

Article

Liminality and the metaverse: An analysis of mytho-liminal and mystic-liminal games and their impact on player identity

Nataliia Kravchenko^{1,*}, Oksana Chaika¹, Oleksandr Yudenko², Oleksandr Muntian³¹ Department of Foreign Philology and Translation, National University of Life and Environmental Sciences of Ukraine, 03041 Kyiv, Ukraine² Department of Language Training, National Academy of Fine Arts and Architecture, 04053 Kyiv, Ukraine³ Department of Philology and Translation, Institute of Law and Modern Technologies, Kyiv National University of Technologies and Design, 01011 Kyiv, Ukraine* **Corresponding author:** Nataliia Kravchenko, nkravchenko@outlook.com

CITATION

Kravchenko N, Chaika O, Yudenko O, Muntian O. Liminality and the metaverse: An analysis of mytho-liminal and mystic-liminal games and their impact on player identity. *Metaverse*. 2025; 6(1): 3102. <https://doi.org/10.54517/met3102>

ARTICLE INFO

Received: 26 November 2024

Accepted: 8 January 2025

Available online: 5 February 2025

COPYRIGHT



Copyright © 2025 by author(s).
Metaverse is published by Asia Pacific Academy of Science Pte. Ltd. This work is licensed under the Creative Commons Attribution (CC BY) license.
<https://creativecommons.org/licenses/by/4.0/>

Abstract: The article explores the impact of liminality in immersive games on players' identity from two perspectives: overcoming liminal phases associated with the initiation of a character in games with a narrative-plot architecture that reflects the universal stages of the hero's "journey"; and overcoming liminality in survival horror games, where players use the virtual world to experiment with their psyche. It introduces and substantiates the terms of mytho-liminal and mystical-liminal games, assessing their positive and negative effects based on data from semi-structured interviews with student groups, totaling 120 informants. After processing the interview data and deriving quantitative indicators, the findings were refined and justified through the lens of research on liminal states, game psychology, and psychological studies on out-of-body experiences in virtual reality. It has been found that the positive effects of mystical-liminal games include the experience of emotions unattainable in the real world, development of coping potentials, working through unconscious conflicts and psychological traumas, and strengthening the moral imperative with a clear distinction between good and evil. The negative impact of mystical liminality manifests in feelings of fear, tension, and discomfort during gameplay, feelings of helplessness and frustration in cutscenes, and cognitive stress due to disidentification with the projective identity when the player's "positive" avatar is transformed into an immoral character. The positive effects of mytho-liminal games include: enhancement of the sense of subjectivity, awareness of an ideal to emulate, strengthening of the value component of personality, development of creativity and problem-solving skills, unleashing positive potential of latent, unrealized possibilities, development of communication skills, and liberation from social conventions. Negative effects include self-dissociation and depersonalization in both psychological and physical terms, realization of latent destructive needs and deviant behavior, and the substitution of real initiation—finding one's "self"—with pseudo-initiation through gameplay. This research provides insights into the intersection of liminal and virtual realities, shedding light on the psychological dimension of liminality in video games and enhancing the overall understanding of the liminality role in the virtual context.

Keywords: liminality; mytho-liminal games; mystical-liminal games; monomyth; the player's identity; positive and negative impact

1. Introduction

The possibility of studying the metaverse as a co-reality between the real and virtual worlds through the lens of liminality is explained, on the one hand, by the "coordinating role of liminality for any type of reconstruction and renewal of models and paradigms" [1] (p. 126), and, on the other hand, by the ontological characteristics

of the liminal phase as a transitive, ambivalent zone, “betwixt and between,” preparing the transition beyond the established system toward an alternative. In this vein, the liminality aligns with the ontology of the metaverse as a bidirectional “flow” between the real and virtual worlds, a kind of layer that unites both environments, with a vector of movement beyond (meta– “beyond”) the physical world toward an alternative immersive world. Like a liminal space, the metaverse is transitive—it can metaphorically be described as a bridge or medium through which the transition from real sensations to virtual ones and back again takes place; it is intermediate—belonging neither fully to the real nor the virtual, it integrates both worlds while retaining its own distinct identity; it is ambivalent: on the one hand, it is a space of limitless possibilities, and on the other, it represents a detachment from physical reality, generating ethical and ontological tension, along with transformations in perception, identity, and understanding of reality.

The aim of the article is to identify the individual-identity dimension of liminality in immersive games, particularly the transformative impact of virtual and projective identities on the real identity, with a cognitive restructuring of the perception of two realities. The societal dimension of the metaverse as a transitional state between stages of societal development remains outside the scope of this article due to its limited volume. The study attempts to answer research questions such as: What are the main features of liminality that manifest in virtual gaming environments, and how liminal phases are represented and experienced in different types of games? How does liminality in immersive games impact players’ identity? What are the positive and negative effects of mytho-liminal and mystical-liminal games on players? The structure of the article is organized as follows: First, we present the theoretical framework that integrates approaches to game liminality, virtual narrativity in the context of the monomyth structure, Jungian archetypes, and theoretical constructs regarding virtual and projective identities. Next, we describe the methodology of analysis based on semi-structured interviews with students who are regular players of immersive games. Following this, we provide an analysis of mytho-liminal and mystical-liminal games, focusing on their positive and negative impact on players’ offline identity. Finally, we discuss the implications of our findings for the theoretical understanding of liminality in virtual games, as well as their impact on the players’ identity formation.

2. Related works

The theoretical basis of the article includes: (a) the concept of liminality, particularly its projection onto video games; (b) the concept of virtual narrativity in video games, drawing on Campbell’s monomyth structure [2], which can be traced in the narrative architecture of games; (c) theoretical constructs from James Gee [3] and other researchers on virtual and projective identities, aimed at exploring their impact on the player’s real identity; (d) aspects of Jungian psychoanalytic theory [4], particularly the shadow archetype, given that this archetype is embodied in liminal creatures in survival horrors, and the fact that confrontation with the shadow is described by Jung in terms closely related to liminality.

2.1. Liminality and video games

Research on liminality dates back to Van Gennep's work [5] on rites of passage, divided into three phases: separation, margin (or transition), and incorporation into a transformed state, often after symbolic death. Separation corresponds to the preliminal stage, transition to the liminal stage, and incorporation to the postliminal stage. These archetypal components of transition, going back "to archaic models of the world" [6] (p. 41), are reproduced, to varying degrees, in structured narrative virtual games, which symbolically recreate the initiation rite. Notably, the idea of video games as a liminal space with initiation rituals is found in Devin Proctor's article [7], where the author identifies such liminal characteristics of games as symbolic death, the borderline space, the blurring of self-boundaries, and the suspension of social and moral conventions, much like in the liminal phase. Proctor specifically notes that in virtual games, a person is "killed in the game and then resurrected in the same way." Drawing a parallel with liminal space, which oscillates "betwixt and between the positions assigned and arrayed" and social conventions, the researcher points out that when entering the video game world, players "move into a borderline space where the boundaries of self and self-representation blur, and the morality of the non-virtual world is suspended" [7] (p. 179). Protagonist avatars in the game acquire an identity with a "clean slate," similar to Turner's "liminal personae" or "threshold people"—liminal beings who, during transitions, assume the identity and qualities bestowed on them by the ritual. In this way, the game acts as a liminal space where concepts of identity and understanding of the world can be stripped and reconstructed [7] (p. 178). In addition to the archetypal structures of transition, the intersection of liminality and the virtual world of games can be theoretically justified through the ontology of liminality. As Turner argued, liminality represents "a realm of pure possibility from which new configurations or ideas and relationships may arise" [8] (p. 97). Similarly, virtual games serve as a symbolic field of practices of "pure possibility" in self-representation and self-determination, allowing individuals to realize their most fantastical desires in a new bodily form—desires that would be impossible to fulfill in real life due to physical or social constraints.

