

PLAYER NEEDS INVENTORY (PNI): AN ANALYTICAL FRAMEWORK FOR ANALYZING PLAYER MOTIVES IN VIDEO GAMES

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KEYWORDS

player motives, game design, player experience, player needs, digital games

ABSTRACT

Focusing on player motives in games with narrative elements, we claim that the needs satisfied by a game depends on the interplay of three player experience dimensions (narrative, mechanics, and social context) and we present a formal approach for studying player motives in video games. Motives of the player are classified into six categories and the resulting Player Needs Inventory (PNI) is utilized in the close reading of a video game to identify how player motives are satisfied with different game user experience dimensions. Three patterns observed after the close reading are: (1) needs satisfied by a game is affected by the narrative of the game, the personality of the protagonist (role), and the social context the player finds himself in, (2) the needs for achievement and affiliation are more dominant than others in the form of fusions and subsidizations, and (3) a wide range of needs can be satisfied with carefully designed game mechanisms and a balanced player experience. Casting aside the motives of a player in the pregame phase and focusing on the motives of the player in the actual game phase, the Player Needs Inventory (PNI) presented in this study offers an analytical framework to understand player motives in video games and the conducted analysis may aid researchers interested in player experience.

INTRODUCTION

Motives for playing digital games have been studied before using self-determination theory (Przybylski et al. 2010), uses and gratifications perspective (Jansz and Tanis 2007), and social cognitive theory combined with the flow theory (De Grove et al. 2014; Lee and LaRose 2007). Based on Bartle's Player Types (Bartle 1996) and qualitative data collected, Yee (2007) identified motivations for play in online games. Based on the concept of flow, Sweetser and Wyeth (2005) created a set of heuristics for evaluating player enjoyment in games. Contrary to some of the studies mentioned above, this article is not interested in answering the generic question of "why do people play games?" or "why do people enjoy games?". According to Turkle (1994), the player usually plays a character in a video games and all interactions take place 'in character' which leads to blurring of boundaries between the player (self) and the role (character). The needs of the character may affect the needs of the player and vice

versa. Armed with this perspective, this article is concerned with the needs of the player/character or in-game motives of the player. We are not interested in the motives/needs of a player in the pregame phase (the decision to play and the selection of games) but the motives/needs of the player in the actual game phase.

For the purposes of this study, needs represent states of disequilibrium (lack of something) in an organism and orient the organism towards certain goals that will reduce needs. Studies on needs started with McDougall (1908) who attempted to define all human behavior in terms of motivational dispositions and Maslow (1968) defined groups of needs in a hierarchical order. However, it was Henry Murray (1938) who formalized the study of needs by identifying 27 psychological needs and matching them with actions and feelings, appropriate desires and effects, emotions, personality traits, and common relationships with other needs such as fusions, conflicts, and subsidizations. Researchers found that the framework of Murray (1938) is still applicable since it defines the basic desires and analyzes the multifaceted nature of intrinsic motivation (Reiss 2004) and it is even applicable to motivational studies in interactive media such as Facebook games (Ines and Abdelkader 2011). The framework of Murray (1938) has been applied to gaming before and each need is analyzed in relation to various gaming situations that can be experienced in a digital role-playing game (RPG), *The Witcher* (Bostan, 2009).

To analyze the in-game motives of the player, we used the three dimensions of player experience defined by Elson et al. (2014): narrative, mechanics, and context. The narrative comprises all aspects of the game's story and setting, such as plot, characters and their attributes, events, and dialogues. Mechanics comprise all game "rules" and define the options for interaction in and with a game. And the social context is made up of the possible presence of other players/characters and the interactions with them. Assuming that the needs of the player/character will be satisfied with the interplay of these three player experience dimensions, we attempted to identify the mechanisms employed in a successful video game to satisfy player needs. The selected game, *Hades*, won the Best Indie Game and Best Action Game awards in the Game Awards 2020 where it is nominated in nine categories. The close reading of the game through a 176 hour-long gameplay helped us identify patterns that concern game studies on player needs/motives.

