind (LordMinion777, 2015). As the authors of the game indirectly stated in its description, precisely with the help of the kinesthetic mode or its biofeedback technology, the patient's psyche finds a suitable moment as a game setting to attack the player who is its invader. This aspect of the game, which can only be achieved with the help of the specific kinesthetic mode, is an extremely noteworthy factor in the functioning of the psyche, as indicated by psychoanalysts and as mentioned in chapter 1.4. *Impact of trauma on psychic processes* of this work, i.e. the psyche attempts to protect its wholeness in various manners after undergoing trauma and the unraveling of painful past events and determining their influence is an extremely unpleasant and complex process, which the psyche will likely resist, as also depicted in this game.

On the whole, in the game *Nevermind*, the different modes almost constantly work in a single ensemble, complementing each other and only together expressing the meaning behind different psychic episodes. If certain elements help to better spatially reproduce the expanses of the psyche and the prevailing mood in it, others play a better role in evoking particular emotions, allow to comprehend the ongoing psychic processes, or offer to interact with the psyche and make it playable.

4.2. *When the Darkness comes*

The particular case study under consideration is unusual in that it is a creative work made by one individual, in which he has tried to depict the different layers and depths of his psyche in an interactive setup, as the author had envisioned his mind when in the grip of depression and

seclusion. The game reflects the psyche as playable, yet self-governing and arbitrary, most often forming only an illusion of the player's control options, interpreting player interactions in its own way.

The single-author indie video game *When the Darkness comes* (2019) by Sirhaian is a work inspired by personal experience that illustrates the workings of a depressed psyche. Fundamentally, the game is made up of digital mindscapes in the mood of the psychological horror genre. By its construction, the video game falls into the atmospheric walking simulator category (Sirhaian, 2019).

The author of the game takes a peculiar strategy in creating the description of his work, stating, "A Game Without Meaning. A Game Nobody Should Play" while adding to it and informing potential players that the game deals with themes such as fear, despair, hopelessness, and loneliness. As is typical for most games that contemplate the psyche, the introductory text of this game also stresses several warnings about material that is not appropriate for all audiences, as it handles topics such as suicide and abuse and can potentially initiate epilepsy attacks. The game is deeply subjective and influenced by authentic feelings: as its author states, "This was the culmination of a self-exploration into my own psyche. If it can help anyone else explore their own I am thankful for that" (Sirhaian, 2019).

When the Darkness comes requires its players to approach the topics of depression and thoughts of suicide in an interactive and personal form that anticipates emotional engagement. Moreover, according to the author, the creation of the game enabled him to overcome a tough period in his life and it is published with the aim of supporting others who are in similar crises to look deeper into themselves and acknowledge other available non-destructive alternatives.

The game is generally reminiscent of performance art in terms of its expression. The game's author or narrator constantly talks to the player and guides him from one virtual landscape to another. Sometimes he disappears and sometimes reappears showing astonishment at how deep in the game area the player has gotten in the meantime. Regardless, the player is never alone in this psyche. Since the author's commenting and hosting are frequently heard, one gets the sense of having broken into or accidentally wandered into private property. Despite the fact that the game begins with a giant sign "Welcome" and a confetti explosion, as well as with an audial speech by the game author, at first, one gets the impression that the game author does not understand why the player is there and soon seems to be straining to get him

out of the game. In addition, it is problematic to understand precisely who this player is and what his position is. However, one of the interpretations, also supported by the game’s description on *Steam*, could be quite literal, that is, the author of the game deliberately lets strangers-gamers into a self-made simulator of their psyche, which would possibly allow the player to see resemblances with their own mind and struggles, as well as gain some consolation.

Another reason why the game resembles a digital performance is the meager control options provided to the player and the irrespective nature and self-contained progress of the game. Although occasionally the gameplay entitles the player to make different choices by pressing one or the other button under the answer options of the questions, only the ultimate choice at the very end - select suicide or get help - changes the outcome of the game.

The game being narrative-based has borrowed its structure from another form of art, namely literature, dividing its segments or levels into 14 chapters - each with its own title and mental landscape - and adding two probable endings. Chapters are replaced by a single inscription in the middle of the screen “Loading”. The various chapters symbolize separate sectors of the psyche, such as memories, fear, self-doubt, shadowy monsters, dreams, etc., for which a specific designation cannot always be unambiguously found. Although the chapters have several unifying elements (which will be crystallized/discussed in more detail later in the course of this analysis), they can differ drastically visually and in aspects of the message they carry, so, in this case, study, each of them will be briefly explained separately.

	Procedural mode	Game-mechanics	Visual mode and graphics	Auditory mode	Textual mode and language	Kinesthetic mode
<i>When the Darkness comes</i>	<ul style="list-style-type: none"> walking around the rooms/towards a target respond to the author's spoken instructions answer questions by pressing buttons 	<ul style="list-style-type: none"> walking jumping evading interacting 	<ul style="list-style-type: none"> abstract, simple, dark, dimly lit rooms with bright contrasts computer display and graphics fast altering mindscapes glitched environment in some places 	<ul style="list-style-type: none"> sounds of the player's footsteps when moving around the room the voice of the creator of the game piano music and stringed instrument melodies the ticking of the clock loud, sudden and sinister noises 	<ul style="list-style-type: none"> enigmatic inscriptions on the walls of the game space spoken narrative and interaction with the player questions hanging in the air chapter titles 	<ul style="list-style-type: none"> using hardware to navigate and interact bodily reactions to jump-scars restlessness in the body at times when the game gives off tense overtone

Figure 8: Mode matrix of *When the Darkness comes* case study (Source: created by the author)

In the chapter “Welcome” the first scene is brief. It allows the player to get close to a doll or mannequin in the form of a woman playing the piano. A fireplace can also be seen in this room. The second scene follows immediately and appears completely disconnected from the

previous one. It is visually represented in an empty and dark room, where there is only a green spotlight that shines the inscription “Welcome” on a blue screen. The rest of the room is surrounded by darkness, only a red flashing light can be seen high on the wall. At this point, the game prompts the player to quit by pressing Alt-F4, which does not work and instead displays a red stamp with the words “No Escape” on the screen. After the inscription “You won!” appearance, a red, illuminated door with the sign “Exit” occurs on the right of the screen, as a hint for the player to go through it and leave the game space, but the player is not able to go through this door. The game’s narrator suggests opening the door on his end, and when he does, walking through it reveals a dark hallway with several surveillance cameras along its walls. This portal or tunnel leads to a chamber with a stand with a giant red button on it. Surveillance cameras and stands with buttons are both pervasive elements in all chapters of the game. The author of the game instructs the player to wait and not touch anything. However, ignoring the instructions and pressing the button, the player is transported to a new setting.

In the second chapter of the game, “Factory”, the player is in what appears to be a large dark factory area, where a text hangs in the air inquiring “Do you like this environment?”, while the only two answers available are “Yes”, colored in green. When the player presses one of the “Yes” buttons, they automatically switch to red “No” responses, and one can imply that the author of the game is upset by such an answer due to the white note “You don’t mean it” emerging on the wall. This scene could be analyzed as often occurring judgments of our mind, which do not allow us to accept praising feedback and compliments because the mind tends to be filled with doubts about whether the other person is truly giving us a positive assessment. Also, the only available answer to the player as “Yes” may represent our social norms or rules of politeness, which anticipate answering in the affirmative and not revealing their genuine opinion in order not to hurt another’s feelings. This episode is repeated by two more similar ones, only now the game no longer offers a “Yes” answer anywhere.



Figure 9: “Chapter City in *When the Darkness comes.*” Sirhaian, 2019.

Author’s screenshot. March 13, 2023.

The next chapter “City” is still set in a dark vast room divided by dark walls. Heavy rain and storm sounds can be heard in the background. The author of the game reveals there is a market in the city and he needs the player to go there and buy him a drink while attempting to avoid other people. Signs “They are all staring at me” can be seen on the way to the market, dark people depicted as mannequins or doll-like figures with bright luminous red eyes follow the player as they move around the game space, and whispers can be heard. When arrived at the market, a whole crowd of people like this can be seen and the only path to get to the next level or chapter is to go directly at them, once again disregarding the instructions of the game’s narrator. Upon encountering the dark human figures, they surround the player, their eyes become more radiant and the room turns an ominous red, accompanied by trenchant sound effects. Both the textual modes in this chapter and the visual portrayal refer to the specific psyche’s fear and avoidance of people who, in his opinion, are constantly observing, gossiping, and perhaps criticizing him, as well as causing him anxiety. The next scene of this chapter teleports the player to a soft pink room, in the middle of which is a black marionette in the shape of a woman whose face is glitched. While the overall color tone for this particular room is inviting, the player is still surrounded by black walls with surveillance cameras mounted on them. Above the marionette arises a pixel-like inscription with the question “How are you doing?”, as well as stands with three answer options. Two green or positive answers offer to answer “I’m fine” or “Doing good”, while red as a negative answer states “I’m not okay”. There is no button designed on the red answer stand, thus it is never possible to select it in this setting. Next comes the question “What are you doing here?” with the positive answer options “Wanted to ask you something”, “Wanted to see you” and the negative - “I want to quit”. Both the queries and the response options can be understood in two ways. The question word “here” can refer to both wanting to know what the player is doing in the

reflection of the author's psyche/game, or what the player is doing in this life. A total of four alike questions are asked, and with each reply, the dark walls enclosing the player grow higher, seemingly cutting the player off from the world around them.

Chapter "Forest" is the most distinctive of the game's chapters, as it is designed in spacious, light blue delightful tones, accompanied by calm ambient and piano music. As the player progresses through this space, purple glowing trees pop up. Perhaps this is a metaphorical representation of the bright, enlightened corners of the psyche, similar to how audiovisual media sometimes illustrate paradise as radiating light and peace. Possibly, trees can also denote nature and its rejuvenating effect on the human psyche. An avenue of trees leads to an abstract half-dome of light on the ground and a pixelated purple "Follow the light" sign.



Figure 10: "Chapter *Forest* in *When the Darkness comes*." Sirhaian, 2019.
Author's screenshot. March 13, 2023.