2.2. Virtual narrativity

The problem of virtual storytelling and narrative architecture in game design has been addressed by a number of researchers [9,10], who highlight stable models and structural elements in video games across various genres. Particularly important for this article are studies on the narrative architecture of virtual games from the perspective of Campbell's monomyth structure [2,11]. The monomyth represents a three-part structure consisting of the elements "Departure–Initiation–Return," which, in turn, correlate with the phases of liminality. Campbell's basic version of the monomyth includes 12 steps, which can be summarized into seven main parts: 1. The Call to Adventure: something compels the hero to leave their familiar world and embark on a mission; 2. Meeting the Mentor or Helper before crossing the first threshold; 3. Crossing the First Threshold: physical and metaphysical boundaries, for example, into the otherworld. The hero finds themselves in an unusual intermediate state where they must overcome challenges and confront enemies; 4. Tests, Allies, and

Enemies: a series of subsequent trials, as well as a moral test where the character must choose to “kill or spare”; 5. The Approach: preparation for the hero’s ultimate trial or initiation, often involving the hero being on the brink of death; 6. The Ordeal and Reward: the hero passes the main trial and receives a reward—such as divine power, the discovery of supernatural abilities, or the ability to determine the fate of the universe; 7. The Return (Transformation): the hero returns in a newly transformed state, with a renewed understanding of themselves and the world. The structure of the monomyth is connected with the plots of many virtual games, where characters go through a crisis, transformation and final self-realization, which echoes the liminal stages. The architecture of the game plot reflects, through the “hero’s journey”, a certain cultural canon that serves to create story worlds.

2.3. Jung’s concept of the shadow in the context of virtual game liminality

Jung’s psychoanalytic theory, particularly the archetype of the shadow, which embodies everything the subject refuses to acknowledge about themselves, was applied to the study of liminal games. Jung describes the confrontation with the shadow in terms associated with liminal states, such as a narrow passage, a narrow door, or a descent into a deep well, followed by an ascent [12] (p. 21). The outcome of the interaction between consciousness and the shadow is described by Jung in terms of acceptance, rejection, identification, or individuation. Liminal games allow players to experiment with the shadow, either accepting it (through in-game identification with evil) or rejecting it. As Proctor notes, in the game “we encountered our shadows and incorporated them” [7] (p. 184). In virtual games, the most significant way to incorporate the shadow into the Self is through identification, when the individual “purposely exposes themselves to the danger of being devoured by the monster... but subdues it” [4] (p. 19). Identification with the shadow can influence the player’s identity in both mytho-liminal and mystico-liminal games. In the first case, this occurs as a result of a “mimetic relationship with the avatar,” through which the player enacts both partial and complete rituals within the game space [6] (p. 180). In the second case, liminality allows one “to exorcise one’s inner fears and demons” [13] (p. 213). As Geraci, Recine, and Fox point out, horror games not only materialize our fears but, more importantly, offer a space where we can confront them [13] (p. 219), thus performing a significant psychological role.

2.4. Virtual, projective, and real identities

Since the game is “a model of the world”, it can become an ontological “tool” that affects real identity through projective and virtual identities. Differentiating types of identities, James Gee [3] notes that players project their attitudes, beliefs, and values onto the characters they create or control in virtual worlds. In the same vein, Turkle [14] explores how people use virtual worlds to construct different versions of themselves, blurring the boundaries between real and virtual identity. Frasca [15] analyzes how gameplay allows players to explore various roles and identities in the context of simulation, which influences their self-perception. Thus, virtual identity, which can be adjusted according to the game’s possibilities, exists within the

framework of game rules and is determined by the game's world capabilities. Projective identity involves projecting part of the player's real identity onto their game character, including personal qualities, moral stances, and internal beliefs, which are expressed in the character's behavior. Both projective and virtual identities can affect real identity through processes of reflection, self-expression, and the transfer of gaming strategies to life outside the game, which we will explore in the practical part of the article through the lens of narrative liminality and psychological initiation in survival horror liminal games.

The novelty of this article lies in the comprehensive study of the impact of liminal gaming experiences on the real identity of players, identifying both positive and negative consequences through the lens of mytho-liminal and mystical-liminal games, by integrating approaches to game liminality, the monomyth structure, Jungian archetypes, and empirical data.

3. Methodology

The study employs semi-structured open-ended interviews, where students are asked questions within a pre-determined thematic structure, with the possibility of introducing unplanned questions to clarify the responses. The interview was conducted in the respondents' native language—Ukrainian. A hybrid sampling method was used to recruit participants, combining stratified sampling—students aged 18 to 23, who regularly play immersive narrative games and/or liminal games. The informants were 120 students from two Ukrainian universities, where the authors of the article teach. The size of the interview groups varied from 7 to 20 students, depending on the size of the seminar group and the presence of active players within it. The interviews were conducted in real time, in a Zoom video conference format, which encouraged cognitive engagement among respondents, allowing each focus group member to “interject” during individual questioning, adding their comments and spontaneous contributions about their own experiences. The potential topics for discussion focused on the positive and negative effects of game experiences on players' real identities, emphasizing feelings, sensations, and changes in consciousness. Each issue was structured into specific questions, and responses were clarified as needed with probing questions to obtain additional information. (see **Tables 1–4**).

Table 1. Assessment of the positive impact of mythical-liminal games on player identity.

Questions: Positive Effects

1. Do you play survival horror games and games that feature liminal spaces? For what purpose? What do you gain from the experience of playing them?
 2. What feelings do you experience during and after completing the game?
 3. Do liminal spaces without monsters give you a sense of relaxation and peace?
 4. Do you feel that the connection with your avatar, who fights monsters in horror games—embodiments of evil—strengthens your moral values, with a clearer distinction between good and evil?
 5. Does completing survival horrors contribute to developing your self-control and perseverance skills, increasing your coping potential?
 6. Can monsters symbolize the internal conflicts of characters? If so, in which games?
 7. Have you ever felt that confronting and fighting liminal entities in the game helps you process your own unconscious conflicts?
 8. Do you ever feel a sense of catharsis (a feeling of lightness, cleansing, or release) after completing a horror game or its stages?
-

Table 2. Assessment of the negative impact of mythical-liminal games on player identity.

Questions: Negative Effects

1. Do you play survival horror games and games that feature liminal spaces? For what purpose? What do you gain from the experience of playing them?
2. What feelings do you experience during and after completing the game?
3. Do liminal spaces without monsters give you a sense of relaxation and peace?
4. Do you feel that the connection with your avatar, who fights monsters in horror games—embodiments of evil—strengthens your moral values, with a clearer distinction between good and evil?
5. Does completing survival horrors contribute to developing your self-control and perseverance skills, increasing your coping potential?
6. Can monsters symbolize the internal conflicts of characters? If so, in which games?
7. Have you ever felt that confronting and fighting liminal entities in the game helps you process your own unconscious conflicts?
8. Do you ever feel a sense of catharsis (a feeling of lightness, cleansing, or release) after completing a horror game or its stages?

Table 3. Assessment of the positive impact of virtual simulacrum of initiation in mytho-liminal games on player identity.

Questions: Positive Effects

1. What guides your choice or creation of a character?
2. Do you share similarities with your character (external, internal)? Is the character closer to your real self or your “true essence”?
3. What traits must avatars have for you to better “immerse” in the role in an immersive game?
4. Does your character’s completion of difficult trials affect your self-confidence?
5. Do parasocial relationships with the character and their interactions with other characters influence the development of your communication skills?
6. Has the immersive game experience helped free you from social prejudices, status-related conventions, age, or authority?
7. Does the experience of undergoing initiation in the game help reveal your positive latent or unrealized potential?
8. Does the experience of initiation in the game foster creativity and problem-solving in your offline self?
9. Does the choice between different alternatives in the game reflect your moral imperative or that of the character? If the character must choose between alternatives, both of which are unacceptable from the standpoint of morals and values, what feelings does this evoke in you?

Table 4. Assessment of the negative impact of virtual simulacrum of initiation in mytho-liminal games on player identity.

Questions: Negative Effects

1. Do you ever feel that the virtual body of your avatar is an extension of yourself?
2. Have you ever experienced a sense of being a virtual entity, where your brain struggles to separate what happens in the game from reality?
3. Have you ever copied a favorite character in real life?
4. Have you developed an emotional attachment to a game character? What does this depend on? How would you describe it?
5. Do you feel disappointed when an AI avatar is deleted or when its conversational “baseline” changes?

The interview data were processed by identifying typical responses, similar comments, as well as individual answers that significantly differed from expected ones. Additionally, narrative analysis based on the archetypal structure of Campbell’s monomyth was employed as a supplementary method to study virtual narrativity, correlating the stages of the monomyth with liminal phase.