PLAYER NEEDS INVENTORY (PNI)

This study will group the psychological needs of Murray (1938) according to the findings of the original study with mentions of evident and possible relationships among needs (Table 1). Three needs are grouped as Materialistic Needs. Needs of acquisition, order, retention, and construction are defined as needs associated with inanimate objects (Murray 1938, p.80). Six needs are grouped as Achievement Needs. Needs of achievement and recognition are classified as needs associated with the desire for accomplishment and prestige (Murray 1938, p.80). Needs of infavoidance, defendance, and counteraction are classified as desires and actions which involve the defense of status or the avoidance of humiliation, and they are also referred as needs that complement achievement and recognition (Murray 1938, p.81). Need of harmavoidance is not grouped with any other need in the original study but a closer inspection of the fusions and subsidiary need associations of this need gives us a definition that suits game studies. When harmavoidance becomes a subsidiary need to the need of achievement, this relationship aims ‘to keep well in order to accomplish something’ (Murray 1938, p.198). In this regard, avoiding harm, injury or death in games is also closely related with the desire to finish or beat the game.

Five needs are grouped as Power Needs. Needs of dominance, deference, and autonomy are classified as needs associated with human power exerted, resisted, or yielded to (Murray 1938, p.82). Needs of aggression and abasement constitute the two needs on a sado-masochistic dichotomy (Murray 1938, p.82). These five needs are also classified as ‘needs that may be taken together’ (Murray 1938, p.151). Five needs are grouped as Affiliation Needs in this study. Needs of affiliation, rejection, nurturance and succorance are classified as needs related with affection between people: such as seeking it, exchanging it, giving it or withholding it (Murray 1938, p.83). Need for blamavoidance is another need not grouped with any other need in the original study. A closer inspection shows that it conflicts with autonomy, acquisition, aggression, and domination. Fusions of this need with the needs of affiliation (as to please and not to displease) and nurturance (as to avoid offending a person) showed that it is more suitable to take its place besides the affiliation related needs (Murray 1938, p.188). Three needs are grouped as Information Needs in this study. Needs of cognizance and exposition are associated with the need to ask and the need to tell (Murray 1938, p.83). The need for understanding is related with the tendency to ask or to answer general questions, the inclination to analyze events and generalize, and the habit of stating opinion precisely and thus perfectly groups with the needs of cognizance and exposition (Murray 1938, p.225). Four needs are grouped as Sensual Needs in this study. Needs of sex, sentience, exhibition and play are said to be loosely related and grouped together (Murray 1938, p.167).

Table 1: Player Needs Inventory

Need	Related Actions
Materialistic Needs	
Acquisition (nAcq)	To gain possessions and property. To grasp, snatch, or steal things. To bargain or gamble. To work for money or goods.
Construction (nCons)	To organize and build; to combine or configure objects.
Order (nOrd)	To arrange, organize, put away, upgrade objects.
Retention (nRet)	To retain possession of things; to refuse to give or lend; to hoard.
Achievement Needs	
Achievement (nAch)	To overcome obstacles; to exercise power; to strive to do something difficult as well and as quickly as possible. To have the determination to win. To rival and surpass others.
Recognition (nRec)	To excite praise and commendation; to demand respect; to boast and exhibit one's accomplishments; to seek distinction, social prestige, honors or high office.
Infavoidance (nInf)	To avoid doing or to stop doing something which one does not do well. To avoid repeating a failure. To be hesitant to make friendly advances. To fear rejection.
Defendance (nDfd)	To defend oneself against blame or criticism; to conceal or justify one's failure; to offer extenuations, explanations, and excuses.
Counteraction (nCnt)	To overcome defeat or failure by restraining and retaliating (for pride's or honor's sake to avoid humiliation); to maintain self-respect and pride on a high level.
Harmavoidance (nHarm)	To avoid pain, physical injury, illness and death; to escape from a dangerous situation; to take precautionary measures.
Power Needs	
Dominance (nDom)	To influence or control one's human environment; to persuade, prohibit, dictate; to lead and direct.
Deference (nDef)	To admire and support a superior; to praise or honor; to yield eagerly to the influence of an ally.
Autonomy (nAuto)	To resist influence or coercion; to defy an authority or seek freedom or independence. To refuse to be tied down by family obligations. To love adventure and change.
Aggression (nAgg)	To strike, to pick a fight. To kill. To break things. To dismember.
Abasement (nAba)	To surrender; to comply and accept punishment; to apologise, confess, and