The "Light" chapter, although it carries a supposedly positive title, is one that can cause anxiety-like feelings in the player. The player is placed in absolute darkness and instructed to follow the faint beam of light seen in the distance. At times, this light disappears or is barely visible, moreover, built in a tortuous trajectory. The player's task is to pursue its direction without falling into what seems like an endless darkness or abyss that would cause the player to die in the game. One of the ways this level provokes tension is the visually irritating and discomfiting contrast between the darkness and the bright beam of light. The second is the degree of complexity of the game-mechanics, which demands not falling for several minutes, and the third is the oppressive silence, which is disturbed solely by the sound of the player's virtual footsteps. Every once in a while, the inscriptions "Believe in the light", and "Keep going" are visible on the sides. The text "Do not fall. Let the light guide you" characterizes both the straightforward rules of the level and evidently illustrates that part of our psyche that forces an individual to resist life's hardship, to go forward, to notice and strive for the light.

As already mentioned, periodically the light fades in this level and, in such case, the player must resume forcing through the darkness until the light reappears, which also symbolically echoes the difficulty that our mind can have in maintaining a positive trajectory, particularly if a person has a psyche that is prone to depression. Likewise, the order in which these chapters follow, where “Forest” is a happy and peaceful atmosphere full of light, whereas chapter “Light” portrays total isolation, emptiness, and a dark mood, where the struggle is emphasized in the expression of game-mechanics that are tricky to apply. Another notable scene in this chapter shows a mountainous, empty area in a monotonous color scheme, A lake can be seen in the middle, with a dark human figure in its center; however, this figure the player is not allowed to approach or even step into the water of the lake. It is hard to conclude what this particular setting of the game represents, but one version could be depicting the despair inherent in this chapter, such as desiring to but not being able to get close to other people, or being forced to be mostly alone with oneself.

Chapter “Poem” is a simply designed mindscape, where the player can walk forward along a bright white road, while black-colored words appear on it, creating a poem about pain, the desire to escape, hope, and happiness. It ends with the player being trapped on a round bright platform surrounded by floodlights. Suddenly, after a long hiatus, the narrator is heard speaking, and he seems surprised at how far the player has wandered into his mind and memories. The round platform starts rotating and at this moment the author of the game seems to be overcome by enlightenment and directs the player to think that possibly it is just as well the player’s mind that they are wandering around, and this is a symbolic *turn the tables* moment. The narrator declares, “Okay, I get it now... That’s extremely interesting... [...] I’m just gonna let you be”, suggesting that from now on his presence in the game will be distanced and the player is, so to speak, on his own.

The most vivid scene of the next chapter “Snow” is a snowy blue room in which several people are standing in the likeness of mannequins. When the player approaches one of the groups of people, their bright red eyes light up and they each whisper disparaging remarks such as “loser”, “egoist” and “gross”. Every time a player is insulted, an old-fashioned alarm clock drops from the air. Applying this situation of the game to the psyche, it could be concluded that these are some kind of psychological traumas that occurred when experiencing rejection and left a painful imprint on the psyche. The falling clocks, on the other hand, perhaps emphasize the waste of time people tend to spend worrying about what others think of them or continuing to try to please people and fit in.

Chapter “Cabin” brings the player back to the very first scene, where a woman playing the piano and a burning fireplace can be noticed, however, it is now visible from a distance and cannot be approached. Instead, the player is forced to meander through black corridors, on the walls of which are written philosophical questions about why everything should have meaning, there is nothing remarkable about this scene, as well as ominous bright red inscriptions “There is no meaning”, “No escape” and “Leave me alone”, which highlight the signs of separation and depression vividly.

In the chapter “School”, a dark campus is constructed, where eight alarm clocks must be found in its myriad rooms (classroom, pool hall, etc.). This scene seems to be created to construct a frightening atmosphere, as only a small field of the space is visible, which in its aesthetics resembles typical psychological horror video games such as *Slender Man* (2009) and *Phasmophobia* (2020), which seek to create unsettling psychological states in the player. In this instance, it is achieved with a uniformly dark setting with the only light source emitted by the player as if from a flashlight, casting ominous shadows on other objects. In addition, there is uncomfortable buzzing noise in the background, producing a feeling that one is completely alone on the vast premises and, simultaneously, an unease that at some point the player might encounter something unexpected.

The following chapter “Breathe” features loud, intrusive electronic music and a blue aquarium displaying the words “Why don’t you just breathe?” and the subsequent “I can’t” and “Breathing is hard” written all around the game space, which seems to work as a way to interactively illustrate a panic attack, which is known to paralyze even the most natural human activities like breathing, developing into shortness of breath, the feeling of suffocation, or hyperventilation causing even more panic-like feeling (Root, 2000, p. 11). The escalation of these physical and psychological symptoms is reflected and fueled by the ominous music that takes over the game.

Chapter “Dream” plays out a confusing episode; namely, the player is teleported to a bright but empty private house, behind the windows of which a sunny green yard can be seen. In the bedroom of the house, where the only piece of furniture is a bed, the question “Is this a dream?” can be read. The task in this house is to find the remote control and turn on the TV. At that point, a “no signal” screen occurs on the TV screen, and air raid sirens start sounding. A nuclear explosion can be seen outside the window, and a wave of fire reaches the house. One of the possible interpretations of this dream is the fear hidden in the psyche, which makes us worry about our survival and all the countless dangers that can threaten our well-being and

life. This phenomenon of the human mind is addressed by the term *annihilation anxiety*. Annihilation anxiety refers to the fear of imminent mental or physical destruction and disappearance, concerns over survival, and feelings of impending disaster (Hurvich, 2003).

The theme of fear is continued in the subsequent chapter, “Black Hole”, set in a space-like area. The player is positioned on a long platform with “Face your fears” text written on one end and a black hole encircled by a bright ring of light on the other. Approaching the hole, another inscription emerges with the question “Why do you run away from your fears?”. At this point, the player is forced to sprint away from the black hole, symbolizing fear, as the stretched platform he is standing on begins to shatter as if made of glass. Escaping through the door at the end of the platform, the player enters a room with white walls, in the middle of which is again a female marionette with glitched face, who asks in a robotic voice “Do you remember me? Please answer me”, while behind her is the inscription “I deactivated your movements”, which makes the player wait for the game to automatically move them to the next setting. This episode can be analyzed in multiple ways, but one of the versions suggests that it signifies a person who wants to help, yet, for some reason, one cannot accept it, which is demonstrated by deactivated movements.

One of the last chapters of the game, “Meaning”, addresses existential questions. The player is in a dark room with numerous computer screens displaying the query “What is your purpose in life?”. Again, large stands with buttons are placed along one of the walls with colorful answer choices: creativity, fame, money, happiness, knowledge, as well as “none”. Whichever of these options the player selects, dreadful, hollow music starts playing and the words “Just like there is no meaning to this game. There is NO meaning to life” appear on the wall.

The chapter described above pictures the existential questions that preoccupy our minds. This is addressed by a distinct branch of psychology - *existential psychotherapy*, which emphasizes that a person must contemplate these matters and clearly understand the unique context of their life in the most all-around sense, that is, to see his life as a whole, without fear and lies, to understand his relationship with the universal aspects of life: fear, uncertainty, freedom, death, responsibility, love. The theoretical basis of this approach is closely related to the philosophy of existentialism, where, for example, Soren Kierkegaard theorized that human dissatisfaction can be overcome only through inner wisdom (McCarthy, 2015). This deviation of psychology is based on the fundamental belief that every individual experiences an

intrapsychic conflict due to interaction with certain circumstances and conditions of human existence, as well as what is called the given. Theories recognize at least four initial “givens”:

freedom and the associated responsibility

death

insulation

meaninglessness (Yalom, 1980; Batthyany, & Levinson, 2009).

The last chapter with the significant name “Choice”, sets the players in front of a choice - a chair is visible in an empty room, but a little above is a bright noose with the word “death” written in the middle which is glitching. As the player approaches the loop, the words “No, don’t! You can still change!” come into sight, while red letters on the wall say “Nobody will miss you” and “Don’t kill me”. Here we can see the duality of the psyche or the various facets that we can read in our minds. A phone rings from the opposite end of the room, which could be seen as a symbol of help. The phone is placed on a table above which a green inscription “Help me!” is observable. Joyful piano music plays in the background throughout this level, contrasting with the dramatic choice the player is faced with.

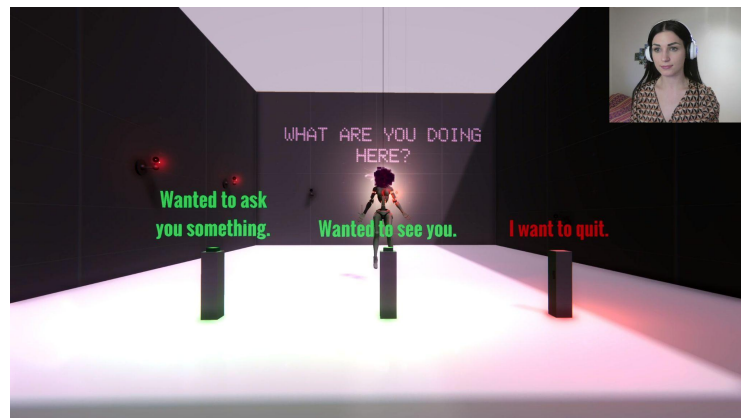


Figure 11: “Psyche in *When the Darkness comes.*” Sirhaian, 2019.

Author’s screenshot. March 13, 2023.

If the player decides to pick up the phone and conceivably get help, the next scene takes them to the cozy cabin’s room (which surfaced several times during the game) with the sentence “I’m glad” shown on the wall. The conclusive message in the form of writings on the wall is expressed straightforwardly, telling that life has no meaning, but we can give it meaning ourselves which is the most beautiful part of it. The last essential text mode in this game is the sentence “No matter our fears or obstacles we can choose and we can change”.

In contrast, when the player chooses to hang himself, death is represented in the psyche of this game by a simple inscription in the middle of the screen “All data deleted. Bye” and the

player is instantly kicked out of the game software. When opened the game again, a dusky screen unfolds with a blurred piano that reads “Darkness has come” and “You are not part of this world anymore. Some choices allow no comeback”. When exiting the game completely, the desktop background image has been changed to a black and red pixelated photo with a white inscription “You were warned”.

