Player Motivations: A Psychological Perspective

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Abstract

Although player motivation is one of the main concerns of computer gaming, research so far has been able to identify only a limited set of motives, which are not founded on formal theories of human motivation. Assuming that goal-directed behavior is triggered by the interaction between personal and environmental factors, this article aims to analyze a broader range of gaming motivations derived from basic human needs. The psychological needs investigated in this study are based on the psychogenic needs divided into six categories: materialism, power, affiliation, achievement, information, and sensual needs, defined by Murray [1938] in his extensive research. Since the present work defines motivation as a product of continuous interactions between players and the virtual world, each individual psychological need is briefly described in terms of the actions it provokes. In this context, this article is not concerned with why people play computer games but how they are motivated in the game.

Detailed analysis of the conceptual components of player motivation focuses on matching each psychological need to common gaming situations in computer role-playing games (RPGs). Since this game genre provides interactive virtual environments capable of offering experiences analogous to real life, it is highly relevant to motivational studies. The relationship between motivational factors and gaming situations is discussed with examples from a recently released RPG, which takes place in a fantasy world full of social issues and conflicts, where players usually find themselves in situations that require a choice between the lesser of two evils. It is expected that the variables defined in this study should facilitate the design of computer games that satisfy a broader range of player motivations by providing ways to investigate the relationship between psychological needs and the gaming environment, while bearing in mind the basic components of goal-directed behavior.

1. Introduction

Video games provide an extraordinary kind of intimacy with machines in interactive and rule-governed microworlds, where players enter into a virtual environment of infinite possibilities, experiencing altered states of consciousness and becoming absorbed in what is happening onscreen [Turkle 1984]. These virtual environments, which are complex, emergent systems of uncertainty, information and conflict, are governed by the concept of "play" that refers to a range of activities accompanied by a state of pleasure and enjoyment. Sutton-Smith's [1997] seven "rhetorics of play" – progress, fate, power, identity, the imaginary, the self, and the frivolous – define the specific forms and uses of play embedded in our everyday lives. A computer game can embody more than one rhetoric, but play as a form of conflict and contest (power), a means of expressing an identity and belonging to a group (identity), as imagination and creativity (the imaginary), and a means of relaxation and escape (the self), are the most common forms experienced in computer games. Regardless of the embodied play rhetoric, one of the primary concerns of game designers is to maximize player enjoyment.

Enjoyment is defined as a complex construct with physiological, affective, and cognitive dimensions, and is the core of entertainment media [Vorderer et al. 2004]. Two important theories about individual motivations for using entertainment products for enjoyment are the mood management theory [Zillmann 1988a; 1988b] and affective disposition theory [Zillmann 1994; 1996]. The hedonism hypothesis of the first theory assumes that people are more motivated toward experiences that maximize pleasant situations and moods. The second theory explains the process of emotional involvement and motivation of users in relation to the characters offered by the media. Since both theories assume the user to be a passive witness of ongoing events, it is difficult to apply them to interactive and immersive forms of entertainment such as video game-playing. To understand the qualities that differentiate computer games from other motivating experiences, it should be useful to examine the study of Pine and Gilmore [1999], who categorized different types of experiences on the basis of two dimensions: participation and connection. Participation is either active or passive; connection comes in two forms, absorption (attention direction) and immersion. Game players are not simply directing their attention but are physically or mentally becoming part of the gaming experience itself through active participation. Thus, according to this categorization, video games can be classified as escapist experiences where active participation and immersion play a central role.

The psychological appeal of these escapist experiences that we call video games has been a popular

discussion among scholars, but most of the studies on player motivations so far either focus on the motivational aspects of games from an educational perspective [Loftus and Loftus 1983; Provenzo 1991; Stewart 1997; Prensky 2001; 2002; Gee 2003; 2005] or are concerned with the negative effects of gaming and violence in video games [Anderson and Ford 1986; Cooper and Mackie 1986; Anderson and Bushman 2001; Sherry 2001; Anderson 2004; Gentile et al. 2004]. There have been attempts to define the underlying motives of players, but these studies identify motives that are not based on the fundamental components of human motivation. In contrast, this article aims to define the basic motives of game players that originate in the relationships between the psychological needs of the user and the gaming situations provided by the virtual environment. Instead of defining a limited set of vague concepts with much scope for subjective interpretation, our aim is to analyze a broader range of motivations based on need theories that investigate various categories of person-environment relations.

Two major studies that influenced researchers are the intrinsic motivations taxonomy of Malone and Lepper [1987] and the flow framework of Csikszentmihalyi [1990]. Although their taxonomy was not specifically developed for computer games, Malone and Lepper analyzed intrinsic motivations for learning, and defined the individual/interpersonal components of motivation. Csikszentmihalyi's flow framework was applied to computer games by Sweetser and Wyeth [2005] who defined a model for evaluating player enjoyment. Another framework for positive and negative motivational factors in gameplay was defined by Kellar et al. [2005]; three essential motivational needs in video games were identified by Ryan et al. [2006]; and ten motivations for play in online games have been grouped into three factors by Yee [2006]. The four gaming motivations (control, context, competency, and engagement)[1] defined by Kellar et al. [2005] and the three motivational factors (autonomy,[2] competence, and relatedness) defined by Ryan et al. [2006] can be considered a subset of the union of variables identified by Malone and Lepper [1987] and Yee [2006]. Discussing the specifics of each variable defined by these studies is beyond the scope of this article, but it would be beneficial to compare the three studies [Sweetser and Wyeth 2005; Malone and Lepper 1987; Yee 2006] that are capable of identifying a relatively large number of variables for analyzing player behavior.[3] Figure 1 shows the variables in these studies and their intersections.

[1] Kellar et al.'s “context” [2005] is similar to Malone and Lepper;s “fantasy” [1987]. Kellar and his colleagues defined engagement as personalization, rewards, role-playing, challenge, personal notes, collaboration, and communication, which is actually a combination of various factors defined in the framework of Malone and Lepper.

[2] Kellar et al. [2005] defined “autonomy” as the user's control of tasks.

[3] Malone and Lepper's "curiosity" (1987) can be defined as an internal construct of “challenge” and “fantasy,” but it is an independent variable in the original study.

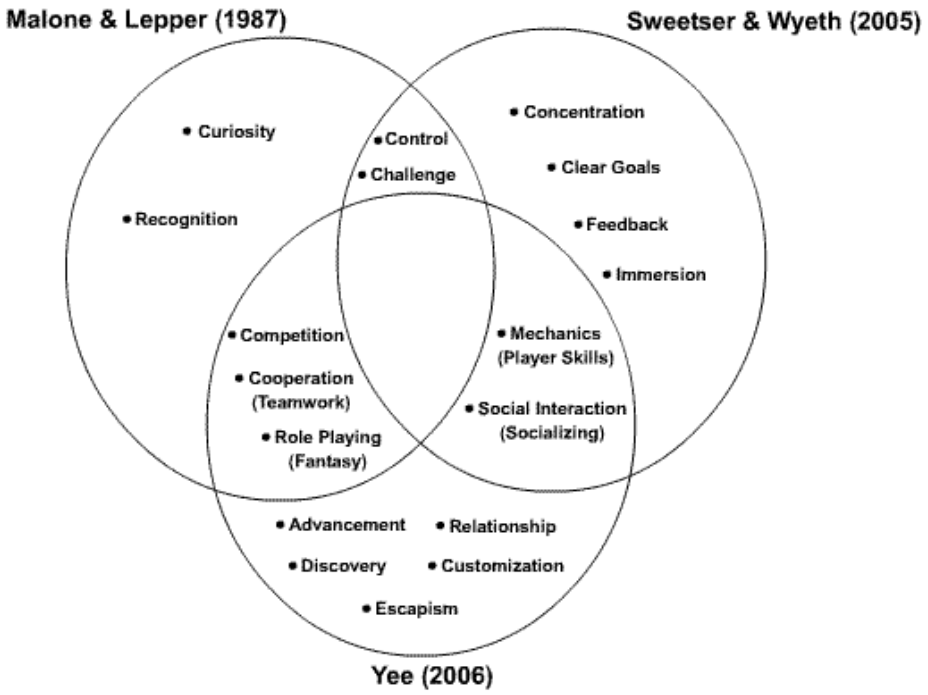

Fig. 1. A comparison of three motivational studies.