	atone.
Affiliation Needs	
Affiliation (nAff)	To form friendships and associations; To greet, join, and live with others; to cooperate and converse sociably with others; to love; to join groups. To do things which please a person.
Nurturance (nNur)	To nourish, aid, or protect a helpless person. To express sympathy. To mother a child.
Rejection (nRej)	To abandon, ignore or exclude; to remain aloof and indifferent; to be discriminating and critical in the choice of friends.
Succorance (nSuc)	To seek aid, protection, or sympathy; to plead for mercy; to be dependent.
Blamavoidance (nBlam)	To avoid blame or punishment; to inhibit narcissistic and asocial impulses in order not to be rebuked by others.
Information Needs	
Cognizance (nCog)	To explore, ask questions, satisfy curiosity; to look, listen, and examine; to read and seek knowledge.
Exposition (nExp)	To point to and demonstrate; to relate facts; to give information, explain, interpret, and lecture.
Understanding (nUnd)	To analyze experience; to abstract; to discriminate among concepts; to define relations; to synthesize ideas and arrive at generalizations that are comprehensive and verifiable.
Sensual Needs	
Play (nPlay)	To relax, amuse oneself, seek diversion and entertainment; to play games; to laugh, joke, and be merry; to enjoy stressless and 'make-believe' activity.
Sentience (nSen)	To seek and enjoy sensuous impressions; to enjoy pleasurable natural sounds, human voice, poetry and music; pleasurable sights such as color, light, form, movement, decoration, architecture.
Sex (nSex)	To make advances, to seduce a sexually appealing person. To enjoy the company of the opposite sex. To be in love.
Exhibition (nExh)	To attract attention to one's person; to excite, stir, shock, and thrill others.

METHODOLOGY

The complex interplay of narrative, mechanics, and context in *Hades* makes the game an ideal choice for the purposes of this study. *Hades* is a 2020 roguelike RPG developed and published by Supergiant Games. Roguelike is a subgenre of role-playing games set in a procedurally generated environment where the game offers no save/load features, and the game is always replayed from beginning to end. Each gameplay from the start of the game till the end (player either dies or wins the game) is called a run. *Hades* takes place in a

fictional setting of Greek mythology where the player controls the son of Hades, Zagreus, to escape the Underworld and to reach Mount Olympus. In this journey, Olympian Gods help the player with their boons (special powers). The developers of *Hades* chose the difficult path of marrying story to gameplay with unique game mechanisms and revolutionized the notion of permanent death where players embrace each death as an opportunity to learn from their mistakes and to socialize with certain non-player characters (NPCs) of the Greek Underworld (Limon 2020). The game is analyzed with the method of close reading (Fernandez-Vara 2015; Bizzocchi and Tanenbaum 2011) that has been previously demonstrated as an effective way of analyzing video games and exposing hidden layers of meaning within a game. The 176 hour-long close reading of *Hades* from the lenses of the three game experience dimensions mentioned above helped us identify the unique interplay of narrative, mechanics, and context that satisfy different player needs.

