

# EXPLORATIONS IN PLAYER MOTIVATIONS : GAME MODS

Barbaros Bostan  
National University of Singapore  
Games Lab, 21 Heng Mui Keng Terrace  
Singapore, 119613  
E-mail: idmbb@nus.edu.sg

Ugur Kaplancali  
Yeditepe University  
Kayisdagi Cad. 26 Agustos Yerlesimi  
Istanbul / Turkey, 34755  
E-mail: ugur.kaplancali@yeditepe.edu.tr

## INTRODUCTION

This article aims to analyze player motivations derived from the needs framework of Murray (1938) in relation to user modifications (mods) to an existing commercial computer game. Although the restrictions imposed by the game mechanics significantly reduce the number of player needs satisfied by a game and trap the player within the common motivational cycle of *Achievement*, *Aggression*, *Harmavoidance* and *Acquisition* (Bostan and Kaplancali, 2009), this study shows that the game mods created by users attempt to compensate for this by satisfying the needs of *Sentience*, *Exhibition*, *Recognition*, *Sex*, *Play* and *Affiliation*. While attempting to find the current trends in user created content for role-playing games (RPGs), this article also discusses the implications of game modding in identifying the missing features of an entertainment experience and of investigating the player motivations. This discussion is framed in terms of the user-environment relations of a recently released popular computer role-playing game (RPG).

**Keywords:** Player Motivations, Player Psychology, Human Factors, Gameplay Experience, Gaming Mods

## PSYCHOLOGICAL NEEDS OF GAME PLAYERS

Game playing is a goal-directed behavior where the needs, motives and goals of a player interact with the opportunities and incentives of the gaming environment and define the concept of “play”. Assuming that goal-directed behavior of players is triggered by the interaction between these personal and environmental factors, this article aims to analyze gaming motivations derived from the basic human needs. The psychological needs investigated in this study are based on the psychogenic needs defined by an extensive research of Murray (1938) and consist of six categories. Twenty seven needs of this framework have already been analyzed by Bostan (2009) in relation to the gaming situations of a RPG. In an attempt to take this study one step further and to identify the common interaction patterns between these individual needs, the same motivational framework was applied to another RPG and the individual needs were analyzed by defining the driving game mechanics behind them (Bostan and Kaplancali, 2009). And this study analyzes user-created content (mods) of a popular RPG within the same motivational framework in terms of the needs they satisfy. The RPG selected for this study is *Fallout 3* which was developed and released by Bethesda Softworks in October 2008.

Table 1: Psychogenic Needs of Murray (1938)

<p><b><u>Materialistic Needs</u></b>  <i>nAcq</i>: Acquisition  <i>nCons</i>: Construction  <i>nOrd</i>: Order  <i>nRet</i>: Retention</p>	<p><b><u>Power Needs</u></b>  <i>nAgg</i>: Aggression  <i>nBlam</i>: Blamavoidance  <i>nCnt</i>: Counteraction  <i>nDfd</i>: Defendance  <i>nDef</i>: Deference  <i>nDom</i>: Dominance</p>
<p><b><u>Affiliation Needs</u></b>  <i>nAba</i>: Abasement  <i>nAff</i>: Affiliation  <i>nNur</i>: Nurturance  <i>nRej</i>: Rejection  <i>nSuc</i>: Succorance</p>	<p><b><u>Achievement Needs</u></b>  <i>nAch</i>: Achievement  <i>nAuto</i>: Autonomy  <i>nHarm</i>: Harmavoidance  <i>nInf</i>: Infavoidance  <i>nRec</i>: Recognition  <i>nExh</i>: Exhibition</p>
<p><b><u>Information Needs</u></b>  <i>nCog</i>: Cognizance  <i>nExp</i>: Exposition  <i>nUnd</i>: Understanding</p>	<p><b><u>Sensual Needs</u></b>  <i>nPlay</i>: Play  <i>nSen</i>: Sentience  <i>nSex</i>: Sex</p>

## SATISFYING NEEDS THROUGH GAME MODDING

Game modding refers to the activity of making modifications to an existing commercial computer game’s aesthetics, experience and structure. This opportunity comes with computer games that are shipped with tools or scripting languages, which allow users to modify the existing virtual world or create new ones. These customized game experiences are usually shared on the Internet and discussed on game forums. Game modding acts as an important source of innovation in the digital games industry which is used as a recruiting pool; it also strengthens the brand name, adds to the shelf-life of the original product, increases customer loyalty and reduces game developers R&D efforts and marketing costs (Kücklich, 2005). From a new media perspective, modding is a perfect example of migration from participatory culture to participatory design (Sotamaa, 2003). These user-made modifications have recently attracted the attention of several researchers. For example El-Nasr and Smith (2006) discusses the use of game modding as a pedagogical activity; Fanning (2006) emphasizes the educational value of game mods; Nieborg (2005) analyzes the current trends in co-created content for First Person Shooter (FPS) games. Mods come in different sizes and complexities, but those that modify a broader range of game elements are named total conversions or overhauls.

From a motivational perspective, game modding is a convenient way of satisfying user needs that are not fulfilled by the game itself. If a human need is a condition marked by the lack of something, game mods are also marked by the lack of something or missing feature in a computer game.

The modifications in the game mechanics allow the user to break the constraints imposed by the game, thus providing an opportunity to satisfy his/her broader range of needs. This section will focus on game mods created for *Fallout 3* game. The website selected for the analysis is *Fallout 3 Nexus*<sup>1</sup>, which is one of the biggest modding communities for the game, hosting more than 7500 mods. Sixteen categories of mods are chosen from the website, because three categories (saved games/characters, official mods, videos and trailers) are not user-made modifications to the gaming environment.