This game expresses the autonomy, independence, and unpredictability of the mind in the way it is structured and how the software works. For example, in the previous instance, where the game software replaces the computer’s display image, depending on the game resolution, or by addressing the player by the name that is stated on their Steam account. Furthermore, once the game is started, there is no “quit” option, it does not offer any exit mechanism. It can only be exited manually by pressing Ctrl-Alt-Delete and ending its software operation on the task manager. Similarly, the game does not allow one to play it again when the bad ending scenario has been chosen; after all, it is intended as a manifestation of the psyche of the game’s author. This kind of “playing around” with how much the game can affect or how the player can push its borders is typical of the so-called *metagames* and *meta-playing*. According to Richard Garfield, the metagame refers to how the game interacts outside of itself, i.e. “what you bring to a game, what you take away from a game, what occurs between games, what happens inside a game” (Garfield, 2000). Metagames can include, for example, exploring to nuances the structure of the game and searching on Internet, such as in gamer forums, how to exceed the established rules of the game. And likewise, it can refer to the game’s own efforts to go beyond the standard limits, as seen in *When the Darkness comes*. Meta-playing essentially means serious gaming and taking the maximum from the game that it can provide, be it its statement, acquired skillset, ranking, recognition, etc (Nguyen, 2019).

The main game procedures involve attempting to follow the instructions given by the author of the game, providing answers to written and spoken questions, walking around the unrestricted space, and unlocking various achievements until all of the corners of the mind or game chapters are completed.

Although one of the common procedural modes in this game is picking and choosing, the player is frankly tricked into having any choices in the game, such as exiting the game using the instructed keyboard combinations or any of the exit doors. This aspect presumably hints that it is unattainable to escape from one’s psyche, it is an inseparable part of the human being. Similarly, no matter what answer the player submits, it almost always does not affect

the course of the game, rather it simply directs to reflection and thinking about different psyche-related questions.

This leads to the question of what role the player plays in this game narrative. If initially the player is welcomed as a guest in another person's psyche, then as the game advances, the impression is made that what is occurring in the game is a representation of the player's own mind, that is, it can be the game author's psyche, the player's psyche, and the human psyche as such. In other words, the player is the narrator and the narrator is the player who share the same experiences. One validation of this assumption is the question "What is your purpose in life?" the player is asked, as well as the choice the player can make at the end of the game, which is to decide whether to die or not. Another imaginable explanation proposes that the narrator in this game could also be the psyche itself, which seems to be liberated in certain aspects and, at the same time, is inextricably linked to our essence.

In *When the Darkness comes*, the psyche is visually illustrated as a black space, where accents are mainly made in white and bright red colors. This choice could be based on the game's central theme, depression, or the decision to visualize the psyche as similar to the cosmic system as an infinite empty space where virtually anything has the potential to exist. In the aesthetics of the game, visual modes are those that reflect the processes emerging in the psyche, which cause the most anxiety in the player. One of the means of how this is reached is by creating silhouettes and figures in bright and resplendent tones on the dark background of the game environment, sometimes irritating the sight with high brightness levels similar to the effect of turning on a light after being in a completely dark room for a longer period.

It is not simple to read the meaning of the graphically designed spaces and objects seen in the game, what exactly they could symbolize, and whether it is necessary to look for some meaning in them. However, sometimes the abstract forms and concrete objects integrated into the game environment raise some associations and seem to function as digital metaphors for mental processes. For instance, old-fashioned clocks are seen throughout the game in multiple locations, which are also most likely the cause of the constant background noise and which could symbolize time and how life proceeds while we deal with our mental ongoing. At the same time, these clocks can also be viewed in the game as a countdown of how long an individual can endure everything that is happening. Similarly, the surveillance cameras used throughout the game lead to thinking that the player is being watched or that something is always expected from the person.

Although there is no human presence in the game, they are visually represented as dark shadows with flashing red eyes, mannequins, or marionettes. Assumedly, in this manner, the author has tried to reveal that there are no other people in the human mind, only the idea of them or their images as we perceive them. What can be seen in the game is the reflection of reality in the psyche or how we perceive it, compared to the objective, external world. In this game, human characters are not portrayed in a good light, but rather as intrusive monsters to be avoided or as manipulable, distanced puppets.

The visual modes are designed very dynamically - they alter fluently as the player navigates through the space. Their message indicates the changeability of the psyche, its uncertain rules and our little knowledge of it. If the first time the player examines a corner of the room, it looks one way, then when returned to the same point for the second time, its appearance may have already changed, forming a surreal and unstable environment. Also, in the game, one cannot predict what the next chapter will be like and what the consequences of the player's actions will be - the player gets pulled to a different setting every few minutes. This creates uneasy feelings during the gameplay, especially the further the disjointed narrative of the game develops.

Many game settings are abstract, very spatial, and filled with different facets and figures, therefore it is challenging to separate and explain design choices. For example, the intention to depict the psyche in environments that resemble a factory, school, cabin, forest, or simply in abstract darkness, seems to be inspired simply by life impressions. Similarly, in our dreams, we see places that are familiar to us but deformed by the mind, as well as unidentifiable locations. Even in the game itself, its textual modes point out that not everything should have a meaning applied to it, which likely refers to many of the graphic elements of this game that are chosen according to seemingly random principles. The game is also characterized as the creative expression of the author, which helped him to cope with a depressive period of his life, and which communicates all the emotions hidden inside the author in a symbolic format and, therefore, in an ambiguously understandable form.

Significantly, the light in the game symbolizes all the positive and good that can be encountered in life and the human psyche. The player is invited to follow the light and be navigated by it. But in the final episode, the noose is colored brightly white, visually designed as inviting, and redemptive, which proposes that self-destruction can also seem like a positive solution to a disheartened psyche.

Since the game is developed as a walking simulator, the game-mechanic variety is not wide - the main emphasis is set on two game-mechanics, i.e. walking around the rooms with the objective of exploring it, as well as simple interaction with various objects. Most often, new scenes emerge as soon as the existing setting has been thoroughly explored and a pop-up appears in the lower right corner of the screen informing that a new achievement has been unlocked. Several scenes also require the player to interchange by answering provocative queries or clicking on one of the central objects.

Also, the few game-mechanics and their occasional buffering, for example, causing walking to become demanding to perform or excessively stretched, reflect the manifestation of anxiety. In the “Light” chapter, the player is urged to follow the light, which is sometimes barely visible and regularly strains to be hard to keep up with. This game-mechanic then acts as a fairly direct metaphor for how tough the will of keeping a bright outlook on life and following the good can sometimes be, which can also trigger anxiety.

Interestingly, in many parts of the game, the player can do nothing and the game will continue its course, or, in one way or another, will force the player to do what needs to be done. For illustration, if the player gets lost or wanders too far, the writing on the walls asks “What are you doing here?”, evoking that this is not the intended direction. Likewise, if the player does not press the button themselves, but waits for a long time, the narrator will start questioning the player why they are not pressing the button, stating that it is not a complicated action to perform.

The basic audial modes consist of the sound of the player’s footsteps, the accelerated ticking of the clock, and the occasional piano music or sharp, menacing sound effects, for example, to enhance the many seemingly aimless jump-scares. As a whole, auditory modes are designed as secondary or complementary elements of visual representation.

Initially, the game’s intro features happy piano music, a ticking clock, and a crackling fireplace, which generally creates a cozy atmosphere, even if it only lasts for a few seconds. They are followed by confetti and the sound of paper party horns. While the game author waits for the player to quit the game by pressing Alt-F4 or exiting through a door, there is a stressful and fast ticking of a clock or timer that gives the impression of rushing the player, which repeats itself throughout the game. The constant ticking of the clock in the background at an accelerated pace creates stress audibly. The downcast mood of the game is also contributed to by the sound of quiet crying that can be shortly heard in the last chapter.

As mentioned before, as the player walks around the perimeters of the game space, loud footsteps can be heard echoing in the vast space, creating a feeling of emptiness and isolation. The game also uses several moments of silence and, in general, the psyche is portrayed as a dark and quiet place. Throughout the game, sonic elements are used in a sudden and abrupt manner as emerging out of nowhere.

Already after the first minute of the game and the welcoming episode, the subtitles “Press Alt-F4 to quit” and “You won!” appear on the screen, supplementing them with the author’s narration that the game is over and it is time to leave. Text modes work throughout the game in a similarly confusing and provocative manner.

Text modes in this game are numerous and can be encountered in every chapter of the game. They mainly have an informative function but, at the same time, the different texts and the way they show up on the screen provoke emotions. Here are several examples. One of them are the texts that appear on the room walls after the alarm sirens go off, “Find a safe place!” and “Safe place?”, which incite feelings of helplessness and despair after being placed in a situation with a dead end. Analogous feelings are caused by the screamingly bright inscription “There is NO meaning to life”, which appears when the player chooses their answer to the purpose of life. This inscription is complemented by others, implying “You are not strong enough” and “Void” contributing to the sense of hopelessness.

Texts as inscriptions in the game also act as main accents and stopping points, which repeatedly are at odds with the author’s spoken text - respectively, although the narrator’s speech seems to be in a somewhat cheerful mood, the written texts in the game environment indicate the longing to be undisturbed. For instance, the caption on the wall “Leave me alone, please” is very striking, when it encloses in parallel with the author’s polite introductory narration about the environment. One way this game mode could be interpreted is the discrepancy between how people tend to act on the outside when they are in public and perhaps pretend that everything is fine, and how they truly feel inside.

The graphics of the game are made in 3D format and allow the player to spatially move to different places, perceiving the space through movements, reminiscent of the fully immersive VR experiences. Also, moving through the different environments is challenging as it is difficult to navigate in the dark, which is most common in this game. Although kinesthetically, there is nothing particularly exceptional than the usual interaction with the controller, the spatiality of the entire game creates an immersive gameplay that creates the

illusion of actually walking through these digital landscapes. The kinesthetic mode is also present in various jump-scares, where, for example, dark monsters with red flashlights instead of eyes scare and make the player flinch.