Limitations of the methodology

Several limitations of the approach should be acknowledged. First, the reliance on a student-only sample may not fully represent the broader gaming demographic, as the participants are primarily drawn from a specific age group and socio-cultural background. This limits the generalizability of the findings to a more diverse population. Future research could include a more heterogeneous sample, spanning different age groups, cultural backgrounds, and gaming experience levels, to provide a fuller picture of how liminal games impact various segments of the gaming population. Moreover, while qualitative methods such as semi-structured interviews

allow for in-depth exploration of personal experiences, they are limited by their subjective nature and the potential for researcher bias in interpreting responses. To mitigate these concerns, future studies could incorporate additional quantitative methods, such as psychometric assessments, to triangulate findings and provide a more comprehensive understanding of the effects of liminal games on identity. Another key limitation is the absence of a longitudinal design in this study, which would enable researchers to track the long-term impact of liminal game experiences on players' identity, behavior, and self-perception over time, offering valuable insights into the persistence or evolution of these effects. The prospect of research in this vein may be to identify the direction of influence, helping to clarify whether playing liminal games leads to changes in identity, or whether individuals with certain predispositions are more likely to engage with such games.

4. Results and discussion

The impact of liminal gaming experiences on the real identity of players is explored from two perspectives: (1) overcoming liminality in survival horror games, where the virtual world is used to experiment with the psyche and can immerse the player in an altered state of consciousness; (2) overcoming liminal phases associated with the initiation of a character in games with a narrative-plot architecture that reflects the universal stages of the hero's "journey". The analysis of games allowed for the differentiation of two types of initiation spaces: mystic-liminal and mytho-liminal. This division is based on genre and teleological criteria. Mystic liminality is characteristic of horror game genres, provoking threshold experiences of fear and tension in the player, or of exploratory games—ultra-realistic walking simulators like POOLS on Unreal Engine 5, which challenge the player's navigation skills and are associated with fears of getting lost, enclosed spaces, etc. Mytho-liminality is characteristic of narrative-driven immersive games. The teleological criterion distinguishing mystic and mythic liminality lies in the purpose of passing through these spaces for the players and the indirect impact on them of their virtual and projective identities. This is further clarified through interviews with users who have had regular experience of both types of immersive games.

4.1. Mystical-liminal games: Impact on player identity

Mystical-liminal games include hyperrealistic locations, liminal entities, and other mediators of transition between worlds. Hyper-realistic locations, similar to liminal spaces in the offline world, include deserted areas, abandoned cities, parks, ruined uninhabited buildings, cemeteries, as well as any topoi and loci in spatial puzzles, capable of evoking a sense of kenopsia, fear, and tension. Liminal entities encompass zombies, humanoid and industrial robots, monsters, demons, and others. The liminality of such entities is defined by their function as mediators of transition into an alternative world, which symbolically relates to the binary opposition of "life versus death". Liminal entities, reflecting universal archetypal fears of humanity, frequently appear in myths, legends, and fantasy. In particular, in ancient culture, liminal spaces and liminal beings, inevitably drawn to one another, were a recurring literary motif [16]. Liminality is also embodied by other mediators of transition

between worlds [17] (p. 148), such as magical qualities—the ability to travel through time and space, transform into other entities—as well as objects that serve as indicators of the transition to a mystical world and are often endowed with magical power [18]. Such objects include mirrors, doors to the otherworld, bright red squares made of paper or other materials (e.g., in *Silent Hill 2* they appear in various places), and angel figurines scattered throughout *The Evil Within*. These objects do not blend into the surrounding environment, creating a persistent sense of “otherworldliness.” For instance, in *The Evil Within*, Sebastian enters his refuge through reflective surfaces, typically mirrors. Mystic-liminal spaces often involve the oneiric world of dreams. For example, in *The Evil Within*, the STEM world is a collective lucid dream created by its participants, where upon dying in reality, a participant leaves behind a “trace”—a piece of consciousness that continues to live on its own. Moreover, STEM is multi-layered, representing a “dream within a dream,” with events unfolding on several levels of the dream. Liminality can manifest itself in games that use the concept of a time loop associated with archaic cyclical time [19]—for example, in *Returnal* the main character is stuck in a mysterious world on an unknown planet, where each of her deaths returns her to the beginning of the cycle. The effects of mystical-liminal games on player identity, revealed through interviews, are presented in **Table 5**.

Table 5. Impact of mystical-liminal gamed on offline identity.

Positive Impact	Negative Impact
Experiencing emotions unattainable in the real world	Feelings of fear, tension, and discomfort during gameplay
Development of coping potential	Cognitive stress due to disidentification with the “good” characters upon realizing their immorality
Strengthening of moral imperatives: clear distinction between good and evil	Feelings of helplessness and frustration in cutscenes
A sense of relaxation and peace in liminal games without liminal entities	Feelings of loneliness and fear in liminal spaces (games without monsters)
Working through personal unconscious conflicts	

4.1.1. Positive effects

In the survey conducted for this study, most respondents stated that playing liminal games allows them “to experience emotions that are impossible in the real world” (95%). Along with this, the most frequent responses related to positive emotions included: “The fear fades, and afterward, you feel cleansed, you feel alive”; “It’s fun to be scared”; “After an intense action scene, where I have to run or fight for my life, I feel a deep sense of emotional satisfaction”; “I like challenging myself”; “I love getting an adrenaline rush”. Less frequent responses included: “We play horror games from a place of comfort and safety, seeking ancient archetypal sensations, at the edge of what’s permitted”; “Fear is as pleasant to me as joy”; “I loved this game (referring to *Silent Hill 2*) because of the endless tension it gave me, which no other horror game did”; “I’m learning to control myself, mastering my fears”. These comments are consistent with the observations of some researchers regarding the positive effects of horror in liminal games and horror movies. In particular, scientists pointed to the “enjoyment of scary video games” [20], as well as the epistemic benefit “from horror experiences, allowing people to learn something about themselves as a

consequence of experiencing fear and anxiety in safe settings” [21], and “challenging one’s fears and discovering oneself” [22].

From the perspective of physiological psychology, students’ responses are supported by the well-known fact that, in horror games, the body reacts to fear and tension by activating the “fight or flight” response, releasing adrenaline and cortisol, which leads to an increased heart rate and a surge of energy. Once the source of fear or tension subsides (for example, after a jump scare or overcoming a challenging moment in the game), the body enters a period of relief and relaxation, during which endorphins and other neurotransmitters that promote well-being (such as dopamine) may be released, resulting in feelings of satisfaction and pleasure. This aligns with empirical research on virtual horror games. Specifically, the literature [13] suggests that games like *DayZ Requiem* and *Resident Evil* provide cathartic experiences by enabling players to face and overcome their anxieties in a controlled environment.

However, it is important to acknowledge that not all players may experience these emotions in the same way. While many respondents reported positive effects such as catharsis or emotional satisfaction, others may have different or even negative reactions to horror games, depending on individual factors such as personal tolerance for fear, prior gaming experience, or psychological predispositions. Therefore, the findings presented here should be understood as reflecting a general trend among the respondents in this study, rather than universal outcomes for all players. Future research could explore individual differences in more depth to provide a more comprehensive understanding of how diverse player demographics experience fear and liminal spaces in games.

The cathartic effect experienced in liminal games often extends into other effects noted by the interviewed students, such as working through unconscious conflicts or psychological traumas and partial release from personal fears. Thus, 15% of students acknowledged that navigating liminal spaces and encountering liminal entities helps them process their unconscious conflicts. Comments from participants regarding games like *Silent Hill 2*; *The Evil Within*; *Hellblade: Senua’s Sacrifice*; *Amnesia: The Dark Descent*; and *Outlast*, where monsters symbolize the protagonists’ internal conflicts, include: “The goal of the game is to show that everyone has inner fears”; “The Anima monster from *The Evil Within* takes the form of the characters’ internal fears”; “I helped James remember the past and find himself”; “These games suggest that everyone has fears and a dark past that must be let go of to move forward.”