Even though the three studies in question share some motives it is not surprising to see that the intersection of the three sets is empty. Different approaches to motivational aspects of player behavior when applied to computer games with different structures and content should obviously represent different facets of player psychology. The taxonomy of Malone and Lepper [1987) was originally designed for analyzing learning situations, and the game flow model of Sweetser and Wyeth [2005] was founded on the flow framework of Csikszentmihalyi [1990], which attempted to identify the attractiveness of an activity (not limited to achievement-related contexts) that urges people to repeatedly engage in it. The motivation model of Yee [2006] is based on the play styles of Bartle [2004], which have never been empirically tested to validate that the model's four player types are independent of each other. Hence it is also important to note that player motivations measured by subjective means such as questionnaires also depend on the content and structure of a game. This article does not claim that these studies are irrelevant to the motivational constructs of player behavior. Although each study is relevant in its own context, there is still no integrated model of player motivations in computer games. Therefore, assuming that human motivation is triggered by the psychological needs, this article analyzes goal-oriented behavior and the individual motivations of game players in relation to their interactions with the environment.

2. Fundamentals of Human (Player) Behavior

Human behavior is geared to effecting change in the environment, and changes in the environment are possible through the attainment of goals or disengagement from unattainable goals, which are facilitated by coordination of perceptions, skills, activities, and emotions [Heckhausen and Heckhausen 2005]. Motivation to reach a goal is influenced by both personal and situational factors. Personal factors are a person's needs, motives, and goals and situational factors are opportunities and possible incentives provided by the environment. According to Murray [1938], goal-directed human behavior can be explained by continuous interactions between individuals and their environments. Interactions between personal and situational factors trigger actions. Outcomes are the results of actions, and reinforcers/punishers are consequences that arise from outcomes. This basic structure of human behavior is also applicable to game players who experience different gaming situations with different incentives within a virtual world and then decide on an action based on their motives, needs, and goals; Figure 2 shows the motivated action model for game players.

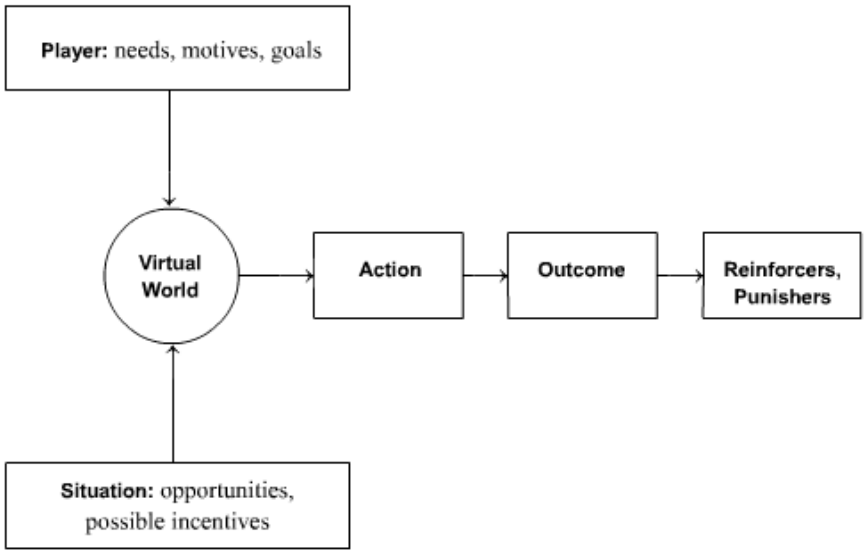

Fig. 2. A modified version of the motivated action model [Heckhausen and Heckhausen 2005, p.3].

Reinforcers are stimuli that select appropriate behaviors and teach us what to do; punishers are stimuli that select against appropriate behaviors and teach us what not to do [Skinner 1938;1953; Staddon and Simmelhag 1971]. Incentives are external stimuli that motivate or induce behavior [Bolles 1975; Logan and Wagner 1965]. A positive incentive motivates behavior and a negative incentive motivates avoidance behavior. Briefly, reinforcers and punishers are the actual consequences of behavior, whereas positive and negative incentives are the anticipated consequences. The association between the reinforcers/punishers and incentives may also end up as generalizations. If a response consistently results in a reinforcer/punisher, then that

reinforcer/punisher might become a positive/negative incentive [Bolles 1975; Logan 1960]. Reinforcers and punishers also provide a feedback mechanism for goal-directed behavior. Feedback tells people how they are progressing relative to a goal; and goals do not motivate behavior unless feedback is provided [Bandura and Cervone 1983].

The strength or appeal of an incentive as well as the distance to the incentive are also important factors that affect goal-directed behavior. Lewin [1936] described this phenomenon as a psychological force, which is dependent on both the valence (strength) of the incentive and the psychological distance to the incentive. Objects or activities that have a positive valence attract the individual, and are sought and wanted. On the other hand, those that have negative valence repel the individual, and are avoided and not wanted. Objects or activities that are closer are approached more easily than those that are far away. In computer games, the valence of incentives is usually reflected in the rewards the player receives. Short-term goals have more immediately achievable rewards, and long-term goals provide the overall reward structure of the game. As the player progresses, the positive valence of objects or activities increases accordingly. Psychological distance to incentives is reduced with the introduction of discrete transportation techniques such as teleporting, which enable the player to traverse long distances quickly.

The difficulty of achieving goals and their specificity also influence goal-directed behavior. Difficult goals are harder to achieve but are usually associated with better outcomes [Locke and Latham 1990]. The difficulty of a goal directly influences the subjective probability of success, which is a person’s belief that an event will occur. The specificity of the goal determines its clarity and comprehensibility. If goals are vague or unspecified, people will be less motivated to act because axhieving them is not predictable [Klein 1989]. Another important element is commitment or concentration, which represents a person's willingness to achieve a goal. The amount of effort a person invests in trying to achieve a goal also affects his or her probability of achieving it. Self-confidence and self-esteem are other personal factors effective in triggering motivated actions. In fact, the ability to concentrate on a task, the importance of having clear goals, and the significance of achievable tasks are also important components of a flow framework [Csikszentmihalyi 1990]. Flow experiences require high levels of skill and result in a sense of effortless action, and computer gaming is one of them [Sweetser and Wyeth 2005].

From a gaming perspective, the terms described previously should be better understood with a concrete example. Assume that the player is faced with an encounter where a powerful-looking monster blocks his or her way (situation). The player can avoid the monster, but thinks that this

monster, which he or she faces for the first time, will give a huge amount of experience points (positive incentive) if the player manages to defeat it. The player's aim is to defeat the monster (the goal) and the player's motive is advancing his or her character (achievement motive). But the player, knowing that the battle will be hard, is aware that he/she has to drink a few healing and power-bestowing potions (harmavoidance need) if the player wishes to survive. Therefore, the player chooses to attack (action) and kill the monster (outcome). Unfortunately, the monster gives much less experience points than the player anticipated, but drops a few powerful items instead (reinforcer). The player may conclude that this type of monster will drop powerful items if he or she faces it again (reinforcer transforming into an incentive).

3. Psychological Needs as a Source of Motivation

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. He defined instincts, some of which are assigned to corresponding emotions, to describe human behavior directed towards a specific goal. Another study was conducted by Maslow [1968], who defined groups of needs in a hierarchical order according to their relevance in personality development. However, it was Henry Murray [1938] who formalized the study of needs. Jackson [1974] translated Murray's needs into personality traits, and Singer [1990] demonstrated how these needs can be conceived as life-goals. According to Allen [1994], such high-level uses (relationship with personality traits and life-goals) guarantee that Murray's interaction-oriented needs will remain in the mainstream of personality and psychology research for an indefinite period of time. Thus, we can conclude that his research still has an impact on researchers today, and is applicable to motivational studies in interactive media such as computer games.