Overall, the psyche depicted in the game can be described as mysterious, surprising, chaotic, mostly dark, and full of graphic symbols. Ultimately, this game also touches on the theme of self-destruction as an aspect of the human psyche, reflecting what transpires in the mind that can lead to thoughts of suicide, based on personal experience. The game's author does not specify self-destruction as an unequivocally bad or immoral choice - it is more inviting in the game, encouraging one to consider how effortless it is to surrender. Nevertheless, in *When the Darkness comes* it is repeatedly emphasized that there is always a choice and the possibility of transformation, encouraging to search for help.

4.3. *Psychonauts 2*

For this case study is used one of the few games that is unique in that it portrays the human psyche and the depths of the mind in a humorous manner and cartoon aesthetics. In this game, the player is offered to play specially selected aspects of mental activity, such as the harassment of doubts, generating ideas, dealing with panic attacks, and other aspects, which the creators of the game had found the most intriguing and the most playable. In the case study, it will be analyzed how seemingly depressing and difficult-to-handle elements of the psyche can be regarded from a comical perspective, due to their grotesque multimodal representation produced by the game designers. What is striking in this case study is the active functioning of all modes of expression in a single ensemble, which allows one to directly and unequivocally decode the ideas and views of the game authors on one or another component of the psyche.

The third case study's game *Psychonauts 2* (2021) by *Double Fine Productions* is a platform-adventure game where the main character, Razputin, travels through different psyches and solves missions with the help of his wide range of psychic abilities. The game is played in third-person and stands out with a rich narrative, supplemented by many cutscenes and a large number of applicable game-mechanics.

The game's narrative is stretched over 10+ hours and is extremely multi-layered, flowing, and convoluted. It contains both allies of the main character, as well as villains and abductees. In

this story, the player controls an intern with acrobatic abilities named Razputin “Raz” Aquato, whose dream is to become a professional psychonaut. The base setting of the game is the psychonaut’s spacious headquarters, from which Razputin is directed to travel to the psyches of both friends and enemies and solve thrilling and often tricky missions. Since Razputin travels through the minds of very diverse fantasy characters, one can never envision what game settings will open up and what its underlying rules will be, therefore *Psychonauts 2* expects the player to be able to adapt fast: both in exploring the environment and in the use of new tools and game-mechanics. This is the major reason why the game is so complicated to play and at the same time compelling and fast-paced. In the extremely massive space of the game, numerous psyche elements are hidden, that, moreover, are scattered incoherently and chaotically and can startle the player at any moment. One example is removing any control from the player at spontaneous moments and displacing the main character in completely new surroundings with different rules.

The game also incorporates structures from other game models, as if to reveal how many different approaches and trials the study of the psyche demands. At times, it is switching from 3D spatial design, based on the exploration of the psyche, and 2D platforms, providing challenging experiences, for example, repositioning the avatar to the pages of a book, allowing it to jump through the paragraphs of a book or X-ray images at the hospital. Another episode, in turn, is inspired by the retro arcade dexterity game “Pinball”, where, in this case, Razputin stands above the ball and has to reach the bottom outlet of the pinball machine.

Psyches’ landscapes can be constructed and react to the presence of psychonauts in any way - the space can be seen upside down, stretching out, or swirling. Interestingly, the owners of the psyches, in this game, occasionally talk to the psychonauts who travel through their minds, being aware of their presence. For instance, when inside the mind of the villainous dentist Loboto, where he uses his psyche to attack Razputin by throwing giant teeth and dentures or creating a giant mouth ready to devour Razputin. Also, this same psyche features tooth fairies, depicted as teeth with wings, bowler hats, and cigars in their mouths, attempting to steal the gold tooth. At other times, owners of the psyche can also travel through the psyche together with the psychonaut, seeking to present something they want them to see.

In *Psychonauts 2*, the psyche is reflected not only as distorted and unpredictable but also in various discreet places or Memory Vaults. They symbolize repressed memories, or, as the game informs textually, “some minds try to protect themselves by locking memories away in vaults”. Memory Vaults are visually designed as running, dog-like safes that the psychonaut

must catch. When it is caught, it is attainable to view the repressed memories in the format of a slideshow of black and white pictures. Most memory experts, however, are skeptical about the reliability of memories in general and also about complete memory repression, stating that there is no clear evidence for this, therefore this is an ongoing debate (Patihis, Ho, Loftus & Herrera, 2021). Although in *Psychonauts 2* repressed memories are depicted stored in something similar to a file box, as we often imagine it and as modern psychoanalysts have figuratively illustrated it (also as computer files, a library), in reality, memories are not held in one place but are distributed in synaptic connections - each bit of memories is located in a different area of the brain, in the hippocampus, the neo-cortex, and the amygdala (Queensland Brain Institute, 2023). Every time we recall a past memory, we construct it anew, and most likely each time in a different version that is not accurate. In this sense, it would be more accurate to call them delusional memories; besides, it is revealed in the video game that memories in the Memory Vaults can be fabricated (Pendergrast, 2017).

One of the side-tasks in the game is to collect Figments of imagination that are littered all over mental worlds in peoples' psyches, which are usually blurred, colorful two-dimensional outlines of objects that have something to do with a particular person, for example, for a dentist, they are syringes, in the shape of teeth and such, but sometimes they can be projections of seemingly ordinary, insignificant everyday objects such as a chair, a flower. These visual modes of the game could be understood as imprints of reality, how we see the physical world, and how we perceive its objects in our psyche. For example, understandably, the brain itself does not see by itself, but by perceiving the world around us with the sense organ - vision - signals are sent to the brain which then, in our psyche, mirrors what is seen. Along with that, in epistemology and cognitive sciences, the reality is considered as something constructed that cannot be perceived objectively. In short: reality is as each individual makes it (Akins, 1996). At the same time, Figments of imagination in *Psychonauts 2* visually look practically the same on all game character psyches, which makes it necessary to discuss whether everyone would perceive the specific objects of reality in the same way or whether something else is represented by Figments.

As discussed in the first chapter of this work, through long-term studies of the unconscious material of the human psyche, Jung came to the conclusion that there are some common structures in the human psyche. Jung called this deep layer of the human psyche the collective unconscious, assuming that it contains a huge amount of universal, widespread patterns and forces, the so-called archetypes and instincts. In *Psychonauts 2*, this Jungian theory is

manipulated to explain how the minds of others can be accessed. Psychonauts enter the mind through psycho-portals, which are represented as devices or colorful miniature doors that attach to the host's head. The appearance of these portals occasionally visually adapts to the personality of the owner of the particular psyche, for example, being painted in airy blue tones, variegated patterns, camouflage, etc. Psychonauts travel through minds in the game in the form of astral projection, exiting their bodies and putting both the object and themselves into a trance-like state. Astral projection is represented in the game as a ghost-like apparition, similar to the psychic's physical body, which allows access to the mental worlds of others. Another way to enter psyches in this game is through The Brain Tumbler technology. It allows one to enter their own mind or some other already known minds through the collective unconscious.

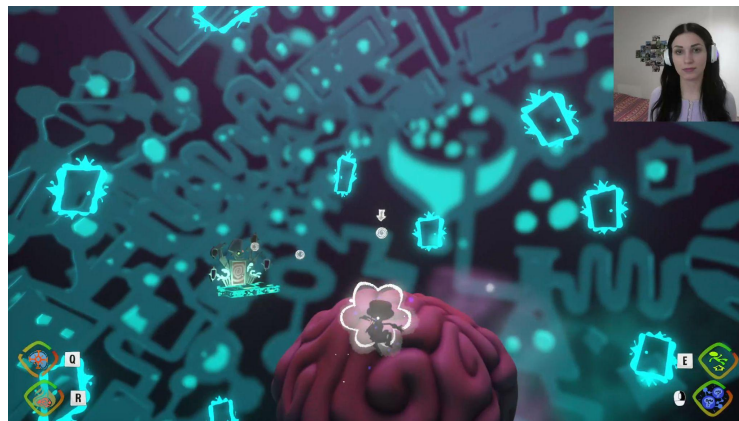


Figure 12: “Collective unconscious in *Psychonauts 2*.” Double Fine Productions, 2021. Author’s screenshot. March 21, 2023.

Psychonauts 2 reveals various principles of how the mind operates through procedural modes as solutions to puzzles or missions. In one of the episodes, the main character must persuade his internship mentor Hollis to allow him to participate in a mission at the casino. According to the mentor, going on a mission is too risky for the trainees, so Razputin decides to journey to Hollis's mind to change her opinion. He wanders off to the idea generation section, where the electrical charges induced by the brain's neurons flash in the background. This procedural mode in the game operates astonishingly plausibly. Our brain indeed works with electricity, that is, brain cells send electrical signals to each other. A person is born with a certain amount of unconnected neurons and neurons connect when a person learns something new, which is exactly how it is depicted in *Psychonauts 2* (Casey, 2015). In this corner of the psyche, Razputin travels from one cloud of thoughts to another, linking ideas with electrical stimulation in order to form a connection. Each cloud symbolizes the existing ideas in the mentor's head, such as money, death, delight, disgust, risk, mushrooms, socks in sandals, etc.

The procedure that needs to be done is to associate risk with money (which for now was connected with the idea of death in the mentor’s head) with the help of psychic power called *mental connection*. When this is accomplished, the mentor immediately receives the idea that going to the casino is risky, but taking risks can bring money, therefore everyone proceeds to the mission, and Razputin’s task is completed. This episode, in a simplified manner, allows one to play out the *mix-and-match* actions that take place in our world of ideas, where one person may associate risk with something negative, while another sees opportunities in it. It also demonstrates the proven fact that by revising one’s belief system, it is feasible to come to a different behavior and a new perspective on things. As Razputin phrases it, “If Hollis associated RISK with something more positive than DEATH, it would open her up to so many more missions. I mean, life experiences!” One could argue that there are countless such ideas in our minds that would be unattainable to reproduce in a video game; nevertheless, the very essence of this psyche’s aspect is well represented in *Psychonauts 2*.



Figure 13: “Mental connections in *Psychonauts 2*.” Double Fine Productions, 2021.

Author’s screenshot. March 24, 2023.