The possibility of a psychotherapeutic effect from horror games is supported by research indicating that horror provides people with a way to “play with fear,” offering opportunities to engage in moderately frightening experiences in a safe context [23,24]. It is also noted that fear elements in video games are deliberately used as tools for treating anxiety symptoms [25]. The player’s involvement, akin to that of a psychoanalyst, in helping the protagonist work through trauma further supports this processing of personal psychological experiences. The design of monsters in horror games is intended to facilitate projection of one’s own experiences onto them. Through encounters with such entities, players, using mechanisms of transference, seek to better understand themselves [26], identifying with the protagonist (for example, James in *Silent Hill 2*) and transferring his feelings onto themselves. In doing so, players also identify parts of their personality with the monsters the protagonist fights,

seeing these creatures as representations of their own psychological phenomena—fear, desire, guilt, etc. In this sense, the mystic-liminal spaces of games offer a virtual space for players to confront their “shadow” (in Jungian terms)—their latent fears and repressed traumas.

Another positive effect of horror games, tied to liminality as a transitional state leading to a new quality, is the potential for altering a player’s offline identity by developing skills of self-control and resilience, thereby increasing coping capacities. As defined by Haan, coping refers to “the fundamental and persistent organizational strategies that people use to interregulate the various aspects of themselves” [27] (p. 1). Approximately 10% of respondents reported that horror games had a positive impact on increasing their coping potential, with comments such as: “Fewer things scare me now than before I started playing horror games”; “I panic less in real life”; “I feel that by playing horror games, I handle the real world better”; and “Now I can better cope with depression and anxiety in real life.”

These student comments align with research findings that coping is fundamental to the experience of video games, which “simulate emotions in a form that is closer to typical real-life experiences: (...) emotions are motivators for actions and are labeled according to the player’s active coping potentials” [28] (p. 201). Immersion in a projective identity impacts the player’s cognitive and behavioral regulation strategies, helping them manage negative emotions such as fear and anxiety [29], improve their ability to regulate their fear levels, challenge their fears and learn about themselves, as corroborated by the respondents’ comments mentioned above.

The positive effect of horror games on reinforcing moral values of the player, particularly the clear distinction between good and evil, is highlighted by Krzywinska [30], who points out that the horror genre is often built on a solid ethical foundation with a clear differentiation between good and evil. The fact that liminal creatures are obvious manifestations of evil allows avatars to become embodiments of good, opposing this evil. However, only 4% of respondents indirectly confirmed a correlation between gaming and the strengthening of moral values, with comments such as: “There were times when I identified with the avatar who fights obvious evil, like in Resident Evil and Undying. Perhaps engaging in the fight against evil helped strengthen some of my values in real life”; “If I have to make an ambiguous or bad choice where moral boundaries are blurred, I find it unpleasant”; and “I enjoyed protecting Maria from monsters in Silent Hill 2.” These comments illustrate the construction of a projective identity by the player, onto which they project their personal qualities, moral principles, and internal beliefs. At the same time, most responses were either vague or negative: “It depends on the player themselves”; “I don’t transfer moral aspects of the game world into offline reality”; and “I see the avatar as a tool for achieving goals in the game without worrying about ethical questions.” This suggests that the possibility of strengthening moral values through identification with an avatar depends on several variables—such as play style, level of emotional involvement, and the player’s willingness to internalize game values. This casts doubt on the universality of the positive effect of horror games on reinforcing moral values.

Lastly, among the positive effects of liminal games, some players reported feelings of “tranquility” (2%). For example, it was noted that ultra-realistic exploration

games like POOLS on Unreal Engine 5 or Superliminal, which feature liminal spaces without monsters, evoke such sensations. However, several female respondents reported the opposite, ranking empty spaces as evoking “maximum feelings of fear and anxiety”: “The fear of human spaces without people is stronger than the fear of encountering monsters and zombies.” Positive effects associated with playing threshold games are presented in the form of a Bar **Figure 1**.

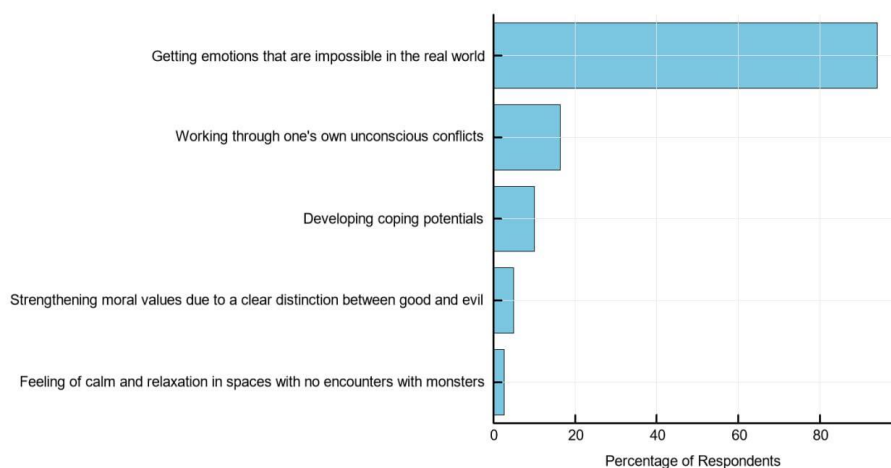


Figure 1. Positive impact of mystical-liminal games on offline identity in percentage terms.

In the chart, positive effects are listed on the vertical axis, and the percentage of respondents who confirmed certain positive effects is presented on the horizontal axis. The length of each column represents the percentage corresponding to a specific category of positive effects: 1. Getting emotions that are impossible in the real world (95%). 2. Working through one’s own unconscious conflicts (15%) 3. Developing coping potentials (10%) 4. Strengthening moral values due to a clear distinction between good and evil (4%). 5. A feeling of calm and relaxation when passing through liminal game spaces in which there are no encounters with monsters (2%). In percentage terms, all positive effects do not add up to 100% due to the fact that respondents, as the interview showed, could indicate several effects at the same time: obtaining emotions that are impossible in the real world, developing coping potentials, and working through one’s own unconscious conflicts.

4.1.2. Negative effects

90% of the interviewees reported feeling fear, tension, discomfort, and loneliness when playing liminal, especially survival horror, games. Typical responses included statements like: “No matter how many times I play these games, I go through Dead Space with a shudder,” “I feel real terror when a huge figure with a chainsaw chases me in Resident Evil 4,” “What scares me the most is the unknown—when you never know what’s around the next corner, like in Silent Hill,” and “The fear from some games stays with me for a long time.” Another said, “The abandoned psychiatric clinic in Thief: Deadly Shadows always terrifies me”. Almost all respondents mentioned experiencing fear and tension in games that involve encounters with monsters. This impact on real identity can be explained, in part, by the nature of the avatar in liminal games and its agency. Unlike immersive games with hero-protagonists who possess

superhuman abilities, making the player feel safe, in liminal games, the main character is an ordinary person, unprepared to fight monsters, which intensifies the liminal experience, making it more terrifying. The intensification of fear and anxiety as manifestations of liminal sensations is also associated with the physical connection and synchronization of the protagonist and the avatar. The player can feel pain, suffering, or even touch through tactile simulation via DualShock controller feedback, as in *Silent Hill* and *Fatal Frame*. The controller shakes more and more aggressively as the characters' health approaches zero, mimicking an accelerating heartbeat. The level of fear and anxiety is related to the degree of identification with the avatar. Players who managed to take the position of an observer during gameplay, without identifying themselves with the character, reported fragmented fears, such as when monsters appeared suddenly or when they anticipated scary moments. Those who "merged" with the character and feared for their health and life experienced anxiety throughout the entire game. These players described their experiences in the first person: "I couldn't protect her," "I was scared / felt tense," etc., instead of "My avatar was scared." Interviewees also reported feeling fear and loneliness in games where there are no liminal entities, only liminal spaces (35% of respondents). Typical comments included: "In some games, like *Ghostwire: Tokyo*, I feel an eerie sense of loneliness. There are no people, the city is dead, but car alarms go off, escalators in shopping malls are running, and advertisements are playing on screens. This creates a special kind of fear and tension, more than encountering enemies and monsters." Another said, "At first, *PowerWash Simulator* felt like a relaxing game, until I started realizing that the world, which looks alive and populated, is completely empty, without people. The tension, anxiety, and discomfort lasted until I understood why everything was dirty and deserted."