According to Murray [1938], needs are a major source of human motivation, which arise from the person-environment interactions. The goals pursued to satisfy these needs determine human motivation. Murray defined two sets of needs: *viscerogenic* and *psychogenic*. Viscerogenic needs are physiological in nature and are characterized by periodic body changes (such as the need for water, food, urination, etc.) Psychogenic needs are psychological in nature, concerned with a person's mental and emotional states. Two important factors that affect needs are strength and periodicity [Murray 1981]. A need may be considered strong if it occurs regularly under certain conditions; if it occurs occasionally with great intensity; or if it is persistent for a long period of time (duration). Periodicity refers to the active and inactive cycles of a need. Viscerogenic needs are

quite prone to periodicity and psychogenic needs show a tendency toward periodicity.

In his study, Murray [1938] identified 27 psychogenic needs that affect goal-directed human behavior. In this article, these needs are grouped into six categories, three of which (power, affiliation, and achievement) are major motivations in literature. Although it is possible to find similar classifications [Mayer 2007; Carver and Scheier 2000], this study aims to define categories consistent with different gaming situations. Thus, (1) materialistic needs are associated with inanimate objects; (2) power needs represent the will to arouse strong emotions in other people, to be in charge, and to be noticed; (3) affiliation needs represent the motive to establish, maintain, or restore positive social relationships with others; (4) achievement needs stand for the desire to achieve success and to overcome obstacles; (5) information needs symbolize the instinct to gather and analyze information; and (6) sensual needs represent the tendency rowards exciting or gratifying experiences that satisfy or are attractive to the senses. Murray [1938] defined each need with appropriate desires and effects, related feelings and emotions, relevant character traits and attitudes, matching actions and their relationships with other needs. Since this article focuses on goal-directed behavior in the context of user interactions, each psychological need is briefly described in terms of the actions it provokes. The next section analyzes these needs in relation to various gaming situations that can be experienced in RPGs.

3.1 Materialistic Needs

Although it is difficult to find motivational studies about materialistic needs, scholars in a wide variety of fields are interested in the sense of possession and psychological ownership. Acquisition of objects and the accompanying sense of possession are among the basic constructs of human psychology [James 1890]. Possession or ownership of an object also triggers the need to protect, defend, control, and improve the entity [Furby 1978]. In this study, Murray's four variables [1938] are classified as materialistic needs.

- *Acquisition* (*nAcq*): To gain possessions; to grasp or steal things; to bargain and gamble.
- *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.

3.2 Power Needs

Power means being visible to others, exerting influence over other people, and having high status [Winter 1988; 1992]. Exerting power has negative connotations, but it is considered a positive emotional experience that can induce a sense of strength or control with a positive valence [Anderson and Berdahl 2002]. Power holders use persuasion, threats, promises, and rewards to influence other people. If they face counter-power, they might either fear the other's power or get more aggressive if they have sufficient self-confidence [Kipnis 1976]. People greatly in need of power also surround themselves with symbols of power and high-prestige possessions [Winter 1988]. In this study, six of Murray's variables [1938)] are classified as power needs.

- *Aggression* (*nAgg*)**:**[4] To attack or injure; to murder; to belittle, harm or maliciously ridicule a person.
- *Blamavoidance* (*nBlam*): To avoid blame or punishment; to inhibit narcistic and asocial impulses in order not to be rebuked by others.
- *Counteraction* (*nCnt*)**:** To overcome defeat or failure by restriving and retaliating (for pride's or honor's sake to avoid humiliation); to maintain self-respect and pride on a high level.
- *Defendance* (*nDfd*): To defend oneself against blame or criticism; to conceal or justify one's failure; to offer extenuations, explanations, and excuses.
- *Deference* (*nDef*)**:** To admire and support a superior; to praise or honor; to yield eagerly to the influence of an ally.
- *Dominance* (*nDom*): To influence or control one's human environment; to persuade, prohibit, dictate; to lead and direct.

3.3 Affiliation Needs

Affiliation is the need for being in the company of others, cooperating, exchanging views and being friendly. People affiliate with each other for various reasons, such as getting help in achieving goals, to obtain attention or to get emotional support. Affiliative behavior is affected by expectancy [Fishman 1966]; people are friendlier to others when their expectations relating to the outcomes of this behavior are positive. If their expectancies are low, they might reject affiliation. The motive for affiliation has both approach (hope) and avoidance (fear) components [Mehrabian 1970]. Social skills are stronger in people who have high hopes for affiliation and weaker in people who fear rejection. In this study, Murray's five variables [1938] are classified as affiliation needs.

[4] In literature, aggression is usually classified as a sado-masochistic need, but since it fuses with dominance, autonomy, and defendance [Murray 1938], it is considered a power need in this study.

- *Abasement* (*nAba*): [5] To surrender; to comply and accept punishment; to apologise, confess, and atone.
- *Affiliation* (*nAff*): To form friendships and associations; To greet, join, and live with others; to co-operate and converse sociably with others; to love; to join groups.
- *Nurturance* (*nNur*): To nourish, aid, or protect a helpless person. To express sympathy. To mother a child.
- *Rejection* (*nRej*): To abandon, ignore or exlude; 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.

3.4 Achievement Needs

The need to achieve success is closely related with the motivation for avoiding failure, which may inhibit people from attempting to achieve goals [Atkinson 1957]. The perceived probability of success and the incentive for achievement-related behavior also influence this motive. According to Heckhausen [1974], an intended action may be perceived as achievement if it results in a concrete outcome that is measurable in terms of standards of quality or quantity and if the task is neither too easy nor too difficult. Behaviors that are characteristic of achievement-motivated individuals are as follows: pursuing realistic targets, striving for independence, and preferring moderately difficult tasks [Mehrabian 1969]. In this study, Murray's [1938] six variables are classified as achievement needs.

- *Achievement* (*nAch*): To overcome obstacles; to exercise power; to strive to do something difficult as well and as quickly as possible.
- *Autonomy* (*nAuto*): To resist influence or coercion; to defy an authority or seek freedom or independence.
- *Harmavoidance* (*nHarm*): To avoid pain, physical injury, illness and death; to escape from a dangeours situation; to take precautionary measures.
- *Infavoidance* (*nInf*): To avoid failure, shame, humiliation, ridicule; to refrain from attempting to do something that is beyond one's powers.
- *Recognition* (*nRec*): To excite praise and commendation; to demand respect; to boast and

[5] In the literature, abasement is usually classified as a sado-masochistic need, but since it fuses with succorance and deference [Murray 1938], it is considered an affiliation need in this study.

exhibit one's accomplishments; to seek distinction, social prestige, honors or high office.

- *Exhibition* (*nExh*): To atract attention to one's person; to excite, stir, shock, and thrill others.

3.5 Information Needs

Individuals need information and knowledge as much as they need social interaction and biochemical exchange. People search for information and analyze it to build a comprehensive reference system that enables them to know their places and that of other objects in the order of things. Cognition is the need to engage in and enjoy analytical thinking, to weigh pros and cons about an issue, and to structure relevant situations in meaningful ways [Cohen et al. 1955; Cacioppo and Petty 1982].

- *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.

3.6 Sensual Needs

Sensual needs seek satisfaction in exciting stimuli or experience [Zuckerman 1994]. Among the three sensual needs mentioned in this study, play is the activity done for fun, and for no other reason. Zones of sentience are derived from human senses; some examples follow: the desire to touch and be touched (tactile); pleasurable odors (olfactory); delicious food (gustatory); certain tones of voice (auditory); pleasurable sights (visual). The sex motive, both a biological and emotional process, drives actions such as making advances, seduction, and seeking the company of the opposite sex.

- *Play* (*nPlay*): To relax, amuse oneself, seek diversion and entertainment; to play games; to laugh, joke, and be merry.
- *Sentience* (*nSen*): To seek and enjoy sensuous impressions; to perceive and comment upon the sensuous quality of objects.
- *Sex* (*nSex*): To form and further an erotic relationship; to have sexual intercourse.