CLOSE READING OF *HADES*

The analysis below attempts to identify the mechanisms employed by the chosen game to satisfy the 27 needs mentioned above. For each need satisfied, the relevant player experience dimensions (narrative, mechanics, or context) that satisfy it are given in Table 2. If certain needs are in harmony with others, the interaction between needs will be explained in Table 3 and will be referenced if the original study (Murray, 1938) predicted such need interactions in the form of fusions and subsidizations.

Table 2: Needs and Related Player Experience Dimensions

Need	Player Experience Dimensions
Acquisition	Mechanics
Construction	Mechanics
Order	Mechanics
Retention	Mechanics
Achievement	Mechanics, Narrative and Context
Recognition	Narrative, Context
Counteraction	Mechanics, Narrative
Harmavoidance	Mechanics
Dominance	Mechanics, Narrative and Context
Deference	Narrative, Context
Autonomy	Narrative, Context
Aggression	Mechanics
Affiliation	Narrative, Context
Nurturance	Narrative, Context
Succorance	Narrative, Context
Cognizance	Narrative, Context
Understanding	Narrative, Context
Play	Mechanics
Sentience	Mechanics
Sex	Narrative, Context

Seven needs given in order below (Infavoidance, Defendance, Abasement, Blamavoidance, Rejection, Exposition, and Exhibition) are not satisfied in *Hades* because they contradict with the personality of the protagonist and are not available in the social context and narrative of the game. The game's protagonist: (1) never

“refrains from action because of fear of failure” (Murray 1938, p.192), (2) does not “conceal or justify a failure” (Murray 1938, p.194), (3) does not “submit to coercion and domination” inflicted upon him by Hades (Murray 1938, p.162), (4) does not “exhibit narcissistic and asocial impulses to avoid blame” (Murray 1938, p.187), (5) is never “discriminating or critical in the choice of friends” (Murray 1938, p.177), (6) is not in a social position “to give information, demonstrate facts or lecture” (Murray 1938, p.83), and (7) neither needs nor aims “to draw attention to himself by mannerisms, expressive gestures or extravagant speeches” (Murray 1938, p.171).

Materialistic Needs

The need for acquisition: Satisfied with a very long list of mechanics (collectibles) in *Hades*. There are permanent collectibles and there are also temporary collectibles in each run. Collectibles have different functions, ranging from upgrades to renovations.

The need for construction: Satisfied with the renovation mechanic of the game. The decorative renovations can change the visuals of the game and some renovations may also affect the gameplay.

The need for order: Satisfied with mechanics such as the Mirror of Night (main skill/progression system of the game), the Display Case of Keepsakes (special items received from NPCs) and the Weapon Stands (used for upgrades) in the Arsenal Room. For each run, the player can make a combination of abilities, keepsakes, and weapons.

The need for retention: Satisfied with the collectibles. There is always a balance of spending and hoarding that requires carefully planning. What the players hoards also depends on what the player wants. A player interested in increasing his/her affinity with the characters will make Nectar (which can be given as a present to NPCs) runs, where the primary aim is not to finish levels or defeat the game but to hoard as much Nectar as possible.

Achievement Needs

Need for achievement: This need may accompany any other need and it is the desire or tendency to do things as rapidly and/or as well as possible (Murray 1938, p.164). The purpose of playing a game, any game, is also to accomplish something, to win, to overcome obstacles and/or to rival and surpass others. In this regard, achievement is also defined as the ‘dominant psychogenic need’ (Murray 1938, p.165). Also, the definition, ‘To make intense, prolonged and repeated efforts to accomplish something difficult’, explains the core game experience (mechanics, narrative, and context) of *Hades*.

The need for recognition: Zagreus receives praise and commendation from the game characters for his benevolence, resolution, and help throughout the story.

The need for counteraction: The whole idea of making runs is to overcome defeat or failure by restraining and retaliating. The player will fail many times in the game but will always attempt to make another run and try again (mechanics). Zagreus never wavers in pursuing his goal and always acts in opposition to the order that traps him in the Underworld (narrative).