Most often, but not always, the psyches through which Razputin travels, to some extent, represent the most vivid memories or certain identity aspects of the owner of the psyche, by visually supplementing the psyche with evocative graphical elements that inspired the specific setting. For illustration, the villain Dr. Loboto, who is an unlicensed dentist and brain surgeon, sees himself as obsessed with dentistry and everything related to it, consequently, his psyche features elements such as mouths, teeth, tooth fairies in gangster characters, as well as various textual modes such as a poster to the surreal psyche’s walls featuring vicious dentist texts like “Shut it!” and “Only pigs squeal”, which the main antagonist whom Loboto works for allegedly had planted to force him to withhold important information.

Similarly, when Razputin travels through the mind of his mentor Hollis, it visually depicts a modern hospital, because, as it turns out, the mentor once studied medicine to become a doctor and that is where she got her best ideas (as she tells herself). She mentally lingers in those premises as she associates them with gathering grand ideas. Afterward, the same mindscape is casino-infused as all of the characters, in the physical world, travel to a casino and get vivid real-time impressions there. For example, in the X-ray room of the hospital, not bones, but cards are visible in the radiographic images, while in the hospital hall, doctors and patients with cards or tokens instead of heads watch a cardiology surgery, placing bets and sipping drinks at the tables.

	Procedural mode	Game-mechanics	Visual mode and graphics	Auditory mode	Textual mode and language	Kinesthetic mode
<i>Psychonauts 2</i>	<ul style="list-style-type: none"> engaging in conversions solving missions upgrading equipment and psychic powers following and fighting enemies searching for objects guiding by the map collection different useful elements found in the psyche 	<ul style="list-style-type: none"> walking jumping climbing gliding levitate interacting collecting items shooting fire-blasting throwing mind connection projecting telekinesing 	<ul style="list-style-type: none"> bright, cartoony settings and characters surreal environments mixed with various random objects switching between 3D and 2D camera perspective literally and comically illustrated processes taking place in the psyche meta-physical monsters as representation of doubts, bad ideas, inner judges, panic attacks 	<ul style="list-style-type: none"> fun, playful, upbeat background music dramatic music in perilous moments sounds of weeping of emotional baggages angry sounds and exclamations made by attackers Razputina's footsteps while moving and sound effects that occur when using his psychic powers 	<ul style="list-style-type: none"> a lot of conversation with other characters of the game, in the form of both audio and a chat box Razputin's comments about how he feels and what he needs to do as hints for the player textual information about objects found in psyches and psychic abilities 	<ul style="list-style-type: none"> a complex set of key combinations to move, interact and fight

Figure 14: Mode matrix of *Psychonauts 2* case study (Source: created by the author)

On the whole, each psyche is represented in the game relatively uniquely, and the characters and objects found in it are usually related to the profession of the psyche owner as the main determinant of identity. The game, therefore, seems to convey that it is the environment in which we find ourselves daily that shapes our personality the most. The decision to portray the psyche themed around their field of employment could be based on the opportunities that thus open up to depict each mind more or less singularly and distinctly or findings that our psyche is extremely influenced by the circumstances in which we live and the social group to which we belong. As much as we know about our psyches until now, in truth, our daily lives, perhaps not so much our form of employment, but certainly the people we spend time with protractedly, largely affect our personality and behavior.

It can be concluded from this that when exploring the psyches, they can:

roughly reflect the place where its owner is in real time,

reminisce memories,
build entirely abstract environments,
mix all of the above.

Most audiovisual modes found throughout the game, comically recreate various mind-related phenomena. To exemplify, the player has to find and collect emotional baggage in the game space, represented in the game quite literally, i.e., crying or sobbing suitcases, bags, and luggage. For each type of baggage, the player must uncover a corresponding tag to be able to sort it out and unlock an additional achievement. The Swedish author Orvar Löfgren points out that suitcases and various other types of bags, both in literature and art, very often act as a symbol of carrying belongings that we carry with us, like dreams, emotions, and ideals. Reflecting on the concept of emotional baggage, he states,

“It [a suitcase] can be many things: a distillation of the future, an icon of mobility, a last resort, a threatening or comforting object, a defense against a hostile world. It is an object into which affects and materialities are crammed and intertwined in interesting ways” (Löfgren, 2016, p. 126).

When studying the human psyche, the notion of emotional baggage is vastly used to explain the carry-over of negative experiences in life, relationships, or careers. It is reflected in a person's stance as if they are bearing a severe weight with them, and it can even prevent them from moving forward in life. Everyone carries unprocessed emotions from their past to some extent, yet emotions that are not dealt with do not simply disappear, they are stored in the subconscious (Folling, Solbjør & Helvik, 2015). Although emotional baggage occurs often in this game and in all psyches, it is not dealt with in any way and does not cause any problems for the player (if only it disturbs a little with its crying), it is only organized with appropriate tags that indicate the type of baggage, namely the suitcase tag, purse tag, etc. This game portrays this unwanted aspect of the mind as simply always and everywhere existing without really revealing what causes it or how to get rid of it. Furthermore, in *Psychonauts 2* consciousness and subconsciousness are not visually or spatially split as they were separated, for example, by Jung in his scheme of the psyche. Here they are depicted chaotically and emotional baggage and other similar elements can be found anywhere along the journey.

Likewise, half-a-minds run around the game area depicted as incomplete pink brains, for which the other half must be found. They are described as having lost their minds and when reunited they give the main character full mental energy of the brain. Ostensibly, these visual

fashions are not implied to be an undeniable part of the psyche, but rather the manifestation of wordplay or visual idiom. As publishing company *Merriam-Webster* explains *to have half a mind* is used linguistically to “express the feeling, especially when angry and annoyed that one would like to do something while at the same time not really planning to do it” (Merriam-Webster, 2023). Based on this explanation, one might as well assume that the half-brained creatures in the video game are running around embodying whatever things we would like to do, but which will not manifest in anything outwardly. This explanation could also be supported by the textual mode, which indicates that the reunification of the two sides of the brain provides full mental energy that may have previously been wasted in overthinking under the influence of anger or other strong emotions.

All of the recurring enemies are also portrayed humorously. In the game, one of the attackers, who sometimes drop out of the blue, are the inner Censors who are explained to be an integral component of any brain and who attack inappropriate thoughts, such as hallucinations. They are visually depicted as angry miniature people wearing business suits and glasses and holding a red stamp in the form of a “forbidden” sign. According to Razputin’s coach, they live in all minds and are stamping out things that do not belong. Censors could be portraying something similar to a mental immune system of a psyche.

Also, the main character must battle flying, insect-like creatures that deliver aerial attacks by dropping heavy weights with the word “regret” engraved in them. Textual modes explain that these are Regrets that weigh you down. In some psyches, there are also Deep Regrets dropping exploding bombs. Razputin is also attacked by tanky Doubts that “hold you back”, can sneak up, and are depicted as slimy purple monsters. In the game doubts or purple monsters interfere by appearing and slowing Razputin down. Another offensive manifestation of the psyche is Enablers who protect and enhance other negatively reflected aspects of the mind, such as thought censors. They are defined as those who support negative thoughts, depicted as a monster cheerleader in a pink costume blowing loud horns and singing rhymes like “Censor, censor, clean the mind! Kill the thoughts that aren't our kind!” and “Think, and think, and think some more! Doubts will stick you to the floor!”.

Similarly, just as Razputin expresses the statement that one of his intentions was a bad idea, a monster with sharp teeth, long horns, red eyes, and red glowing light bulbs on his back appears in front of him, symbolizing a Bad Idea that, as its description states, is “exploding right in your face”. The monster fires red exploding lightbulbs, where the lightbulbs semiotically often represent ideas, while the red color designates a negative or dangerous

marker. Challenging opponents that inhabit psyches are also Bad Moods. They are portrayed as black clouds with angry faces. Bad Mood can make Razputin blind, by releasing a dark formation of energy onto him. The player must find the cause of its occurrence in order to destroy it. Amusingly, when Bad Mood is viewed through one of Razputin's psychic abilities "Clairvoyance", which allows one to see the world through the eyes of another, it is relieved that this enemy sees Razputin as Sigmund Freud, the founder of psychoanalysis. This episode is a comic *Easter egg* considering the theme of the game.

If most of the game's opponents are seemingly self-explanatory, then the Enablers and their chanted slogans lead to thinking of patterns of self-destructive behavior or negative attitudes, where scholars often use the concept of *catastrophizing*, which manifests as "negative repetitive thinking, which is abstract, intrusive, and difficult to disengage from" (Flink, Boersma & Linton, 2013). As evolutionary psychology explains, our psyche has a survival drive that prevents us from forgetting negative experiences and forces us to assess the risks in each situation in order to avoid similar dangerous situations in the future that could threaten us physically or psychologically. However, living in the Information Age, intrusive negative thoughts can be the result of cognitive distortions or the formation of irrational thoughts (Clark, 2020). In *Psychonauts 2* Enablers stimulate negative manifestations such as Doubts and Regrets, thus embodying those drives or mental entities that contribute to *catastrophizing*.

Another of the attackers in this game are Panic Attacks, which "come out of nowhere", are extremely mobile, their attack patterns are difficult to calculate and can duplicate themselves, thus gaining strength. They are visualized as colorful dragon-like creatures with bright yellow eyes. Panic Attacks have deliberate chromatic aberration shading applied to make them seem disorienting. They are found in minds with a large number of overwhelming emotions or sensory overload. Even Razputin himself, if he fights with these creatures unscrupulously, can experience a panic attack paralyzing his actions. The choice to textually describe these in-game characters as appearing for no apparent reason echoes the unpredictability of panic attacks, and the feelings a person experiences are out of proportion to the real situation and may not even be related to what is happening around them. Also, Razputin's loss of control over himself reflects the sense of unreality or depersonalization caused by panic attacks (Mathew & Warne, 2014).

As Razputin travels to agent Compton's mind with a mission to soothe him or do a "wellness check" as he appears to go through a panic episode, he meets a Judge, the first boss fight in the game. Judge is described as cruel and unusual and depicted as a massive humanoid

monster with yellow, glowing eyes and a big gavel in his hands. They manifest as judgmental behavior in their host's mind either as self-judgment or third-party judges. Compton's psyche is home to many such inner judges, represented by an entire scene: a televised show called "Ram it down!" takes place in the mind, where three judges order a special dish to be prepared. The judges are depicted as animal puppets, while in the audience sit various food products that are eager to be chosen for the recipe. Agent Compton, the host of the specific psyche, seems to be struggling with inferiority complexes and feels petrified in front of judges, albeit in the form of puppets, as well as not thrilled about being forced into this TV show. The judges also make remarks like "He'll never do it!" indicating the agent's unease and overly harsh self-judgment.