3.7 Reassessment of Previous Studies on Player Motivations

Before analyzing needs from a gaming perspective, variables defined by the three motivational studies discussed in the first section [Sweetser and Wyeth 2005; Malone and Lepper 1987; Yee 2006] are matched to corresponding psychological needs and/or components of goal-directed behavior in Table I. It is expected that this comparison should give readers insight into the following facts: the correspondence between psychological needs and other theoretical frameworks and motivational studies; the close relationship between goal-directed behavior and human needs; and the applicability of Murray's [1938] study to the motivations of computer game players. It is important to note that the four play styles of Bartle [2004] can also be defined in terms of psychological needs: achievers are *nAch* and *nAcq*; explorers are *nCog* and *nSen*; socializers are *nAff* and *nPlay*; and killers are *nDom* and *nAgg* oriented players.

Table I

Variable	**Defined By** [6]	**Corresponds To** [7]
Concentration	S & W, 2005	GDB: concentration
Clear Goals	S & W, 2005	GDB: goal specificity
Feedback	S & W, 2005	GBD: feedback
Immersion	S & W, 2005	nSen, GDB: concentration
Control	S & W, 2005; M & L, 1987	nDom, nAuto
Challenge	S & W, 2005; M & L, 1987	GDB: goal difficulty, outcomes, feedback, self-esteem
Mechanics	S & W, 2005; Y, 2006	nAch, nUnd, GDB: reinforcers
Social Interaction	S & W, 2005; Y, 2006	nAff, nNur
Curiosity	M & L, 1987	nUnd, nSen, nCog, GDB: feedback
Recognition	M & L, 1987	nRec
Competition	M & L, 1987; Y, 2006	nAff, nAch
Cooperation	M & L, 1987; Y, 2006	nAff, nAch, nRec
Fantasy	M & L, 1987; Y, 2006	nPlay, nUnd, nSen
Advancement	Y, 2006	nAch, nAcq, nDom

[6] S & W, 2005 refers to Sweetser and Wyeth [2005]; M & L refers to Malone and Lepper [1987]; Y, 2006 refers to Yee [2006].

[7] GDB refers to goal-directed behavior, abbreviations beginning with n are defined by Murray [1938].

Relationship	Y, 2006	nAff
Discovery	Y, 2006	nCog, nUnd, nSen
Customization	Y, 2006	nSen, nExh
Escapism	Y, 2006	nPlay, nSen

4. Matching Psychological Needs to Gaming Situations: Evaluation of "The Witcher"

To analyze psychological needs and their relations to gaming situations, the criterion by which the genre and game in this study was chosen was, as much as possible, to satisfy a wider range of psychological needs. Since game genres are not determined by player motivations but by their subject, setting, presentation, perspective, and game-playing strategies, the different game genres satisfy different needs. For example, players of strategy games are more concerned with materialistic needs such as object acquisition, resource management, construction, and organization, whereas social online worlds such as *Second Life* are built on affiliation. In terms of motivational studies, RPGs require special attention, since they offer virtual environments analogous to the real world. They are social and interactive artificial universes with their own rules, politics, culture, ethics, and economy, thus capable of satisfiying the different needs of players. The selected RPG for this study is *The Witcher,* developed by CD Projekt and released in the fourth quarter of 2007. Our was conducted on the enhanced version of the game, which was released on September, 2008.

The Witcher is set in a dark fantasy world inspired by the works of Polish author Andrej Sapkowski. It is not the *The Witcher*'s game mechanics or the visual realism of its virtual world that makes it a perfect choice for analyzing player motivation, but it is the behavioral realism of its synthetic agents, the maturity of its fantasy world full of social issues and conflicts, and in the freedom it allows players to make complex choices that enable the game to satisfy a wide range of psychological needs. Instead of making good vs evil choices, players usually find themselves in situations that require choosing between the lesser of two evils. These choices directly affect the virtual environment and govern player interactions with the inhabitants of the fantasy world. The world is not dull but full of activity, which gives it a living feeling. It is possible to see people working on their farms, children playing hopscotch in the streets, soldiers sharpening their swords, drunkards staggering around, and jesters entertaining people. The agents are also responsive to environmental changes: for example, when it starts raining most of the villagers run for cover and make various comments about the bad weather.

4.1 Gaming Situations: Materialistic

Acquiring objects in RPGs is possible by looting (items dropped by enemies or monsters), as quest rewards, by stealing, by acquiring objects from common containers (treasures), or by buying them from sellers. Acquiring items in massive multiplayer online RPGs has an interesting impact on the real world also, because some players trade items they claimed in the virtual world at auction sites like e-Bay, which creates exchange rates for the currency from the virtual worlds and those of the real world. For example, the value of the currency in *Everquest* (a MMORPG with the 77th largest economy in the real world), even exceeds the value of the Japanese yen and Italian lira [Castranova 2005]. So we can conclude that acquiring objects in MMORPGs is both an internal drive of gameplay and an external one for acquiring real-world money from auctions.

When dealing with merchants or sellers in an RPG, players may bargain for prices if they have the option to do so. If bargaining is associated with character skills, players have to spend some of their progress points on the relevant skills necessary to become better bargainers.[8] The need for order is satisfied by an inventory structure in which items acquired by the players are stored. To simplify the ordering process, inventories may have different slots for different types of objects, but they usually have limited storage space. If the player wishes to retain possessions or to hoard them, he or she can place them in safe containers (items in these containers do not get lost) or places, or get help from NPCs (nonplayer characters) that act as a safe-deposit boxes. Players can also design and/or construct their own items by gathering unique pieces together and/or with the help of NPCs that can create new objects. Construction usually comes in the form of weapon or armor upgrades, but there are extreme examples such as constructing a castle to defend a territory.[9] Another interesting opportunity is offered by recent RPGs via game-modding tools. With the help of such tools, users can customize the virtual world and/or create new gaming spaces that can be shared over the Internet with other players.

[8] For example, bargaining in *Elder Scrolls III: Morrowind* and *Elder Scrolls IV: Oblivion* is governed by the mercantile skill and personality attributes.

[9] Players have to rebuild a ruined castle and restore security to the lands surrounding it in *Neverwinter Nights 2*.