In addition to fear and tension, the majority of respondents (85%) reported feeling helpless during cutscenes, in which the player loses agency and control over the character, and is forced to passively observe events within the game world. Interviewees reported feeling helpless and tense when they were forced to watch, without the ability to intervene, as a vicious Necromorph kills the last surviving members of the crew in *Dead Space*, when they couldn't stop Pyramid Head from throwing the character off the roof of Brookhaven Hospital, or prevent the murders and violence in the Woodside Apartments in *Silent Hill*. Finally, a negative effect mentioned by 25% of respondents was a feeling of "disappointment" that arose from identifying with the character, empathizing with them, and fighting for their survival, only to later realize the character's immorality. Such responses were particularly related to *Silent Hill 2*, where, as the storyline unfolds, players come to the realization that the protagonist is the murderer of his own wife. The percentage of respondents experiencing different negative emotions associated with playing liminal games is presented by a Bar **Figure 2**.

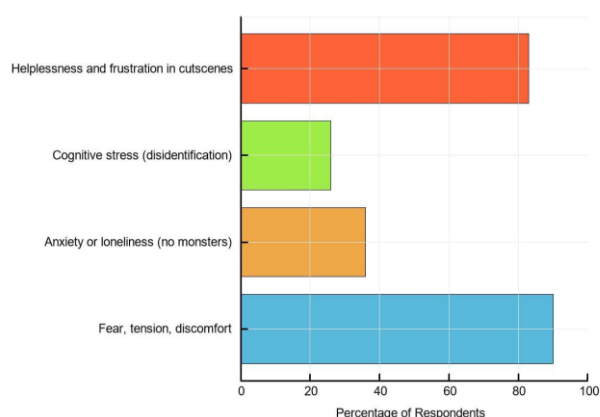


Figure 2. Negative impact of mystical-liminal games on offline identity.

In a Chart the emotions as categories are listed on the vertical axis. The horizontal axis represents the percentage of respondents. Each bar's length represents the percentage corresponding to that specific emotion: Fear, tension, discomfort–90%; Anxiety or loneliness (no monsters)–35%; Cognitive stress (disidentification with “positive” character)–25%; Helplessness and frustration in cutscenes–85%. In percentage terms, the emotions do not sum to 100%, reflecting overlapping emotional experiences rather than exclusive categories.

4.2. Mytho-liminal games: Plot-narrative and psychological aspects of impact on the player's identity

In the ritualized space of mytho-liminal games, the threshold nature of situations and states. In mytho-liminal spaces, transience—crossing boundaries and encountering uncertainty—is embedded in the narrative as a structural component of the monomyth and linked to initiation rites [1], which, according to Eliade, is present in a transformed form in all socio-cultural dimensions [31]. Virtual-simulated scenarios are based on precedents tied to fundamental existential problems—separation, trials, death, rebirth, withdrawal, seeking protection, victory, initiation, breakthroughs into the “superhuman,” and so on. Simulacra of initiation practices are adapted to the story arcs of immersive games, but generally follow the structure of Campbell's monomyth. In the immersive environments of modern games such as *Deus Ex*, *System Shock (Remake)*, *S.T.A.L.K.E.R.*, *Bioshock 2*, and others, precedent scenarios, similar to real cultural practices, make virtual worlds “interiorized spaces of truth-seeking,” where the boundaries between the sacred and the mundane are collapsed in a carnivalesque [32]. Despite differences in the content of these games, which may feature more or less complex and nonlinear storylines with player choices and varying degrees of decentralization, the stages of gameplay exhibit a certain invariance, creating the classic hero's arc, which was identified through an analysis of *Deus Ex*, *The Witcher 3: Wild Hunt*, and *S.T.A.L.K.E.R.*, and is schematically presented in the **Table 6**. Due to space limitations, other games are not included in the analysis, although *The Legend of Zelda: Breath of the Wild*, *Horizon Zero Dawn*, *Red Dead Redemption 2*, *Mass Effect Trilogy*, *God of War* and others demonstrate the presence of similar structural components.

Table 6. Virtual initiation in mytho-liminal games: to the structure of monomyth.

monomyth structure	game storylines
1. Call to Adventure/Pre-liminal phase	<i>Deus Ex</i> : JC Denton is called to combat global terrorism, setting him on a path of unraveling complex conspiracies. <i>S.T.A.L.K.E.R.</i> : The Marked One is instructed by his PDA to kill Strelak, starting a quest filled with personal and existential discovery. <i>The Witcher 3</i> : Geralt of Rivia embarks on a dangerous journey to find Ciri, his surrogate daughter, while pursued by the Wild Hunt.
2. Mentor/Helper/Pre-liminal phase	<i>Deus Ex</i> : JC's brother, Paul Denton, plays the role of a mentor and guide during early missions. <i>S.T.A.L.K.E.R.</i> : The Marked One receives initial help and guidance from Sidorovich and other stalkers who help him survive the Zone. <i>The Witcher 3</i> : Geralt is aided by mentors Yennefer and Vesemir, along with assistance from Triss Merigold and other Witchers.
3. Crossing Threshold/Transition to liminal phase	<i>Deus Ex</i> : JC realizes UNATCO's true nature, crossing from loyalty to the organization to seeking truth. <i>S.T.A.L.K.E.R.</i> : The Marked One physically and symbolically crosses boundaries by entering the dangerous Zone and its anomalies. <i>The Witcher 3</i> : Geralt crosses several thresholds, notably when fully committing to finding Ciri and entering mystical and perilous lands.
4. Tests, Allies, and Enemies/Transition to liminal phase	<i>Deus Ex</i> : JC faces governments, corporations, and shadowy organizations like the Illuminati while receiving help from resistance members. <i>S.T.A.L.K.E.R.</i> : The Zone is filled with dangerous mutants and factions, with the Marked One needing to navigate alliances and conflicts. <i>The Witcher 3</i> : Geralt is faced with numerous trials, balancing political intrigue and monster contracts. Allies like Dandelion and Zoltan assist him, while enemies include the Wild Hunt and monstrous entities.
5. Preparation for the Ordeal/Liminal phase	<i>Deus Ex</i> : JC prepares for a final confrontation, on the edge of life and death. <i>S.T.A.L.K.E.R.</i> : The Marked One heads toward the center of the Zone—to face the core mysteries and dangers within the Chernobyl NPP. <i>The Witcher 3</i> : Geralt prepares to confront the Wild Hunt and rescue Ciri, gathering allies and formulating strategies.
6. Ordeal/Reward/Transition to post-liminal phase	<i>Deus Ex</i> : JC may seize control of key technologies that could reshape the world or destroy the structures of power. <i>S.T.A.L.K.E.R.</i> : The Marked One either confronts the Wish Granter or uncovers the truth about the C-Consciousness, depending on player actions. <i>The Witcher 3</i> : Geralt faces the leaders of the Wild Hunt, with the reward of rescuing Ciri or, alternatively, losing her based on the player's choices.
7. The Return (Transformation)/Post-liminal phase	<i>Deus Ex</i> : JC's return differs based on the player's ending—he either becomes a godlike being or dismantles the existing power structures. <i>S.T.A.L.K.E.R.</i> : The Marked One transcends his past identity, either by merging with the C-Consciousness or rejecting it, emerging with new insight. <i>The Witcher 3</i> : Geralt's return is shaped by his choices—he may find peace or loneliness, or continue new adventures with Ciri, who may become a Witcher herself

This breakdown of key stages in the structure of the monomyth across *Deus Ex*, *S.T.A.L.K.E.R.*, and *The Witcher 3* demonstrates how narrative-driven immersive games integrate archetypal hero's journeys, enabling players experience pre-liminal, liminal, and post-liminal phases through their character's evolution and decisions. Without undergoing trials impossible in real life, the players experience a kind of pseudo-initiation, engaging with a space "that is psychically innovating." Without changing place, they change their nature [33] (p. 206). The impact of virtual initiation rituals on players' perception of themselves and the world around them is summarized based on the responses of students with experience in playing mytho-liminal games.

4.2.1. Psychological dimension of mytho-liminal games: The positive impact on players' identity

The positive impact of game character initiation on the physical identity of players are represented in the **Figure 3**, which provides a holistic visual of how different factors contribute to the player's experience.