The way all these attackers playfully hinder and prevent the main character from reaching his goal, makes us wonder how these intrusive, negative, figuratively speaking, creatures inhabit our minds, weigh us down or hold us back, much like it does in the game. Comparative self-analysis, negative self-evaluation, evaluation of one's work, and negative self-judgment lead to rumination and worry (Barcaccia, Baiocco, Pozza, Pallini, Mancini & Salvati, 2019). Although self-criticism is a normal part of the psyche, such extreme self-judgment, as depicted in *Psychonauts 2* in Compton's persona, causes the owner of the psyche to lose all self-confidence and leads to sadness. At the end of this episode, the agent pulls the puppet master off his arm, thereby revealing that he has defeated his vile inner judge.

In *Psychonauts 2* game-mechanics as modes exceptionally vividly express specific manifestations of the psyche. For example, one of the game-mechanics that can be used in the game is Levitation, which takes the form of a balloon-like bubble that lifts Razputin into the air and allows him to fly for a short time. As the main character points out in a conversation with one of the lead psychonauts Milla, this game-mechanic occurs when he focuses and thus allows his thoughts to lift him up. That is, the balloon that Razputin clings to is made of concentrated thoughts. Hence, with the help of explanatory textual mode, the game-mechanic, which could also be described as simply flying, is given a deeper meaning. Gliding as a game-mechanic functions similarly, which is realized in the game as sliding on a magic ball (as mentioned before Razputin is also a trained acrobat) to move quicker. In the conversation with Milla, it is pointed out that there is chaos in every psyche, as well as hazardous paths, and Razputin must learn how to "roll with it". When he collects his thoughts, they gather into a ball and he can then roll with them avoiding dangerous surfaces.

A game-mechanic “Projection”, which becomes available to the player towards the end of the game, addresses the archetypes defined by Jung that are summoned from the subconscious, such as the Hero, the Explorer, the Shadow, or any other archetype needed in the challenge. In the game, Razputin summoned archetypes are depicted in the same form as himself, only in a paper-thin format as a cartoonish caricature. According to Jung’s theory, archetypes are formations, motifs, and combinations of the psyche characterized by omnipresence. In *Psychonauts 2*, the archetypes summoned by Razputin can enter anywhere (ubiquity), so they help open up new areas of the game. The Shadow, which also appears in the game, is among Jung’s main archetypes as the unaccepted and rejected aspects of the personality and are in contrast with the Person archetype (Robertson, 2016, pp. 148-152).



Figure 15: “The psyche of agent Hollis in *Psychonauts 2*.” Double Fine Productions, 2021.
Author’s screenshot. March 17, 2023.

An interesting episode that the creators of *Psychonauts 2* let playing out is entering a brain that belonged to someone who has already died. A scientist is experimenting with the brain, which is kept in a special solution, thus supposedly preserving it in good condition. Initially, when Razputin enters the brain, he is surrounded by complete darkness and emptiness. Then a small orb of light appears and begins to speak indistinctly, although the speaker does not remember the words well and does not know who he is. Razputin says to the mote of light, “I believe you are suffering from extreme sensory deprivation”. This scene seems to represent pure consciousness, unattached to any body or identity, yet still somehow present in the brain in this game.

Razputin’s journey through the psyche of one of the oldest psychonauts, agent Ford Cruller, is also unusual. He has either learned or accidentally split his mind and divided himself into multiple personalities, which no longer allows him to be active as a psychonaut due to his own unstable, shattered mind. Cruller’s fractured mind reflects Multiple Personality Disorder,

which reveals multiple alter-egos, with each alter-ego represented by its own separate, independent mind. Cruller's four main identities - Bowler Cruller, Postman Cruller, Hairdresser Cruller, Grave Digger Ford - are each related to the jobs he does. Razputin's mission is to unite them into a single personality. In the mental fragment of each personality, in the center, a tall landmark reminiscent of Cruller oversees what is happening. Razputin's task is to enter the head of this psychic object and collect the shards of glass to create a mirror in which Cruller can see himself as a single whole.

Cruller's psyche initially reveals a disorganized, jumbled room full of a sea of letters, mailboxes, typewriters, as well as a giant robot (one of the overseeing landmarks) that sorts the mail and looks like Cruller. Later, Razputin is moved to the cemetery, where he is even pushed into a dug grave and buried with an incomprehensible intention. When digging out of the grave, the main character finds himself in a deep gorge, where he can land in various rock caves located along the walls of the gorge. Each cave symbolizes Cruller's alter-ego, for example, one shows a dark bowling alley with illuminated electric lamps, on which Cruller himself is lying on his back with a bowling ball in his hands, while another cave illustrates a barber's shop and Cruller dressed in a barber's suit with hairdressers accessories. In the next cave, a giant typewriter can be seen, on which the owner of the psyche is sitting in a postman's uniform. Finally, at the bottom of the gorge, Razputin falls back into the grave containing the coffin. Ostensibly, the gorge with its caves signifies the merging of all personalities in one place, since after this episode Cruller retains his main identity as a psychic agent and the rest of the alter-egos have merged into one.

Similarly, for another agent, Cassie, her mind is represented as a large library, where the main inhabitants are books, archetypes in the form of flattened paper figures and bookworms. In her psyche, agent Cassie carries various personalities or archetypes - writer, teacher, librarian, and deceiver, which are represented in her mind as living pieces of paper, fitting into the theme of the library. Here, though, it is not described as a split personality, but rather as different facets of one personality, both positive and negative, that collectively form one identity. In her mind, textual modes play a big role in conveying the message, where the main character says that he wants to find the real Cassie, to which Teacher Cassie replies to Razputin, "Tell me, who is the REAL Razputin? The one you are with your friends? With your family? Or the one you save for your special someone? [...] Or are you actually a combination of all those different identities?" Razputin's goal is therefore to reconcile Cassie

with all the facets of her personality, where all of them, although dissimilar, together form “the real Cassie”.

Another psyche for Razputin to explore is that of agent Bob. This man has experienced the psychological trauma of participating in a battle, losing many of his friends, and has thus withdrawn from all humans, practicing herbaphony and psychic botany instead. Plants have become the closest to him instead of people, but although outwardly Bob is very insecure, aloof, and not ready to accept help, inwardly he exposes himself as awkward but longing for the other’s presence and understanding. In the agent’s mind, his emotions and past traumas are depicted in an ocean setting, where Bob alone plants stunted plants in three huge flowerpots on a desolate island. As Razputin lights the fire, Bob states, “Starting a signal fire? I tried it. No one comes.” With this seemingly insignificant action and text, it seems to metaphorically indicate that he has sent signs to others, calling for help, but to no avail. Razputin promises Bob to find seeds for his plants and goes to the ocean to find them. Various islands are found in the ocean, which are meant to be Bob’s memories of the different people who rejected him. On the islands, there are also enormous bottles washed up by the sea (possibly from Bob’s past) that Razputin is committed to enter. Unexpectedly, a large moth emerges in front of them protecting Bob’s most painful memories and preventing Razputin from accessing them. The pattern of the moth resembles Bob’s face, suggesting that it is also part of his being. Ignoring the moth’s objections and reaching these memories, unfolds a swamp where the wetlands are filled with alcohol instead of water and where Bob’s mother’s funeral is taking place. Later, when sneaked into other bottles, nightmarish memories of being fired by Bob’s boss and losing his husband are revealed in the same alcohol swamp environments. Bob’s mind is also the first where a Bad Mood appears, which the moth desperately wants to avoid and which occurs as soon as Bob recalls the painful memories. In each of these painful memories, there is a shining seed that Razputin brings to Bob, who then plants them in his flower pots. From them grow plants resembling his mother, boss, and husband, which together create a mega monster *Truheltia Memonstria* (etymologically formed from the words *memory* and *monster*), which is described as “painful pots full of memories” calling a new boss fight. The humorous view of this mental battle also unfolds after the monster of painful memories is defeated. An ocean of dozens of similar seeds opens up to Bob, looking at which he states, “Well. I’ll just take ‘em one at a time.”

Razputin’s description of this mission in a sense conveys what is meant by these visual images, “If I can help him [Bob] pop the cork on those bottled up memories, and weed out

some demons, maybe he will blossom again”. In this way, both textual modes and audiovisual modes concur together to create a meaningful narrative. The lonely island symbolizes Bob’s isolation from the rest of the people, while the bottles can function in two ways: both as old memories and as a reference to the consumption of alcoholic beverages, which Bob has practiced to drown out the most painful memories. Moth, as a protector that prevents access to seeds or traumatic memories, could be the process of the psyche that wants to protect our consciousness from great upheavals that later reveal themselves, in the form of Truheltia Memonstria. At the same time, the way the moth covers Bob’s eyes during the fight can also be a representation of Bob’s denial or escapism into alcoholism, who, as seen visually in the game, has drowned those memories in alcohol.

Psychonauts 2 also portray the darkest aspects of the psyche as a desire for destruction and dominance. The main antagonist of *Psychonauts 2* Maligula is described as a normal part of the psyche, except, in this case, as an extreme lust for violence and destruction that has manifested itself into a fierce villain. Razputin declares she should be located in the primitive part of the brain and tells her, “Everybody’s got something like you. We just know how to keep it where it belongs.” After these words, Maligula is pushed into the depths of darkness extending far down. This raises the question of what normal part of the psyche Razputin is referring to when talking to Maligula. One version could be the potential for evil in man. *Psychonauts 2* offers its own version of how it burgeons in a person - growing out of a desire for violence and destruction. Similar to how it is depicted in the narrative of the game, it is most often explained in psychology that evil grows in the human psyche under the influence of a negative action created by a person himself. Although this question is discussed more in theology than in psychoanalysis, Jung also spoke about evil, stating, “[...] in the darkest Middle Ages [...] they spoke of the devil, today we call it a neurosis” (Jung, 1933, p. 309). With the devil, he also describes the grotesque and threatening side of the unconscious, which is possessed by everyone, is autonomous and closely related to the human shadow, and, in his opinion, it is precisely the ignorance and non-recognition of one’s shadow or dark side that causes it to grow in size (Jung, 1946, p. 388).