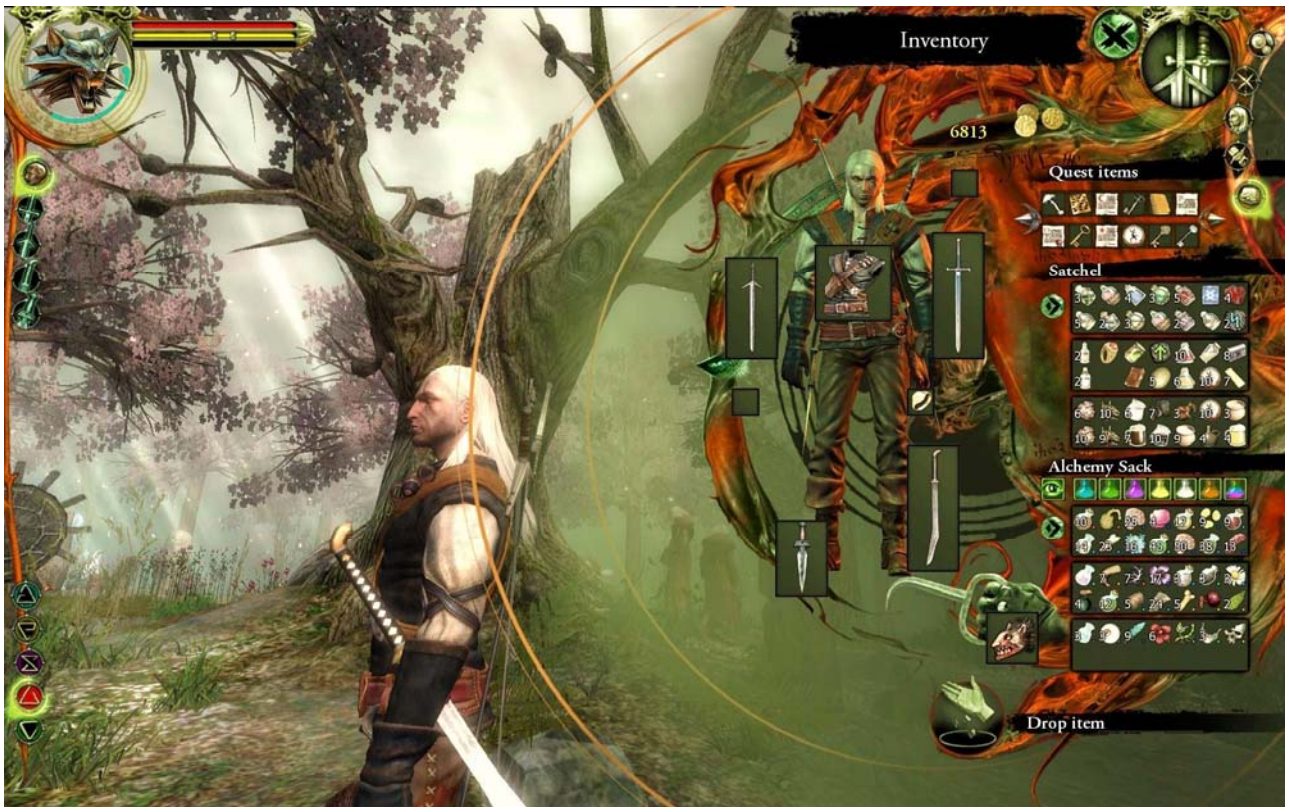

Fig. 3. *Witcher*'s inventory.
(with permission of CD Projekt Red).

Witcher players can acquire items in the common forms mentioned above, except that there is no stealing option. The inventory provides different slots for weapons and armor, but there is also a group of slots where quest items (items necessary for completing quests) are stored in a satchel in which common items are placed and also an alchemy sack where alchemical components can be sorted according to their ingredient types. Gambling is occasionally implemented in computer games,[10] and the selected RPG also offers an opportunity to gamble via a dice game that has rules similar to poker. In this dice game the player has to defeat a number of weaker opponents to advance his or her gambling career and face better opponents. Hoarding items is possible with the help of inn-keepers who provide an extra storage space for the player. The player can upgrade his or her weapons by acquiring meteorites or rune stones and getting help from a weaponsmith. The Djinni adventure editor that comes with the enhanced edition of *Witcher* provides molding opportunities for players. In terms of materialistic needs, The *Witcher* conforms to the common forms that can also be found in other RPGs.

[10] There are also gambling opportunities in both *Knights of the Old Republic* series and *Mass Effect*.

4.2 Gaming Situations: Power

Aggression is the primary power need satisfied by most RPGs. Although some quests can be solved in more peaceful ways in such games, combat is almost unavoidable. A player has to attack opponents and kill or injure them in order to achieve his goals. Assassination or murder may be possible, but these are usually optional choices for players[11] unless the game is built on these themes.[12] Satisfying the needs for deference and dominance depends on the virtual world's creating a strong sense of social life. Guilds and factions, which consist of groups of PCs (player characters) or NPCs who share their resources and buildings are important aspects of an RPG's social system. Players join the guilds as low-rank members and advance their careers as they progress through the game. This ranking system requires that newly recruited members support their superiors; conversely, when players become higher-ranking members they demand respect, praise, and honor from their subordinates. As players achieve higher levels in the game and better ranks in the guilds, it is expected that they should be abale to influence and control others;[13] otherwise, it can be argued that levels and ranks have no meaning other than being numerical values.

The other three power needs, blamavoidance, counteraction, and defendance are harder to satisfy and require certain actions from NPCs. If the player is not blamed and/or criticized for his actions, it should be more difficult to justify the need for him or her to avoid blame, to counteract, or to defend. The critical component of these social interactions is choice. If the player is not allowed to make choices in the game, he or she should not be blamed or criticized for their actions. Freedom of choice for the user is an important requirement of gameplay, and enhances interactivity [Salen and Zimmerman 2004; Borvoets 2007]; but choices in RPGs are usually polarized between the dark side and the light side,[14] or evil and good (neutral choices are also possible).[15] When players are faced with black and white choices, it should be easier for them to justify or defend themselves.

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[11] Players of *Elder Scrolls III: Morrowind* can join the faction of Morag Tong (Assassin's Guild) that works with writs of execution to bypass officers of the law.

[12] Although it is not an RPG, players (as assassins) in the world of *Assassin's Creed* explore the three major cities of the Holy Land in the 12th century.

[13] When they become guildmasters, players of *Elder Scrolls IV: Oblivion*, can change the guild's current priorities and receive a portion of the total profits.

[14]The *Knights of the Old Republic* series tracks actions and speech to determine whether the player's character aligns with the light or dark side of the Force.

[15] RPGs that are built upon AD&D table-top role-playing systems such as *Baldur's Gate* and *Neverwinter Nights* series incorporate an alignment system composed of a good, evil, and neutral axes, as well as another axis for lawful, chaotic, and neutral.

According to Loftus and Loftus [1983], computer games provide an alternative world where mistakes can be unmade; the consequences of choices can be fixed by reloading a previously saved game. In contrast, Rollings and Adams [2003] argue that a choice should be interesting, and therefore should have both positive and negative aspects, leaving a sense of regret, much like choices in life. It can be concluded that choices in computer games are also meaningful as long as there is a relationship between the player's actions and the system's outcome. Players should not be blamed or criticized for choices that do not affect the virtual environment or actions that are ignored by characters inhabiting that world. Player choices should have a meaningful impact on the virtual world and its inhabitants (choices can also affect player avatar's physical appearance).[16]

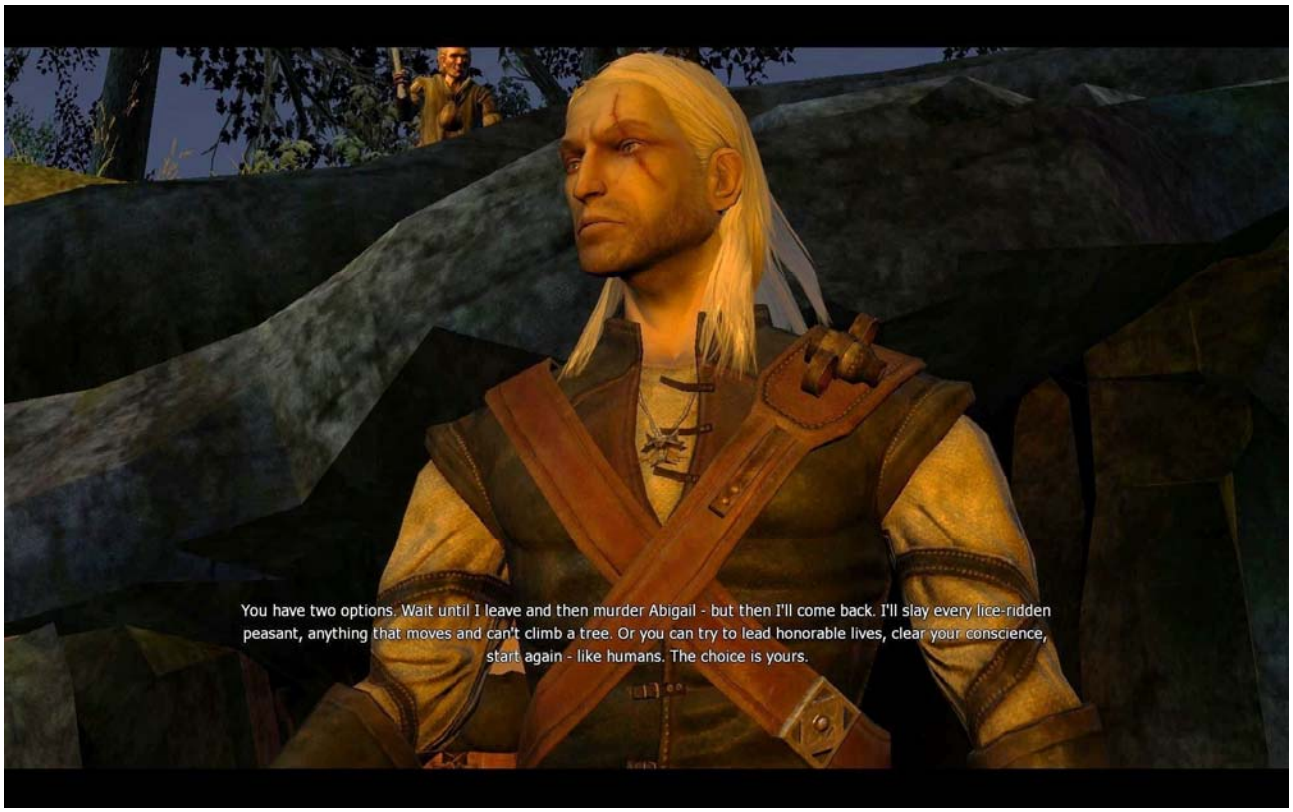

Fig. 4. Geralt makes a choice and confronts the angry mob that wants to burn Abigail the witch.
(with permission of CD Projekt Red)
Subtitle: "You have two options: Wait until I leave and then murder Abigail - but then I'll come back. I'll slay every lice-ridden peasant, anything that moves and can't climb a tree. Or you can try to lead honorable lives, clear your conscience, and start again - like humans. The choice is yours."