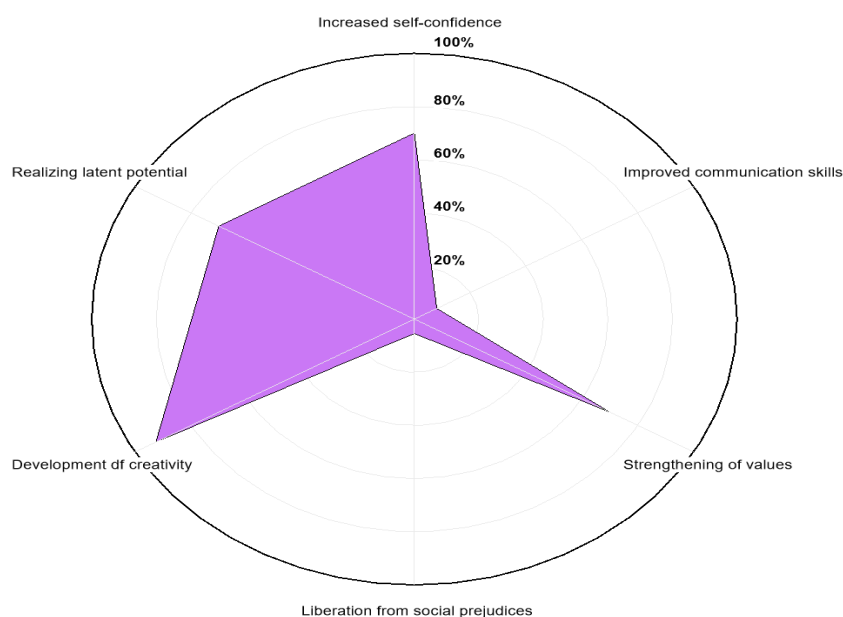


Figure 3. Impact of game character initiation on physical identity (positive aspects).

In the Chart, each axis shows one of the key parameters, and the filled area represents the extent of the positive impact (in percentages). The larger the area, the stronger the positive effect for that parameter. The percentage of the positive response determines the position on the axis: Development of creativity (90%); Increased self-confidence (72%); Realizing latent potential (70%); Strengthening of values (65%); Improved communication skills (7%); Liberation from social prejudices (5%). The percentage of “no effect” responses is left off for simplicity, since each of these responses adds up to 100% with each of the positive effects (e.g., if Development of creativity is 90%, then No effect in this regard is 10%).

The effect of “Development of creativity” was verified through the question: “Does the experience of initiation in a game contribute to the development of creativity and problem-solving in your offline self?” Respondents mentioned that they “enjoy seeing the results of the decisions, actions, and choices they make”; that the development of problem-solving was particularly influenced by progressing through stages in games like *Dishonored*, where “every player goes through it in their own way, with or without using abilities, and each level can be completed in dozens of different ways”; “I develop creativity by playing games, where I can control not only the avatar but also the story, meaning the order in which it is told.” While these responses suggest that mytho-liminal games can foster problem-solving skills in certain players, the degree to which creativity develops depends on different variables—experience with game mechanics, gameplay style, players’ different cognitive approaches to problem solving. For some players, the creative freedom offered by various combinations of game mechanics such as stealth, combat, hacking, and exploration—fosters flexibility in decision-making and enhances their sense of agency. Commenting on the students’ responses, it can also be said that in mytho-liminal games, players feel like creators of sorts, performing a world-modeling function on two levels: (1) as agents of world changes at the end of many game narratives, with the qualitative transformation of the character’s identity in the post-liminal phase; (2) as having the ability to choose from

multiple alternative paths through the character, which can significantly impact the plot and outcome of the game. However, these effects should not be universally assumed, as the degree to which players experience this sense of creativity and agency varies depending on individual factors.

The effect of “increased self-confidence” was verified through questions related to avatar choice criteria, the player’s relationship to their avatar, how they felt after their avatar completed difficult challenges (initiations), and a direct question about whether this affected their self-confidence. 50% of respondents noted that they chose a character who resembled them physically (e.g., long hair, scars), 70% said they chose an avatar who “expresses my inner self,” 10% chose a character who did not resemble them either externally or internally, and 5% were unsure of their answer. Many comments mentioned that “the avatar is the best version of myself”; “I feel an emotional connection but not attachment to the avatar”; “if possible, I use the character editor to create an ideal version of myself.” In terms of physical resemblance, a paradoxical choice was observed among some girls who selected male characters with athletic builds (“muscle-bound types”). In response to the question “What qualities should avatars possess for you to better ‘immerse in the role’ in an immersive game?” 90% of those who had earlier chosen the option “expresses my inner self” mentioned qualities like “a cool-headed intellect, honesty, morality, responsibility, and a sense of humor.” This choice implies an ideal version of “themselves” or points to the Proteus effect [34], where avatars represent ideals that the offline self implicitly imitates or explicitly strives to emulate. The realization of one’s agency through the avatar, which Janet Murray defines as “the satisfying ability to take meaningful actions and see the results of decisions and choices made” [35] (p. 126), influences the player’s sense of confidence, as they project part of their real identity onto the game character, in which, as student responses indicate, they wish to see an improved version of themselves.

The effect of “Realizing latent potential” is connected to the player’s initiation through their avatar in the game. The fact that virtual pseudo-initiation in situations detached from everyday experience is still capable of revealing the hidden potential of the player’s real identity is supported by the conclusions of Beshar-Israeli, who asserts that games allow people to realize their deep, hidden potential [36], initiating new ways of living not only in the game but also in reality. The illusion of controlling one’s life, through a fictional reality, serves as a primary motivation for “existing” in the virtual environment and for seeking essence in an existential sense. When asked whether the experience of initiation in the game helps reveal deep, latent, and unrealized potential, 70% of respondents gave positive answers. Some respondents initially gave negative answers but, after reflection, changed their responses to positive. Gender preferences were evident in the responses: of the 70% of students who gave positive answers, the majority were female players.

The effect of “Strengthening of values” was verified through a series of questions regarding the selection of alternatives that reflect the values of the player’s real or virtual identity, and the player’s feelings when faced with a choice between two alternatives, both of which are morally and ethically unacceptable. In addition to straightforward responses, the majority (65% of respondents) noted that they never choose negative characters, and if there is a chance to avoid an action that contradicts their values, they will always avoid it. In the comments, players mentioned: “Playing

as a noble character in *The Witcher 3*, I feel that I become kinder to people”; “My values influence the choices I make in the game, I base my decisions on my values, like protecting a village in *Far Cry 4*”; “I feel responsible for Elizabeth in *Bioshock Infinite* when I lose track of her”; “I feel responsible for those the game places under my protection.” Responses varied depending on the gender of the respondents. For instance, female players commented on the “values” aspect by saying: “If I happen to insult a character or commit an immoral action, I cannot continue and restart the game.” Commenting on this positive effect, it is important to note that a significant body of research shows that by embodying others and experiencing life from different perspectives, virtual worlds have the potential to enhance empathy and reduce bias [37,38]. At different stages of initiation, players may share feelings of gratitude towards allies, respect for worthy enemies, and enjoy punishing evil, protecting the weak, and caring for characters who exhibit insecurity and anxiety. The value component of the player’s identity can be strengthened “by contrast”: if the character has to choose between alternatives, both of which are morally and ethically unacceptable, it leads to a weakening of identification or even disidentification with the avatar.

Positive effects such as Improved communication skills and Liberation from social prejudices received the lowest percentage of confirming responses—7% and 5%, respectively. When incorporating questions related to these effects in the survey, we based our assumptions on the idea that real identity gains greater freedom of expression because avatars are more communicative and risk-taking than their physical prototypes, and that the need for socialization and communication can be realized through establishing parasocial relationships between the player and the avatar, as well as through the virtual interactions of the character with other in-game characters. However, most responses indicated that communication skills are more influenced by interaction with other offline players and are weakly connected to the avatar’s communicativeness and its interactions within the virtual world. As for the Liberation from social prejudices effect, the inclusion of related questions in the interview was an attempt to trace the similarity between liminality and the space of games. Just as separation during the liminal transition frees individuals from laws, behavioral norms, customs, and conventions [1,39], games also deconstruct social symbols from the outside world—status, class, ethnicity, nationality, etc. At the same time, the overwhelming majority of respondents answered that they already experience freedom from social prejudices, and therefore, the gaming experience is unlikely to affect this.

4.2.2. Psychological dimension of mytho-liminal games: The negative impact on players’ identity

The interview results revealed that among the negative effects of games, liminal states such as self-dissociation and depersonalization of real identity, both psychologically and physically, were identified. It is worth noting that these effects are not frequent in percentage terms, as illustrated in **Figure 4**, and are observed in both mytho-liminal games and mystical-liminal horror games.