As broadly discussed, this game incorporates and makes playable a large number of basic elements of the psyche such as internal censors, doubts, judgments, regrets, repressed memories, unfinished emotional issues, bad ideas and moods, as well as various types of mental disorders, i.e. PTSD, panic attacks, reconciliation of personality facets, dissociative identity disorder (DID), addictions, desire for destruction and others. This is done by directly

referring to the most notable psychoanalysts: the integration of Jung's theory of archetypes and including Freud as one of the characters of the game. Although the game is made comically and upbeat, it mainly reflects an unhealthy psyche and terrible psychological disorders, perhaps with the intention of making the gameplay more exciting or suggesting that we each have our own *bats in the belfry*. On top of that, the creators of the game have been able to incorporate a startling number of psyche aspects, not only audiovisually or textually adding them to the game narrative but also with the aid of such intricate modes of expression as game-mechanics and procedures. Furthermore, humor in the game acts as a healthy prism from which to consider evidently everlasting and self-propelled activities of the psyche, offering to interact with them ludicrously.

DISCUSSION

This section will consolidate the main empirical results through comparative analysis. This study's findings illustrate how video games as a medium are able to reflect almost any of the key concepts of Jungian psychoanalysis (such as the role of dreams in revealing the unconscious part of the psyche, existence of archetypes, trauma-induced disturbances in a person's connection with the ego and self, etc.) and offer to interact with it, constructing the human mind as a playable game field. As the completed empirical studies reveal, through various modes of expression and especially medium-specific modes such as procedural modes and game-mechanics, the psyche is used for various purposes: to provoke, to intimidate, to amuse, make the player think about the principles of the structure of the human mind, draw associations with one's own psyche and cognitive patterns or to *place the player in another person's shoes*, be it an individual with a traumatic experience, oppressed by depression or affected by a personality disorder.

As was revealed in the theoretical part of the thesis, the human psyche is still a relatively unexplored research object, where each psychoanalyst offers their own interpretation or vision of how the human mind operates. Also, the mind-body interchange and the extent of their connection are still debated (Kirk, 2014; McLeod, 2018). Nonetheless, when studying the theoretical materials, it can be seen that the majority of representatives of modern psychology widely refer to the basic premises of Freud's and Jung's theories, which were also repeatedly observable in the reviewed video games, especially in their representation emphasizing the psyche as a *deterministically chaotic system* (Quinodoz, 1997; Spruiell, 1993).

Within the framework of this work, looking at video games as unique multimodal media, the analysis of the relevant literature allowed me to conclude that video games are indeed able to function both as reality simulators and as a provider of alternative worlds and unprecedented experiences (Aarseth, 1997; Salen and Zimmerman, 2004; Muriel and Crawford, 2018). This can be achieved by creating elaborate and interactive virtual worlds that enable the player to immerse and engage in the gameplay in a multisensory manner, thus offering even an unprecedentedly rich spatial representation of the human psyche, however the game authors decide to render it.

When performing a comparative analysis between the conducted case studies, several discoveries hint that although the themes related to the psyche are often the same in the games, most often various sensitive topics - trauma as a central theme - it is the aesthetics of

the game, the overall narrative and modes of expression that reflect the psyche as delightful and amusing or, on the contrary, as a depressing and unnerving game setting. This finding, while preliminary, suggests that in creating the desired image of the psyche, it is not so substantial which aspects of the psyche the game uses. Instead, the way its modes are expressing it, as well as the context of the story it is woven, is more important (see Annex for *Mode matrix of case studies*).

In describing the results of the three conducted case studies, they show that psyche is most often depicted in a dark aesthetic to instill fear and shock in the player. This is arguably a design choice, and it could be tied to the aesthetic goals of the game. Namely, if the game aims for a horror fiction game designed to scare the player, it will prefer to emphasize the most dreadful states of mind and its manifestations additionally portraying them gruesomely. However, the three case studies considered are a small number to draw broad conclusions about video game creators choosing the psyche as a reasonable and advantageous game environment largely for psychological horror or similar genres. There is abundant room for further research seeking to determine which genre of games most often explores the theme of the psyche. As demonstrated by *Psychonauts 2*, which is also an extremely popular video game (as was its first edition, *Psychonauts*), the psyche, if skillfully exploited, is also an opportune game setting for the comedy genre.

A further novel finding is that all three games under investigation are narrative-based and textual modes play a primary role in explaining and developing the story, as well as in helping to understand what part of the psyche is being represented. This leads to the conclusion that the psyche is a sufficiently complex and enigmatic phenomenon even for the medium of video games, which has a wide range of modes of expression at its disposal, requiring an active integration of spoken and written language alongside its other modes to assist in generating meanings about what is occurring in the game. Continuing to look at the impact of modes in this type of games, all case studies indicate that, generally, audio modes act as minor as opposed to all others, with the principal function in enriching and augmenting gameplay procedures or graphics.

Along with that, if *Nevermind* and *When the Darkness comes* have more emphasis on visual modes in the playability and reflection of the psyche, *Psychonauts 2* utilizes procedural modes and game-mechanics to a greater extent, leaving the audiovisual design secondary in representing the psyche. That is why the first have placed a much stronger focus on the artistic visual representation of the psyche as the game's exploration area than on the player's

capacity to interact with the virtual psyche, while *Psychonauts 2* seems to have sought a more challenging approach, portraying the psyche through player interactivity, where the specific rules and the player's actions simulate the processes of the psyche. Speculating, this might be due to the fact that the first two mentioned games are low-budget indie games, being less able to afford to experiment with more complex modes like game-mechanics.

The most obvious finding to emerge from the analysis is that in all the reviewed games the psyche is depicted as relatively one-sided - either as a strongly positive and frivolous place to be or melancholic and dismal. This could be the most conspicuous instance of how the psyche in games differs from what we know scientifically about the fact. As mentioned in the literature review, the psyche is not unequivocally full of downbeat factors or, on the contrary, bright and pleasant, if at all it is constructive to discuss the human mind in such terms. At the same time, it can be presumed that, for example, under the influence of severe psychological trauma or depression, a grim mood prevails in the psyche, which interprets everything happening in the outside world as negative, depressive or threatening.

It is known that video games can aim to virtually simulate physical reality as accurately as possible or, on the contrary, to create an absolutely new realm produced by imagination. (Jones & Osborne, 2020) Since no one truly knows exactly how the psyche operates, it can be argued that the creators of the video games discussed in this work have given free rein to their imaginaries of what the world of the psyche could be, while still striving the representations match what we know about our minds for the player to be able to translate it as psyche. One of the techniques, which could be loosely called simulating actual reality, is the evident inspiration of video game creators to construct the psyche similar to the way we visually experience dreams (episodic, symbolic, analogous to reality, but distorted), which allows the players to associate the game space with a dream.

As the findings of this work indicate, in video games the psyche is represented semiotically, just like in dreams - full of various difficult-to-interpret symbols, images, and significations. Video games are also created in a surreal manner, consisting of various components familiar to the character, but simultaneously displaying a lot of mystical, mythical, and deformed. However, in each of the case studies, the extent of the use of symbols is different. If in *Nevermind*, almost everything observable could be seen as symbols, then, for example, in *Psychonauts 2*, states of the psyche are mostly encloded in the form of diverse game characters or depicted quite literally or iconized as playable objects, creating a comic effect.

It is interesting to note that all three case studies of this thesis reflect the characteristics of the psyche such as chaos and unpredictability in the basic structure of their games. This is most often done by giving each new mental landscape (intended as a different layer of the psyche) and/or each individual's psyche a separate set of rules and a new graphical representation. Prior literature studies noted that the psyche is a *deterministically chaotic system*, thus one can rather only offer versions, and give probabilities about it. And also in the case studies of this study, the psyche is depicted as a deterministically chaotic system. There is a wide question of to what degree one can unambiguously state something about the psyche. Even in psychology, the psyche is a relatively recent object of scientific research and so much is still unclear about this aspect of human structure.

Also, all the considered case studies show that the psyche is represented as autonomous and as occasionally attacking the player, no matter what role they play in the narrative of the game. All the extraordinary properties of the psyche make the concept of the *magic circle* used in ludology (discussed in chapter 2.3. Specificity in building a playable game space of this work) particularly beneficial, which transports the player into an entirely different reality with regularities to any extent (or without any regularities at all). This advantage of video games is continually mentioned in the sources, as one of the main motivations why video games are consumed, i.e. to get experiences that could not be gained through any other channel (Muriel & Crawford, 2018, p. 86).

All case studies' games also confirm the assumption in game studies that video games offer embodied, corporeal, and immersive experiences, allowing illusory spaces to be experienced spatially, involving all the senses. This is especially vividly manifested in the games discussed in this work, which allow the player to experience a space, i.e., the psyche (disembodied in the real world) with multisensory stimuli. Furthermore, in *Psychonauts 2* the mind is represented as full of archetypes and astral projections in fully bodily forms, which likely indicates the intent of the game authors to reveal the psyche as closely interconnected to the body or as one whole, in contrast, to the other two analyzed games, in which mind and body are detached, or at least absent of any reference to the individual's body.

At the beginning of this study, the hypothesis was put forward that in video games where the center of the ongoing events is the psyche, the mind becomes not only playable and explorable but also analyzable. As the obtained results show, the creators of the games offer to look at the psyche through their perspective and to observe both the truths we ourselves recognize about our minds as well as their interpretations and suggestions of the topic. For

example, *Psychonauts 2* interactively and with ease portray such emotional states emerging in the psyche as doubts or regrets, which, in this case, are chosen to be presented negatively as undesirable states. Although we know that such states exist in our psyche, their illustration is the game authors' version.