The *Witcher* has two revolutionary characteristics that differentiate it from other RPGs: the grey (ambivalent) choices provided by the game and the perceivable impact of these choices on the environment. Plot points involve serious moral choices and the game characters seem like real

[16] The ethical decisions players make in *Fable* affect how players are perceived by others, but also have a visual impact on their appearance.

people, not the good-evil stereotypes that populate most RPGs. Geralt of Rivia, the protagonist of the story, is usually criticized or blamed for his choices by NPCs, but he himself also evaluates and judges his decisions, since he has lost his memory and does not know what his moral and ethic values should be. When players make critical choices in the game, they are later shown scenes that demonstrate the effects of their actions. For example: would you kill the female vampires of the local brothel (even though they are monsters, they do not kill their customers) or help a knight of the order who wishes to take revenge because his daughter has started working in the brothel (by her own free will)? Would you kill the werewolf who is the captain of the guard and hunts and eliminates criminals in the city, or let this dangerous creature roam freely in the streets at night? As these choices can no longer be defined as black or white, it becomes harder for the players to justify their actions or to defend themselves. Nevertheless, players have to make choices between avoiding blame, counteracting, and/or defendance. For example, if the player is inclined to kill the werewolf he/she has to defend his arguments against the captain of the guard (who is the werewolf), and later counterattack to defend his own (the player's) honor.

4.3 Gaming Situations: Affiliation

Joining guilds and interacting with NPCs through dialogue are two major affiliation opportunities provided by single-player RPGs. Guild relationships consist primarily of subordinate-superior interactions, and they only give a sense of belonging to a group of people with similar goals or abilities. Friendly interactions with common NPCs may satisfy the player’s affiliation needs, but these relationships should become stronger if NPCs were able to join the player and cooperate with him or her. NPC characters that become party members, which may be partially or fully controlled by the player, are called henchmen or followers. Players tend to form deep connections with these characters through shared adventure and dialogue [Christian et al. 2002]. These NPC characters or creatures[17] that join the party may become especially handy in combat situations, but relationships with these characters are more believable if they have their own personalities, emotions, goals, and motivations; if they are perceptive of environmental changes; if they keep track of their own social interactions (memories); and if they are capable of reacting to player choices and actions throughout the game [Kline and Blumberg 1999; Romano and Wong 2004; Livingstone 2006; Cutumisu et al. 2006]. For example, characters that join the player in *Baldur’s Gate II: Shadows of Amn,* all have different backgrounds and distinctive personalities, and it is their phrases,[18] arguments, and battle

[17] Players can add a dragon to their party in *Might and Magic: Day of the Destroyer*.

[18] It is surprising to see that people still remember NPCs from *Baldur's Gate II*, which was released in September, 2000. It is possible to see groups devoted to *Baldur's Gate II* characters in social networks such as Facebook.

cries that obtain the player's loyalty. If such characters become dissatisfied with the player's decisions, they can leave the party and never come back.

Gaming situations for power needs such as abasement, nurturance, rejection, and succorance depend on the sociability of the NPCs. Aiding the helpless usually comes in the form of donations to temples or beggars. Quests can also be built on the theme of helping or protecting the helpless; but mothering or fathering a child is rarely on offer.[19] Players may get help from their henchmen or fellow guild members, but the protagonist is rarely dependent on other NPCs. Encounters are usually experienced as win or die situations where surrender is not an option. Players have various options for rejection, such as declining an NPC offer to join the party, refusing an invitation to join a guild[20] and rejecting a quest offer, and so on. But it is important to note that the positive valence of joining guilds, accepting quest offers, and interacting with NPCs may inhibit the need for rejection. Murray [1938] also commented that rejection conflicts with some psychological needs such as affiliation, succorance, nurturance, and abasement.

Although it is possible for the protagonist of the *Witcher,* Geralt of Rivia, to form new relationships with people, he also encounters comrades (other witchers) who are close friends and lovers from his past. He is a professional monster-slayer, but several times he finds himself in situations that he cannot handle by himself, and has to surrender and/or seek aid from his comrades. At critical plot points, he has the option to choose sides, but he can also stay neutral and abandon or ignore people and conflicts. Even if he opts for neutrality, the story progresses and the reinforcers/punishers of his actions are adjusted accordingly. There are no guilds or henchmen in the game, but it should be noted that the protagonist of the *Witcher*, unlike many other RPGs, is not a nameless hero but a well-known character in the world. The sense of belonging to a game world that acknowledges the player's deeds gives a magical touch of believability to his or her relations, friendships, and associations. Since the game takes place in the post-war fantasy world called Temeria, there are many helpless people around the world who require protection, aid, and sympathy.

[19] Getting married and having a child is possible in *Fable II*.

[20] If players of *Elder Scrolls IV: Oblivion* kill an innocent citizen, they receive an invitation from the Dark Brotherhood which is an assassins' guild.

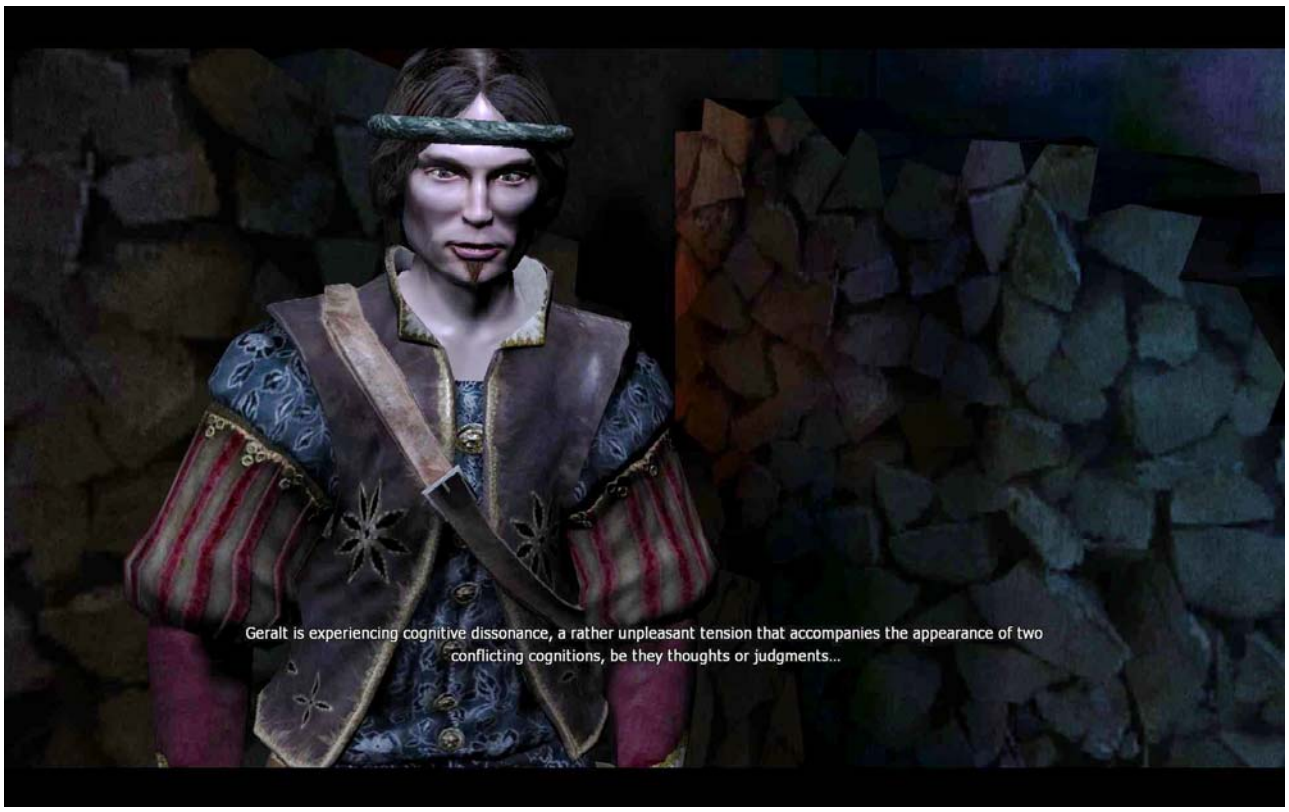

Fig. 5. Dandelion the poet and Zoltan Chivay try to comfort their friend Geralt who has doubts about marriage. (with permission of CD Projekt Red)