The need for harmavoidance: Satisfied with very different mechanics (boons, items, etc.) in the game. In this regard, the God mode of the game requires special attention. In this mode, the player will receive a base %20 damage resistance and will receive %2 more per death. So, every failed run will decrease the damage enemies will inflict to the player on the consecutive runs. Making the game more accessible, it gives every type of player an opportunity to experience the game.

Power Needs

The need for dominance: Zagreus attempts to master/control the Underworld by defying his father (narrative), eliminating enemies (mechanics), renovating chambers (mechanics), and increasing his affiliation with other characters (context). He overrides his father’s sentences and decides on the fates of others. He influences the Underworld and the characters in it, becoming an exemplar.

The need for deference: Zagreus admires and praises authority figures like Achilles and Nyx, and he is also respectful of his elders (Gods other than Hades). He even listens to their advice and council, accepting their leadership and boons. He performs little services for each character willingly and follows their advice.

The need for autonomy: Regardless of the rules and conventions of the Underworld, Zagreus pursues his aims. He refuses to be tied down by his father and he is also not interested in the routine tasks given by Hades. He is free to do as he likes, loves adventure, and changes the rules of his environment, such as overriding his father’s judgment and lifting the sentences of Orpheus, Sisyphus, Achilles, etc.

The need for aggression: Satisfied with the core combat mechanics in each run. Most of the boons focus on increasing the damage or effectiveness of player attacks.

Affiliation Needs

The need for affiliation: Zagreus forms friendships with every character (even with the Furies who are the first boss fight in the game) and associations with every Olympian God (in the form of accepting their boons). He shows his goodwill and love towards them. He is willing to do things that will please them.

The need for nurturance: Zagreus helps and supports unfortunate (those punished by his father such as Achilles) and disregarded (such as the house maid) characters. He is moved by the distress of others, even sympathizes Thanatos who is the personification of death. He enjoys the company

of Cerberus in the House of Hades and has the option to pet him.

The need for succorance: Zagreus craves affection and tenderness since her mother Persephone left the Underworld long ago. Zagreus is raised by Nyx and Nyx cares for Zagreus as if he is her own child. Zagreus is particularly drawn to nurturant characters (Persephone and Nyx) and really blossoms when these characters treat him with kindness.

Information Needs

The need for cognizance: Zagreus is curious about the fate of his long-lost mother Persephone. He always asks questions about her to satisfy his curiosity. He listens to other characters and tries to learn as much as possible. He seeks knowledge about her mother and her distant relatives (Olympian Gods).

The need for understanding: The player learns little pieces of information about the fate of Persephone and the disagreements between the family members as he/she progresses in the game. It is up to the player to analyze all the information he/she learned to arrive at a conclusion and understand what happened and why.

Sensual Needs

The need for play: Satisfied with certain mechanics. All tracks of the game soundtrack can be listened by using the Court Music Stand to relax if player seeks diversion. The player will also be granted a lyre that he/she can play.

The need for sentience: Satisfied with mechanic of renovations (decorations) offered by the game. The player can decorate House of Hades as he/she wishes. These decorations come in different colors and style in the form of rugs, pedestals, tables, paintings, portraits, etc.

The need for sex: Satisfied with the romance options (narrative and context) provided by the game. There are three romance options in the game and all the characters can be romanced at the same time without penalties. But the player must maximize his relationship with each character to open these romance options.

DISCUSSION

Needs analyzed in this study interact with each other in different forms (fusions and subsidizations) and some of these need interactions have also been predicted by the original study (Table 3). Two needs are prominent in these interactions: the need for achievement and the need for affiliation. Achievement can be identified as the primary need of any game since it aims to overcome obstacles and to make repeated efforts to accomplish something difficult. Affiliation also requires special attention if the social context of a game allows the player to socialize with other characters or players.