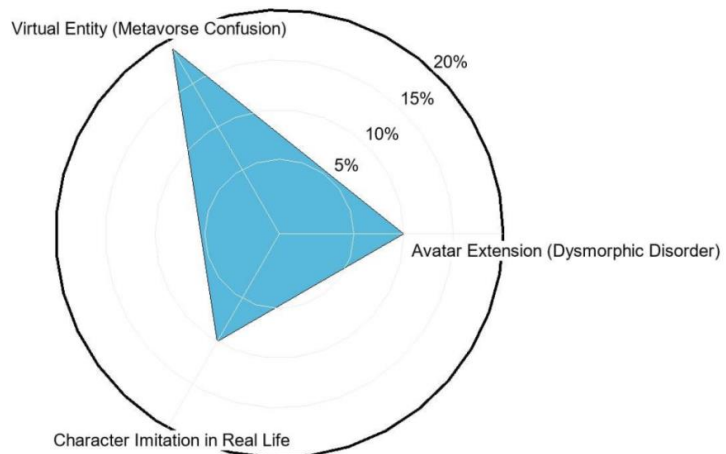


Figure 4. Impact of game character initiation on physical identity (negative aspects).

Each axis in the Chart represents a specific parameter, with values indicating the percentage of students reporting these effects: (1) Avatar Extension: The feeling that the virtual body of the avatar is an extension of yourself (loss of the sense of your own body, Dysmorphic Disorder): 10%; (2) Virtual Entity: The feeling that your brain is not always able to separate what you have lived in the metaverse from reality (Metaverse Confusion): 20%; (3) Character Imitation in Real Life: 10%.

When asked, “Do you feel that the virtual body of your avatar is an extension of yourself?” some respondents emphasized that this is significantly influenced by how much the game avatar resembles them physically and/or “internally,” as well as the amount of time spent with the avatar. In response to the question, “Have you ever felt that your brain cannot always separate experiences in the metaverse from reality? Have you ever felt like a virtual entity?” 20% of the responses were affirmative, although some of them were related to horror games. Among the comments, noteworthy ones include: “I go to make tea, but I remain in the game”; “I continue playing in my sleep”; “I can start experiencing what happens to the character as if it were happening to me”; “When an avatar I’ve spent many hours with is deleted, I feel sad and disappointed.” The responses align with findings from some researchers on the impact of games on player identity. In particular, it is noted that prolonged time in a virtual world can lead to a sense of detachment from one’s physical identity and self-dissociation [40,41]. Compared to regular computer games, the immersion effect in metaverses is significantly stronger, making it difficult for the user’s brain to always separate experiences in the metaverse from reality. Researchers note that dissociation from the user’s physical identity can become more severe, potentially leading to a loss of bodily awareness and even body dysmorphic disorder. “People start thinking of themselves as information entities that aren’t real experiencers and ... gradually lose a sense of validity for everyday experiences” [42] (p. 164), [43]. This sensation is exacerbated when the user feels a sense of closeness or emotional connection with a hyper-realistic humanoid avatar and “realistic” interactions within the immersive environment [44,45]. Contributing factors include the ability to control the appearance and characteristics of the avatar (as in *Fallout*), reducing the distance between the offline subject and the character, and the illusion of direct participation in the scenario,

especially when using full-body tracking suits, which enable the full range of tactile sensations. An indirect confirmation of the impact of immersive games on the “blurring” of offline identity is the players’ desire to resemble their virtual simulacrum in the physical world. This trend has been notably exploited by well-known brands: Zara, for instance, offered RW clothing so that players could dress like their avatar, and Nike introduced dotSwoosh sneakers.

Self-dissociation overlaps with the state of the individual during the liminal phase, which is a kind of disidentification with oneself. However, there is a key distinction: the liminal state is always a transitional period, leading to the reintegration of the individual into the world in a new, transformed quality. In the metaverse, this transition from “existence to essence” (to use the core concept of existential philosophy) lacks an existential component, as the trials necessary for achieving authenticity are experienced by the simulacrum of the real identity. Although the disidentification of the individual as a result of “crossing the threshold” between reality and the Metaverse aligns with the necessary phase of overcoming liminality, in the case of virtual depersonalization, such overcoming contradicts the teleological meaning of the liminal state as a phase in which a person seeks their “self,” auto-authenticity, and genuineness.

Among the possible negative effects, the interview also examined the influence of immersive games on the expression of deep, latent, and unrealized needs for destruction, aggression, and deviant behavior. In posing this question, we drew on studies noting that online disinhibition—a psychological state in which people feel more relaxed in the online environment [46]—is a key factor leading to the emergence of deviant behavior in the metaverse. However, all respondents denied such effects in relation to themselves, with the exception of one response that implied the potential for deviant behavior: “In the game, I can and will do whatever I want.” The interview results may have been influenced by the fact that they involved group discussions, which may have limited informants’ ability to acknowledge unpleasant facts about their gaming experiences.

5. Conclusion

Based on the shared characteristics of liminality and virtual gaming environments, the article focuses on liminal phases and states in mytho-liminal and mystical-liminal games in their impact on players’ identity. The positive and negative effects of liminality on off-line identity were identified based on data from semi-structured open-ended interviews conducted with groups of students, totaling 120 informants. The interview results were analyzed in the context of research on liminal states, game psychology, and psychological studies of out-of-body experiences in virtual reality. It was found that mystical-liminal games include hyper-realistic locations, including in the oneiric world of dreams, liminal entities, and mediators that facilitate transitions between worlds. Mytho-liminality is associated with rites of passage and initiation, embedded in the games’ plot as the classical hero’s arc with key elements of Campbell’s monomyth structure. Among the positive effects of mystical-liminal games were: Experiencing emotions that are impossible in the real world (95%); Working through unconscious conflicts (15%); Developing coping mechanisms (10%);

Strengthening moral values due to a clear distinction between good and evil (4%); A sense of calm and relaxation when navigating liminal game spaces without encounters with monsters (2%). The negative effects of mystical liminality included: Feelings of fear, tension, and discomfort (90%); Anxiety or loneliness in games with liminal spaces but without liminal entities (35%); Cognitive stress due to disidentification with a “positive” character (25%); Helplessness and frustration in cutscenes (85%). Among the positive effects of mytho-liminal games the interview identified: Development of creativity (90%); Increased self-confidence (72%); Realization of latent potential (70%); Strengthening of values (65%); Improved communication skills (7%); Liberation from social prejudices (5%). Negative effects reported included self-dissociation and depersonalization in psychological terms (20%) and physical terms (10%); character imitation in real life (10%). Such negative effects as the fulfillment of latent needs for destruction or deviant behavior were not confirmed by informants’ responses. In percentage terms, both positive and negative effects do not add up to 100% because respondents could indicate multiple effects simultaneously. Future research could investigate other forms of liminality in virtual environments, such as sociocultural or technological liminality, to better understand how these types affect users’ identity and behavior. In particular, studies could explore how social structures and group dynamics within virtual spaces influence collective identity formation, or how technological advancements like AI-driven characters shape interactions and decision-making processes in liminal environments. The intersection of liminality with emerging technologies like AI, augmented reality (AR), or virtual reality (VR) could open new avenues for understanding player immersion and identity projection. Longitudinal studies could track whether the observed effects—both positive and negative—are temporary or have lasting impacts on players’ behavior and self-perception. Additionally, cross-disciplinary approaches combining game studies with sociology, psychology, and technology studies would enrich the understanding of liminality’s societal implications, especially in terms of digital ethics, virtual socialization, and identity negotiation in rapidly evolving technological landscapes. The findings on both positive and negative effects of liminality in virtual games can inform game developers on how to design immersive environments that foster creativity, self-confidence, and moral development while minimizing negative psychological effects. Balancing the intensity of liminal experiences can maintain player engagement without overwhelming them, while game elements that help resolve unconscious conflicts and offer a safe environment for exploring moral values could be integrated into therapies focused on personal development or trauma recovery.

Author contributions: Conceptualization, NK; methodology, NK, OC and OM; validation, NK, OY and OC; formal analysis, OM; investigation, NK; resources, OY; data curation, OM; writing—original draft preparation, NK; writing—review and editing, NK; visualization, OY; supervision, NK. All authors have read and agreed to the published version of the manuscript.