Subtitle: "Geralt is experiencing cognitive dissonance, a rather unpleasant tension that accompanies the appearance of two conflicting cognitions, be they thoughts or judgments..."

4.4 Gaming Situations: Achievement

The equivalent of the achievement motive in RPGs is progression, which is either governed by experience points (XPs) or skill usage.[21] Some RPGs assign XPs to the players at the end of each adventure or at the completion of each quest. Defeating monsters, learning a secret, convincing an NPC to help, casting spells, and solving puzzles may also count as experience points. If levelling is based on using skills, it does not matter how many quests a character has completed and how well he or she has role-played his character. If the character uses skills frequently, he or she will eventually increase in level and progress. As discussed in the previous section, the motivation for success is also closely related with the need to avoid failure. The chance of failure depends on the difficulty of the game, and there have been many attempts to adjust the difficulty automatically to match the skills and abilities of the player [Thue and Bulitko 2006; Andrade et al. 2005; Hunicke and Chapman 2004; Spronck et al. 2004]. We should not disregard the fact that as the subjective probability of success decreases, the incentive value of success increases [Atkinson 1957]. Thus,

[21] *Elder Scrolls IV: Oblivion* introduced a skill-based progression without using experience points.

game difficulty may be increased or decreased automatically, but the valence of incentives should also be increased or decreased accordingly to keep the achievement motive at higher levels.

Achievement in RPGs is possible through survival, which depends on how much the players avoid harm or death. With the help of potions, spells, equipment, and/or helper NPCs (healers, clerics, etc.), players try to minimize the physical damage they suffer and to survive the encounters. As the players progress and become more influential on the world, they strive for more independence in their actions and choices. This inclination is naturally reflected in the hierarchical structure of guilds, where high-ranking players are less dependent on others and have more freedom in their actions. With progression also comes the need for getting more attention, respect, praise, and commendation. Some RPGs use reputation/fame systems to satisfy the need for recognition; but it should not be forgotten that such systems are successful as long as they are reflected in social interactions. In example, although *Elder Scrolls III: Morrowind* keeps track of reputation points throughout the game, even high-level players get the same comment from the ordinators (city guards) they meet in the streets: “Move along, scum!”

Fig. 6. Princess Adda meets Geralt at a posh reception.
(with permission of CD Projekt Red)

Subtitle: “De Wett, I know who stands before me. We know each other, do we not, Witcher?”

In the *Witcher*, as the player advances (through accumulated experience points), he or she earns talents, which can be allocated to various attributes. The unique feature of the game is not the progression system itself, but it is the effects of progression on game animation. As the player progresses in the chosen styles, the acquisition of new attributes is reflected in both gameplay mechanics and visuals, such as how the player swings his sword, how he or she dodges attacks, how the swings and cuts affect monsters, and so on. The need to avoid harm or death is satisfied with a complex alchemy system that enables witchers to use plant extracts, monster extracts, and minerals to brew/prepare various elixirs, oils, and bombs. Since these potions are vital for survival, the player constantly gathers ingredients and learns new formulas. One of the most interesting aspects of the game is that, although some inhabitants of the world are skeptical of witchers, the protagonist attracts attention (positive or negative) wherever he goes, and the interest of female characters is notable. He may excite respect, praise, and commendation from NPCs, but this is also depends on the choices he makes in the game, and is also influenced by the personality traits, motivations, and emotions of the characters.

4.5 Gaming Situations: Information

Stories are the essence of RPGs, whether they are linear or nonlinear in structure. Stories consist of a main quest and optional side quests that may or may not be independent of the core plot. Players are constantly in need of information so as to understand what is going on in their environment. Relating facts, analyzing their experience, and defining relations help them to conceptualize the rules, culture, ethics, economy, and politics of the fantasy world. Gathering information is essential to understand who they are,[22] how they affect the world, and why they pursue quests. NPC-PC relationships require a constant exchange of information, explanation, and interpretation. It is also possible to gather information from books, scrolls, letters, journals, and inscriptions. For example, there are hundreds of books (biographies, short stories, books on history, politics, alchemy, etc.) scattered throughout the worlds of Vvardanfell and Tamriel,[23] and it is also possible for the players to learn skills by reading them.

The *Witcher* takes place in a mature world full of social issues, such as religious fanaticism, political intrigue, racism, and moral ambiguity, that need to be addressed and analyzed by the protagonist. At the beginning of the selected RPG, when the witchers find Geralt of Rivia, he is unconscious and suffering from amnesia. Throughout the game, it is the player's responsibility to

[22] Players of *Torment* are primarily concerned with finding the answer to a simple question: "Who am I?"

[23] *Elder Scrolls III: Morrowind* takes place in Vvardanfell and *Elder Scrolls IV: Oblivion* takes place in Tamriel.

develop his (Geralt's) sense of self-identity and recover his memory. Thus, the protagonist constantly gathers information that concerns both the environmental issues and himself. The player analyzes his experiences to develop a stable personality, and even assumes the role of a private detective to solve the mystery behind the secret organization he is pursuing. NPCs of the *Witcher* do not willingly exchange information; the players may need to gain their trust, and choices in the game also influence how much they learn.