Table 3: Needs Interactions in *Hades*

Needs	Description of Interaction
Acquisition & Achievement	The things that you collect will make it easy to overcome obstacles and to successfully finish runs.
Acquisition & Affiliation	Some of the things collected will strengthen the player's relationship with characters.
Construction & Achievement	Renovations with gameplay effects interact with the need of achievement, things that you build will make it easy to overcome obstacles and to successfully finish runs.
Construction & Sentience	Renovations with decorative purposes interact with the need for sentience.
Order & Achievement	The ability, keepsake and weapon interactions of the player will increase the probability of successfully finishing a run.
Retention & Various Needs	The interaction of the need for retention with other needs depends on what the player retains. For example, if the player is hoarding diamonds for music sheet purchases, the interaction is with the need for sentience.
Achievement & Many Needs	Achievement is in harmony with many needs, such as acquisition, autonomy, aggression, and affiliation.
Recognition & Affiliation	The player should increase his affiliation with characters to get recognized by them.
Counteraction & Achievement	The player must counteract after each failure to beat the game and to achieve his/her goal. This fusion of counteraction and achievement is defined as 'to seek adventure and opposition, to enjoy most difficult tasks' (Murray 1938, p. 196).
Harmavoidance & Achievement	As the players avoid more harm, the probability of finishing runs increases. Harmavoidance being subsidiary to Achievement is defined as 'to keep well in order to accomplish something (Murray 1938, p.198).
Dominance & Achievement	As Zagreus increases his influence on the Underworld, he also persuades others to help him find his mother and reunite the Greek Gods. Dominance being subsidiary to achievement is defined as 'to persuade a group to get something done' (Murray 1938, p.153).
Dominance & Affiliation	Using suggestion and persuasion Zagreus directs the behaviors of others. Dominance being subsidiary to affiliation is defined as 'to bring harmony within a group' (Murray 1938, p.153).
Deference & Affiliation	The player should increase his affiliation with characters to open certain dialogue lines related with deference.
Autonomy & Achievement	The player pursuits his goals by virtue of the autonomy the protagonist possesses. Autonomy being subsidiary to achievement is defined as 'to be independent in order to achieve a purpose'

	(Murray 1938, p.157).
Aggression & Achievement	The player must attack and kill opponents in order to finish a run.
Affiliation & Achievement	Increased affiliation leads to certain game rewards, skills and objects that will help the player on his quest to escape the Underworld. The fusion of affiliation with the need for achievement is defined as 'to collaborate in accomplishing something' (Murray 1938, p.175).
Nurturance & Affiliation	The player increases his/her affiliation with others by helping, supporting, consoling, comforting them.
Succorance & Affiliation	The player should increase his/her affiliation with certain characters to open certain dialogue lines of succorance. Succorance being subsidiary to affiliation is defined as 'appeals for friendly sympathy' (Murray 1938, p.183).
Cognizance & Affiliation	The player should increase his/her affiliation with certain characters to open certain dialogue lines of cognizance.
Understanding & Achievement	The player should progress in the game to understand everything and to open secret endings.
Play & Achievement	The player should progress in the game to satisfy his/need for play.
Sentience & Acquisition	The player should purchase each renovation using various resources and has to collect the resources first.
Sex & Affiliation	The player should increase his/her affiliation with certain characters to romance with them.

All interactions in *Hades* take place 'in character' and the role of the player is to play the humble, good-humored, and often sarcastic protagonist of the game. Among the 27 needs investigated, only seven of them are not satisfied with *Hades*. These needs cannot be satisfied by the game since they contradict with the personality of the protagonist, the narrative and the social context of the game also do not offer any opportunities to satisfy these needs. But it should also be noted that the roguelike RPG *Hades* satisfied a wider range of needs when compared with the study that analyzed the needs satisfied by the open world RPG, *The Witcher* (Bostan, 2009). Different needs are satisfied with different game experience dimensions and the chosen game *Hades* perfectly balances the mechanics, the narrative, and the context to provide a unique experience. We believe that the game owes its success to this creative and balanced interplay between these three player experience dimensions.