In addition to that, another question was raised within the framework of this research about whether such games, based on the psyche chosen as the space, allow self-reflection and could cultivate empathy. Based on my qualitative analysis, it can be claimed that such games undoubtedly "bring to light" the effects of trauma on the psyche, the nebulousness of the mind, the oppressive extent of depression and anxiety, as well as various personality disorders. For instance, in *Nevermind*, the player is indirectly informed that trauma can only be resolved by recalling fragments of many different memories, which is portrayed as a displeasing and frightening process as the player enters the dark depths of the mind, not knowing what to expect around every corner. This can be discussed with reference to the opinions of psychology experts mentioned in previous chapters about how unreliable a person's memories might be and whether they are actually repressed. Similarly, *Psychonauts 2* depicts personality disorders such as dissociative identity disorder, naturally in a format that is convenient for them (as separate caves, each inhabited by a different variation of the particular psyche's owner, each with its own identity and personality traits); nevertheless, it can make one consider how unusually the psyches of this type of people operate. The game *When the Darkness comes*, out of all other case studies' games, is presumably the most capable to cultivate empathy in players. This is due to various factors. One of them is the author's personal interaction with the player, introducing them to his psyche and revealing its contrast with what is heard and what is visible in the psyche, for example, the spoken warm welcoming text, opposite the inscriptions on the walls of the psyche, declaring "Leave me alone, please". Also, the game holds a direct and unambiguous content with the indication that thoughts of self-harming are always countered by the choice of getting help, offering the player to play out both scenarios and experience their consequences.

Having said that, even if the player has some insight into the basics of psychoanalysis, it is sometimes difficult to determine to what extent the psyche depicted in the game corresponds to the scientifically established and what is the fantasy of the game authors, about how it could be. Nevertheless, as the study of psychology materials revealed in this work, the ability to visualize and clothe in symbols the content of the mind, so that it manifests itself in an external, artistic form (as abstraction, images, word combinations, etc.), helps us to

understand and be aware of what is going on in our minds, similarly as we are hardwired to do so in the process of dreaming. It could thus be argued that in video games, too, it is not so critical how the psyche is represented, but rather how it evokes various associations and reflection, allowing one to be more in touch with their psyche.

The results of this study are significant in at least two major respects. First, the examined video games prove that, due to their exceptional medium-specific modes, they are able to offer a uniquely intense interaction with a simulation of the psyche that demands an active engagement and participation of the player. These results are consistent with prior findings in game studies that have pointed to the distinctive ability of video games to offer unprecedented, embodied experiences. It also allows educating a vast part of society about the processes taking place in the psyche and its potential disorders, raising awareness and making people conscious about how they and their fellow human beings operate. Second, the conclusions I was able to reach about the wide range of lenses through which video games are capable of reflecting the psyche (as demonstrated in this work's empirical chapters) substantiate that video games as an influential media technology and cultural force facilitate the discourse about the controversial human nature, the mystery of our psyche and lead to contemplate how much there is still unknown.

This study set out with the aim of assessing how the psyche becomes playable in video games, encountered some limitations such as the difficulty of evaluating the truthfulness of the game's portrayal of the human mind due to the ambiguous relative opinions of psychic researchers. This is an important issue for future research. Furthermore, the qualitative analysis of case studies presupposes a subjective interpretation, where certain episodes could be interpreted differently by each player, as is often the case with many art forms. There are still some unanswered questions about whether such games could also be misleading in their portrayal of the psyche, although, none of them claim to be a scientifically based simulation of the psyche but refer to being created together with psychology specialists or based on personal experience.

It would be possible to further develop this research by investigating whether these types of games have any therapeutic value, as well as to study in depth their ability to increase empathy towards people with mental struggles or disorders, which would necessitate involving participants and measuring their impressions. In addition, as these games contain sensitive content and include a disclaimer about its presence it would be worthwhile studying how these kinds of games contribute to placing sensitive content in an industry that is

commonly regarded as pure entertainment and raising its perceived level of maturity to one that merits greater respect and recognition.

CONCLUSION

This study sought to elaborate on how video game developers use the psyche and its elements in the development of their virtual realms to create engaging gameplay that contains meaning or added value. In order to determine how the psyche is reflected in video games and how it corresponds to the findings that have been uncovered to date about this aspect of human nature, the study of theoretical materials was used, crystallizing the main discoveries in cognitive psychology and psychoanalysis, as well as outlining the main principles for creating playable virtual spaces and mental landscapes. Along with that, an empirical study was conducted using multimodal discourse analysis to determine how the psyche becomes playable in three different case studies. Lastly, a brief comparative analysis made it possible to draw comprehensive conclusions about the strategies and techniques of video game developers in reflecting the psyche.

The literature review provided insight into various theories that have been formed about the psyche and its constituent components. Mainly the theories of Freud, Jung, and Plotkin were reviewed along with definitions and characterizations of trauma and dreams as those are considered common psyche-related themes in video games. Academic works that discuss the construction of spatial and immersive video game environments were also examined as an essential conceptual framework for conducting the qualitative analysis of the empirical part of the work.

The qualitative case studies turned out to be a successful method as it was able to identify the principal means of how the modes of video games create the psyche a recognizable space with certain aesthetics and various integrated mechanics. From the results, it is clear that multimodal discourse analysis is very applicable for an in-depth study of video games because it allows the examiner to analyze each of its elements separately before viewing them as a whole. That provides an opportunity to determine the role and direction of action of each mode in generating meanings and highlights the uniqueness of this medium, as well as to later determine whether mostly multimodal redundancy (where every mode operates for the same purpose) or functional specialization is displayed in the game (Norris, 2019).

The case studies illustrated that several aspects of the psyche were reflected clichéd or literally, while other elements were contained in symbols and enigmatic images. The games pick certain elements of the mind and possibly even name them, but then play around with them how it best fits the game's narrative or aesthetic. Nonetheless, all analyzed video games

portrayed psyches as chaotic, autonomous, and attacking the player for self-defense, but in each game, these characteristics were portrayed in a different atmosphere and corresponding aesthetics, namely, instilling terror in the player as in *Nevermind*, creating sympathy in *When the Darkness comes*, and sincerely amusing in the representation offered by *Psychonauts 2*. In addition, case studies demonstrated the impossibility to determine the central mode of expression that most effectively represents the psyche in video games, because in each reviewed game all modes were widely involved in generating meaning with a different emphasis in each game. Meaning each game had a different mode that made the strongest impression by conveying significance powerfully such as visual mode (*Nevermind*), textual mode (*When the Darkness comes*), or procedural mode and game-mechanics (*Psychonauts 2*).

This analysis found evidence for the potential of video games to make their players contemplate how much of their psyches are unconscious and uncontrollable. The case studies of this thesis suggest this medium can help people become aware of the depths of the mind, reflect on how past events have consequences on the psyche, and how we deal with post-traumatic stress. Moreover, the human psyche proved to be a workable and imaginative setting for video games, because this environment is relevant to everyone, it is startling, unpredictable, fascinating, little explored, in reality, and thus has a large unrestricted space for interpretations.

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ANNEX

Mode matrix of case studies

	Procedural mode	Game-mechanics	Visual mode and graphics	Auditory mode	Textual mode and language	Kinesthetic mode
<i>Nevermind</i>	<ul style="list-style-type: none"> • “traveling” to patients’ minds • exploring the psyche • combating with the mind • collecting fragments of patients’ memories • piecing together each patient’s traumatic narrative 	<ul style="list-style-type: none"> • walking • collecting items • carrying • solving puzzles • shooting • interacting • clicking and dragging • dodging 	<ul style="list-style-type: none"> • haunted forest filled with unusual statues • an abandoned city in depressing tones full of mannequins • a distorted childhood house • ghostly amusement park 	<ul style="list-style-type: none"> • dark ambient music • mysterious whispers • baby cries and laughs • people shouting clues • random, out of place noises • creepy doll-house music • gunfire 	<ul style="list-style-type: none"> • patient descriptions • patients telling of a traumatic experience • patients’ revelations after resolving past traumas • subtitles for what is being said • an explanation of how you want to interact, e.g. “push” • writings on walls/streets 	<ul style="list-style-type: none"> • using hardware to navigate and move • listening to which side of the headphones the horn is blowing to escape the maze • holding the right click of the mouse to carry an item • allowing the webcam and heart rate sensor to read the sensations
<i>When the Darkness comes</i>	<ul style="list-style-type: none"> • walking around the rooms/towards a target • respond to the author’s spoken instructions • answer questions by pressing buttons 	<ul style="list-style-type: none"> • walking • jumping • evading • interacting 	<ul style="list-style-type: none"> • abstract, simple, dark, dimly lit rooms with bright contrasts • computer display and graphics • fast altering mindscapes • glitched environment in some places 	<ul style="list-style-type: none"> • sounds of the player’s footsteps when moving around the room • the voice of the creator of the game • piano music and stringed instrument melodies • the ticking of the clock • loud, sudden and sinister noises 	<ul style="list-style-type: none"> • enigmatic inscriptions on the walls of the game space • spoken narrative and interaction with the player • questions hanging in the air • chapter titles 	<ul style="list-style-type: none"> • using hardware to navigate and interact • bodily reactions to jump-scares • restlessness in the body at times when the game gives off tense overtone
<i>Psychonauts 2</i>	<ul style="list-style-type: none"> • engaging in conversions • solving missions • upgrading equipment and psychic powers • following and fighting enemies • searching for objects • guiding by the map • collection different useful elements found in the psyche 	<ul style="list-style-type: none"> • walking • jumping • climbing • gliding • levitate • interacting • collecting items • shooting • fire-blasting • throwing • mind connection • projecting • telekinising 	<ul style="list-style-type: none"> • bright, cartoony settings and characters • surreal environments mixed with various random objects • switching between 3D and 2D camera perspective • literally and comically illustrated processes taking place in the psyche • meta-physical monsters as representation of doubts, bad ideas, inner judges, panic attacks 	<ul style="list-style-type: none"> • fun, playful, upbeat background music • dramatic music in perilous moments • sounds of weeping of emotional baggages • angry sounds and exclamations made by attackers • Razputina’s footsteps while moving and sound effects that occur when using his psychic powers 	<ul style="list-style-type: none"> • a lot of conversation with other characters of the game, in the form of both audio and a chat box • Razputin’s comments about how he feels and what he needs to do as hints for the player • textual information about objects found in psyches and psychic abilities 	<ul style="list-style-type: none"> • a complex set of key combinations to move, interact and fight