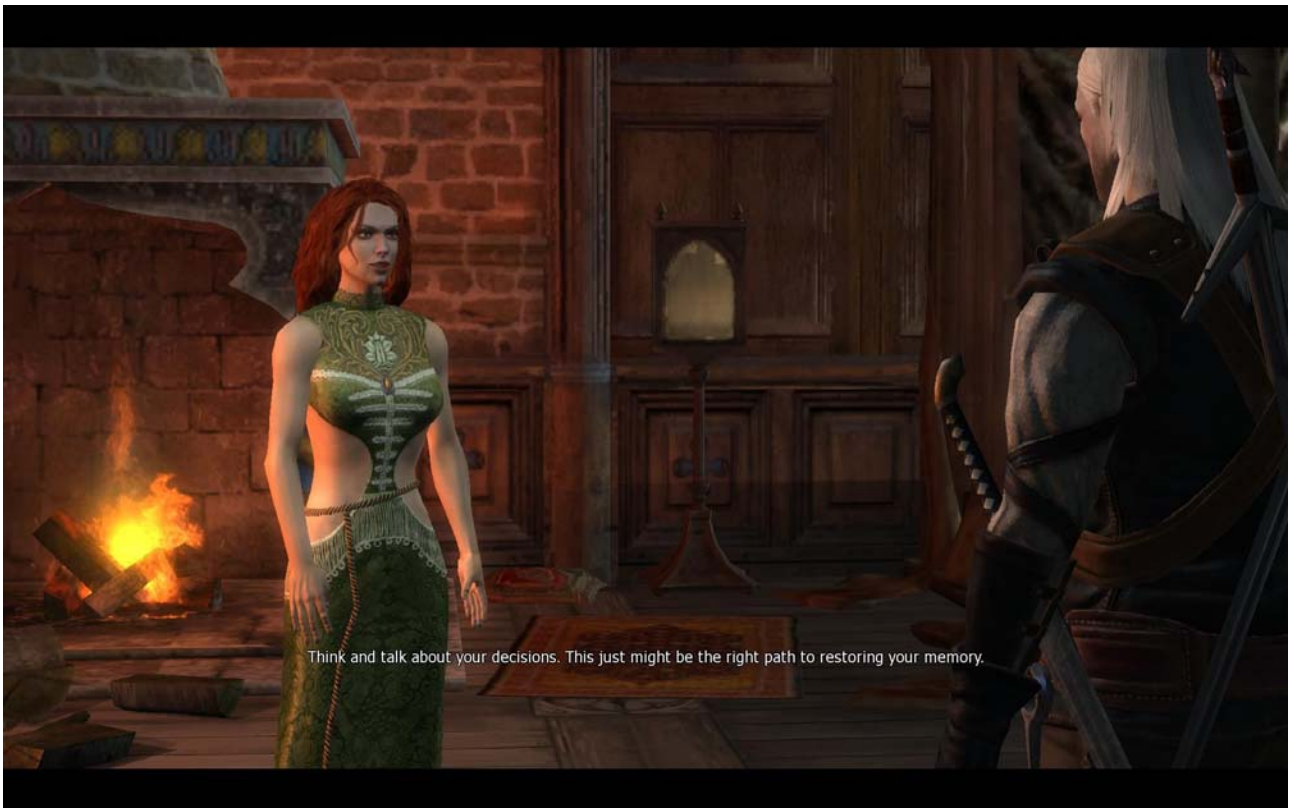

Fig.7. Triss the sorceress advises Geralt, who is in search of his identity.
(with permission of CD Projekt Red)

Subtitle: "Think and talk about your decisions. This just might be the rigt path to restoring your memory."

4.6 Gaming Situations: Sensual

Since designers usually ignore players' sensual needs, players have to drift from one quest to another in a continuous cycle of searching, finding, fetching, or killing. Even though there is much research on social synthetic characters, it should not be forgotten that players are also social characters who feel the need for relaxation and fun. Players also seek diversion and entertainment, enjoying sensuous impressions such as ballads by a local bard, the breathtaking view of a waterfall, or the sound of waves lapping gently on a sandy shore. The visual and auditory realism of the virtual world determines the degree of sensual satisfaction, but the needs for play and sex require

interactions with appropriate NPCs, such as an entertainer, a gambler, or a character of the opposite sex (as a potential love interest). The introduction of sex into a game directly affects its rating (by the Entertainment Software Rating Board [ESRB] in the United States or by the Pan European Game Information [PEGI] in Europe); this is a major concern for publishers that seek to appeal to a wide range of consumers.

The *Witcher* provides gambling, drinking, and fist-fighting opportunities for players who visit the local taverns. Players also earn money by defeating opponents in a dice game or a fist fight, and drinking is both a casual leisure activity and a necessity in some situations (such as making NPCs drunk so that they give up information). The effects of drinking are also reflected in the game mechanics and visuals: the scenes become blurry and Geralt begins to stagger. The player is invited to receptions and weddings, and even to attend a private party where the famous poet Dandelion sings a song for the guest the player chooses to invite. It is notable that the most overlooked sensual need, that for sex, is perfectly integrated into the fantasy world. The protagonist attracts the attention of several women in the game, but there are also courtesans and hookers in the streets, and the player has two major love interests that require him or her to make a choice. Some major characters trigger erotic cut scenes, but every character that the protagonist makes love to gives one of the infamous sex cards, which is one of the most controversial aspects of the *Witcher*.

Fig. 8. Sex card of Morenn the dryad.

(with permission of CD Projekt Red)

While discussing the sexual aspects of a computer game, it is also useful to take a look at the concept of *cyberaffairs*, which are romantic or sexual relationships via a digital communication medium. Most existing studies have primarily focused on cyberaffairs or cybersex as an addiction or compulsion, with special emphasis on the impact these virtual intimacies have on the family. Online experiences provide a convenient way to anonymously attain emotional or mental escape; Young [2001] defined three underlying motivations for cyberaffairs: anonymity, convenience, and escape. When experiencing a cyberaffair or cybersex, people describe feeling less lonely, feeling more self-esteem, and experiencing euphoria [Young 1997]. While it is important to make a distinction between real and virtual sex, it is also imperative to distinguish a virtual affair with a real person from an affair with a virtual character. In *The Witcher*, sexuality emerges between the player and the various nonplayer female characters in the virtual world. Although it hardly provides sexual fulfillment for the player, this form of intimacy may also lessen loneliness, improve self-esteem, and induce euphoria.

5. Conclusions

This study seeks to make the following contributions to motivational studies of computer game players: to analyze the basics of goal-directed behavior in computer games; to define the inter-relations between personal and environmental elements of gaming; to investigate the actions provoked by the interactions between psychological needs and game situations; and to construct an integrated framework of player motivations. Although there have been attempts to investigate the basics of designing a computer game that satisfies the motivations of players and maximizes their enjoyment, a proposed taxonomy of player motivations should ideally be capable of delineating any genre of game – independent of its complexity or content. Although the gaming situations in this study are chosen from a role-playing game (RPG), it is also possible to analyze fairly basic games using this motivation framework. For example, a *Pacman* game is primarily governed by the need to avoid harm (running away from ghosts); to achieve (getting to the next level and increasing the game score); and acquisition (of pills or other objects). It is obvious that the relative importance of the needs defined in this study may change from one game/genre to another, but this conceptual framework could facilitate understanding of motivation in computer games and act as a guideline to maximize user satisfaction.

The relationships between gaming situations and psychological needs derived from the selected

RPGs pose a number of critical issues that concern the satisfaction of player needs: (1) the degree of interactivity, which comes in the form of player-to-NPC and player-to-game interactions; (2) variety of choices, which represent the degree of user freedom; (3) the flexibility of the storyline or the degree of control over outcomes; (4) meaningful play, which is defined as the relationship between a player's actions and system outcomes [Salen and Zimmerman 2004[; (5) sociability, which consists of sociable nonplayer characters and social groups such as guilds; (6) behavioral realism of NPCs and the reactive nature of the environment; and (7) user influence on the structure and content of the virtual environment. The reassessment of intrinsic motivations [Malone and Lepper 1987]; player motivations in online games [Yee 2006]; and gameflow framework [Sweetser and Wyeth 2005] also validated that the psychogenic needs of Murray [1938] and components of goal-directed behavior quite match the previous studies, and are thus applicable to computer games.

Since researchers have difficulty in even defining the underlying components of the three basic motivators (affiliation, power, and achievement) and the relationships between them, we can conclude that it is questionable whether all the needs described in this study can be validated via empirical research. In fact, Murray [1938] focused on 20 needs in his research, and occasionally referred to but did not use 7 of them (nAcq, nBlam, nCog, nCons, nExp, nRec, and nRet) systematically in his study. It is also apparent that some psychological needs are more difficult to match with appropriate gaming situations, and require player-testing to evaluate. Although the psychological needs presented in this article are considered broadly applicable by providing a large number of variables for analyzing player behavior, future work is needed to apply this approach to different games and genres. In this regard, the applicability of the outcomes of Yee [2006] and Bartle [2004] to various genres is also questionable, since Yee conducted his study on MMORPGs and Bartle originally analyzed MUDs (multiuser dungeons).

It can also be argued that the psychological needs described in this study are applicable to any human activity, but it is important to note that Murray's psychogenic needs of are not static entities but the result of forces, both internal and external. Murray's external world is a dynamic structure, and needs are the outcome of continuous interactions between creatures and their environments. Thus, this framework is more suitable for analyzing the motivations of people in interactive experiences, where users are not passive entities but continuously participate in the action. In this regard, this taxonomy should aid researchers and game designers in describing and understanding the variety of player motivations, in identifying various user preferences and play styles, and providing a means to profile gamers, with the overall aim of maximizing player enjoyment in these immersive and participatory virtual environments. If independent player profiles can be defined by

future empirical studies, the framework defined in this study should facilitate in distinguishing a satisfying game design from an unsatisfying one.

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