CONCLUSION

The Player Needs Inventory (PNI) provides an analytical framework to analyze the player interactions and the player motives within a video game. The framework had been tested with a RPG before and in this study it was tested with a rogue-like video game. The strength of the framework lies within its ability to match individual player actions with individual motives, which will aid researchers of interactive

narrative and player profiling. The need interactions identified in this study are valuable resources for game designers and researchers since we demonstrated how different game mechanics interact with each other to satisfy different player needs. The major limitation of our study is testing the framework with a single video game but the close reading methodology requires intensive analysis such as the 176 hour-long gameplay in our case. We aim to test the framework with different games from different genres in the future. The conducted analysis may also guide researchers interested in applying the PNI framework within the context of player experience research.

REFERENCES

- Bartle, R. 1996. "Hearts, clubs, diamonds, spades: players who suit MUDs". *Journal of Virtual Environments*. Available at: www.brandeis.edu/pubs/jove/HTML/v1/bartle.html.
- Bizzocchi, J. and Tanenbaum, J. 2011. "Well read: Applying close reading techniques to gameplay experiences". In *Well played 3.0: Video games, value, and meaning, 2011*, D. Davidson (Ed.), Pittsburgh, PA: ETC-Press, 262-290.
- Bostan, B. 2009, "Player motivations: A psychological perspective", *ACM Computers in Entertainment* 7, No.2.
- De Grove, F., Cauberghe, V., and Van Looy, J. 2014. "In pursuit of play: Toward a social cognitive understanding of determinants of digital play". *Communication Theory*, 24, 205–223. doi:10.1111/comt.12030.
- Elson, M., Breuer, J., Ivory, J. D., and Quandt, T. 2014. "More than stories with buttons: Narrative, mechanics, and context as determinants of player experience in digital games". *Journal of Communication*, 64, 521–542.
- Fernandez-Vara, C. 2015. *Introduction to game analysis*. New York, NY: Routledge.
- Ines, D.L. and Abdelkader, G. 2011. "Facebook games: between social and personal aspects". *International Journal of Computer Information Systems and Industrial Management Applications* 3, 713–723.
- Jansz, J. and Tanis, M. 2007. "Appeal of playing online first person shooter games". *CyberPsychology & Behavior*, 10(1), 133–136. doi:10.1089/cpb.2006.9981.
- Lee, D. and LaRose, R. 2007. "A socio-cognitive model of video game usage". *Journal of Broadcasting & Electronic Media*, 51(4), 632–650. doi:10.1080/08838150701626511.
- Maslow, A.H. 1968. *Towards a Psychology of Being*. Van Nostrand, New York.
- McDougall, W. 1908. *An Introduction to Social Psychology*. Methuen, London.
- Murray, H.A. 1938. *Explorations in Personality*. Oxford University Press.
- Przybylski, A. K., Rigby, C. S., & Ryan, R. M. 2010. "A motivational model of video game engagement". *Review of General Psychology*, 14(2), 154–166. doi:10.1037/a0019440.
- Reiss, S. 2004. "Multifaceted nature of intrinsic motivation: the theory of 16 basic desires", *Review of general psychology*, 8(3), 179–193.
- Sweetser, P. and Wyeth, P. 2005. "GameFlow: A Model for Evaluating Player Enjoyment in Games". *Computers in Entertainment* 3, 3, Art. 3A.
- Turkle, S. 1994. "Constructions and reconstructions of self in virtual reality: playing in the MUDs Mind, Culture, and Activity", *Mind, Culture, and Activity: An International Journal* 1, 158-167.
- Yee, N. 2007. "Motivations for play in online games". *CyberPsychology & Behavior*, 9(6), 772–775. doi:10.1089/cpb.2006.9.772.

WEB REFERENCES

Limon, N. 2020. Hades Review, IGN. Accessed on 01.11.2021.
<https://www.ign.com/articles/hades-review>