Conflict of interest: The authors declare no conflict of interest.

References

1. Turner V. *The Ritual Process: Structure and Anti-Structure*. Aldine Transaction; 1995.
2. Campbell J. *The Hero with a Thousand Faces*. Princeton University Press; 1949.
3. Gee JP. *What Video Games Have to Teach Us About Literacy and Learning*. Palgrave Macmillan; 2003.
4. Jung CG. *The Portable Jung*. In: Campbell J (editor). Viking Press; 1971.
5. Van Gennep A. *The Rites of Passage*. University of Chicago Press; 1960.
6. Chaika O. Ritual Nominal Units Denoting Conjugal Relations in the Ukrainian, English and Portuguese Languages (Ukrainian). *Roczniki Humanistyczne*. 2010; 58(7): 41–57.
7. Proctor D. Bytes of Passage: Video Game Inhabitation as Ritual. *Acta Iassyensia Comparationis*. 2012; 10: 176–185.
8. Turner V. *The Forest of Symbols: Aspects of Ndembu Ritual*. Cornell University Press; 1967.
9. Jenkins H. Game Design as Narrative Architecture. In: Harrington P, Wardrup-Fruin N (editors). *First Person: New Media as Story, Performance, and Game*. MIT Press; 2004. pp. 118–130.
10. Juul J. Games Telling Stories? A brief note on games and narrative. *Game Studies*. 2001; 1(1).
11. Delmas G, Champagnat R, Augeraud M. Bringing Interactivity into Campbell's Hero's Journey. In: *Proceedings of the Virtual Storytelling: Using Virtual Reality Technologies for Storytelling, 4th International Conference, ICVS; 5–7 December 2007; Saint-Malo, France*. pp. 187–195.
12. Jung CG. *The Archetypes and the Collective Unconscious*. In: *Collected Works of C. G. Jung, 2nd ed.* Princeton University Press; 1968. Volume 9.
13. Geraci R, Recine N, Fox S. Grotesque gaming: the monstrous in online worlds. *Preternature: Critical and Historical Studies on the Preternatural*. 2016; 5(2): 213–236.
14. Turkle S. *Life on the Screen: Identity in the Age of the Internet*. Weidenfeld & Nicholson; 1996.
15. Frasca G. Simulation versus narrative: Introduction to ludology. In: Wolf MJP, Perron B (editors). *The video game theory reader*. Routledge; 2013. pp. 221–235.
16. Johnston SI. *Restless Dead: Encounters between the Living and Dead in Ancient Greece*. University of California Press; 1999.
17. Kravchenko N, Prokopchuk M, Yudenko O. Afro-American rap lyrics vs. fairy tales: Possible worlds and their mediators. *Cogito*. 2021; 13(1): 146–168.
18. Propp V. *Morphology of the folktale*. University of Texas Press; 1968.
19. Kravchenko N, Goltsova M, Snitsar V. Cyclical time in fairy tale and rap lyrics: Points of intersection. *Lege artis*. 2021; 6(1): 75–108.
20. Lynch T, Martins N. Nothing to fear? An analysis of college students' fear experiences with video games. *Journal of Broadcasting & Electronic Media*. 2015; 59(2): 298–317. doi: 10.1080/08838151.2015.1029128
21. Flanagan M. Facing fear during times of uncertainty—Guest Essay by Filmmaker Mike Flanagan. Available online: <https://bloody-disgusting.com/editorials/3611821/facing-fear-times-uncertainty-guest-essay-filmmaker-mike-flanagan/> (accessed on 3 October 2024).
22. Kerr M, Siegle GJ, Orsini J. Voluntary arousing negative experiences (VANE): Why we like to be scared. *Emotion*. 2019; 19(4): 682–698. doi: 10.1037/emo0000470
23. Scrivner C, Andersen MM, Schjødt U, Clasen M. The psychological benefits of scary play in three types of horror fans. *Journal of Media Psychology: Theories, Methods, and Applications*. 2023; 35(2): 87–98. doi: 10.1027/1864-1105/a000354
24. Schoneveld EA, Malmberg M, Lichtwarck-Aschoff A, et al. A neurofeedback video game (MindLight) to prevent anxiety in children: A randomized controlled trial. *Computers in Human Behavior*. 2016; 63: 321–333. doi: 10.1016/j.chb.2016.05.005
25. Kirkland E. *Restless Dreams and Shattered Memories: Psychoanalysis and Silent Hill*. Brumal: Research Journal on the Fantastic. 2015; 3(1): 161–182.
26. Vorobej M. Monsters and the Paradox of Horror. *Dialogue*. 1997; 24: 219–249.
27. Haan N. *Coping and Defending: Processes of Self-Environment Organization*. Academic Press; 1977.
28. Grodal T. Video Games and the Pleasure of Control. In: Zillmann D, Vorderer P (editors). *Media Entertainment: The Psychology of its Appeal*. Lawrence Erlbaum Associates Publishers; 2000. pp. 197–213.
29. Clasen M, Andersen M, Schjødt U. Adrenaline Junkies and White Knucklers: A quantitative study of fear management in haunted house visitors. *Poetics*. 2019; 73: 61–71. doi: 10.1016/j.poetic.2019.01.002

30. Krzywinska T. Hands-On Horror. In: Wu H (editor). *Axes to Grind: Re-Imagining the Horrific in Visual Media and Culture*. Academic Press; 2002. pp. 12–23.
31. Eliade, M. *Rites and Symbols of Initiation*. Spring Publications; 1998.
32. Hillis K. *Digital Sensations: Space, Identity and Embodiment in Virtual Reality*. Minnesota University Press; 1999.
33. Bachelard G. *The Poetics of Space*. Beacon Press; 1969.
34. Yee N, Bailenson JN, Ducheneaut N. The Proteus Effect: Implications of Transformed Digital Self-Representation on Online and Offline Behavior. *Communication Research*. 2009; 36(2): 285–312.
35. Murray J. *Hamlet on the Holodeck: The Future of Narrative in Cyberspace*. The MIT Press; 1997.
36. Bechar-Israeli H. From <Bonehead> to <cLoNehEad>: Nicknames, Play, and Identity on Internet Relay Chat. *Journal of Computer-Mediated Communication*. 1995; 1(2). doi: 10.1111/j.1083-6101.1995.tb00325.x
37. Schutte NS, Stilinović EJ. Facilitating empathy through virtual reality. *Motivation and Emotion*. 2017; 41: 708–712. doi: 10.1007/s11031-017-9641-7
38. Shin D. Empathy and embodied experience in virtual environment: To what extent can virtual reality stimulate empathy and embodied experience? *Computers in Human Behavior*. 2018; 78: 64–73.
39. Thomassen B. *Liminality and the Modern: Living Through the In-Between*. Ashgate Publishing; 2014.
40. Aardema F, O'Connor K, Côté S, Taillon A. Virtual Reality Induces Dissociation and Lowers Sense of Presence in Objective Reality. *Cyberpsychology, Behavior, and Social Networking*. 2010; 13(4): 429–435. doi: 10.1089/cyber.2009.0164
41. Aardema F, Côté S, O'Connor K. Effects of virtual reality on presence and dissociative experience. *Cyberpsychology, Behavior, and Social Networking*. 2006; 9(6): 653.
42. Lanier J, Biocca F. An Insider's View of the Future of Virtual Reality. *Journal of Communication*. 1992; 42(4): 150–172.
43. Hansen M. Embodying Virtual Reality: Touch and Self-Movement in the Work of Char Davies. *Critical Matrix: The Princeton Journal of Women, Gender and Culture*. 2001; 12(1–2): 112–147.
44. Ducheneaut N, Wen MH, Yee N, Wadley G. Body and mind: A study of avatar personalization in three virtual worlds. In: *Proceedings of the SIGCHI Conference on Human Factors in Computing Systems*; 4–9 April 2009; Boston, MA, USA. pp. 1151–1160.
45. Van Vugt HC, Bailenson JN, Hoorn JF, Konijn EA. Effects of facial similarity on user responses to embodied agents. *ACM Transactions on Computer-Human Interaction*. 2008; 17(2): 1–27.
46. Cheung CMK, Wong RYM, Chan TKH. Online disinhibition: Conceptualization, measurement, and implications for online deviant behavior. *Industrial Management & Data Systems*. 2021; 121(1): 48–64.