Before analyzing the game mods of *Fallout 3* from a needs perspective, it is important to note that the unique nature of *Achievement* requires special attention. Since nAch is the dominant psychogenic need that fuses readily and naturally with every other need (Murray, 1938), it will not be specified in the mod-need relations unless it is the only dominant need. The analysis given below also introduces new variables, some of which are not in-game motivational variables. As the variables of the framework analyzed in this study are assumed to be the motivations of players inside the virtual world, the real world motivations of players are represented with the prefix 'r'. For example, an online RPG player's in-game motivation could be to achieve maximum levels in minimum time so that he/she can sell his/her character in auction websites on the Internet and acquire money. The player's in-game motivation is *Achievement*, represented by nAch; but, the player's motivation in the real world is *Acquisition*, which can be represented by rAcq. As the validity of this discrimination is open to question, this issue will be discussed further while dealing with the cases of rExh (the player's desire to attract the attention of people in the real world) and rRec (the player's desire to excite praise and commendation, and to seek distinction). For each category, the 10 most downloaded mods are tested and analyzed with respect to the needs it satisfies. Table 2 below shows 160 mods of 16 categories listed in descending order, considering the total number of downloads (See Appendix for details).

Table 2: Gaming mods and motivational relations

<b>Category: Animation</b>	
<b>ID</b>	<b>Needs Satisfied</b>
M1	nSen
M2	nSen, AND/OR rExh, rRec
M3	nSen, AND/OR rExh, rRec
M4	nSen, varies
M5	nSen, varies
M6	nSen, AND/OR rExh, rRec
M7	nSen, AND/OR rExh, rRec
M8	nSen
M9	nSen, AND/OR rExh, rRec
M10	nSen
<b>Category: Armors</b>	
<b>ID</b>	<b>Needs Satisfied</b>
M11	nSen, nSex, AND/OR rExh, rRec
M12	nSen, nAgg, nHarm, AND/OR rExh, rRec
M13	nSen, nHarm, AND/OR rExh, rRec
M14	nSen, nSex, AND/OR rExh, rRec
M15	Varies
M16	nSen, nSex, AND/OR rExh, rRec
M17	nSen, nSex, AND/OR rExh, rRec

M18	nSen, nSex, AND/OR rExh, rRec
M19	nHarm
M20	nSen, nAgg, nHarm, AND/OR rExh, rRec
<b>Category: Buildings</b>	
<b>ID</b>	<b>Needs Satisfied</b>
M21	nSen, nRet, nOrd, nAcq, nHarm, nCons
M22	nAcq, varies
M23	nSen, nRet, nOrd, nAcq, nHarm, nCons
M24	nSen, nRet, nOrd, nAcq, nHarm, nCons
M25	nSen, nRet, nOrd, nAcq, nHarm, nCons
M26	nSen, nRet, nOrd, nAcq, nHarm, nCons
M27	nSen, nRet, nOrd, nAcq, nHarm, nCons
M28	nSen, nRet, nOrd, nAcq, nHarm, nCons
M29	nSen, nRet, nOrd, nAcq, nHarm, nCons
M30	nSen, nRet, nOrd, nAcq, nHarm, nCons
<b>Category: Cheats and God Items</b>	
<b>ID</b>	<b>Needs Satisfied</b>
M31	nRet
M32	nAcq, nRet
M33	nAch, varies
M34	nAch, varies
M35	nAch, varies
M36	nAcq, nRet
M37	nAcq, nRet
M38	nAch, varies
M39	nAch, varies
M40	nAcq AND/OR nHarm
<b>Category: Clothing</b>	
<b>ID</b>	<b>Needs Satisfied</b>
M41	nSen, nSex, AND/OR rExh, rRec
M42	nSen, nSex, AND/OR rExh, rRec
M43	nSen, nAcq, nRet
M44	nSen, nSex, AND/OR rExh, rRec
M45	nSen, nSex, AND/OR rExh, rRec
M46	nSen, AND/OR rExh, rRec
M47	nSen, AND/OR rExh, rRec
M48	nSen, AND/OR rExh, rRec
M49	nSen, nSex, AND/OR rExh, rRec
M50	nSen, nSex, AND/OR rExh, rRec
<b>Category: Companions</b>	
<b>ID</b>	<b>Needs Satisfied</b>
M51	nAff, nAgg
M52	nAff, nSen
M53	nAff, nSen
M54	nAff, nAgg
M55	nAff, nSen, nSex, nAgg
M56	nAff
M57	nAff, nAgg
M58	nAff, nAgg
M59	nAff, nAgg
M60	nAff, nSen
<b>Category: Gameplay Effects and Changes</b>	
<b>ID</b>	<b>Needs Satisfied</b>
M61	nAch, varies
M62	nPlay
M63	nAgg, nHarm
M64	nAgg, nAcq, nSen
M65	varies
M66	nAgg, nHarm
M67	nAff, nAgg
M68	nSen
M69	nRet

M70	nAgg
<b>Category: Guilds / Factions</b>	
<b>ID</b>	<b>Needs Satisfied</b>
M71	nAcq
M72	nAgg, nAcq
M73	nAcq
M74	nPlay
M75	nAff, nAcq
M76	nAcq
M77	nHarm
M78	nAff, nAcq
M79	nSen, nRet, nOrd, nAcq, nHarm, nCons
M80	nPlay
<b>Category: Hair and Face Models</b>	
<b>ID</b>	<b>Needs Satisfied</b>
M81	nSen, AND/OR rExh, rRec
M82	nSen, AND/OR rExh, rRec
M83	nSen, AND/OR rExh, rRec
M84	nSen, AND/OR rExh, rRec
M85	nSen, AND/OR rExh, rRec OR nAgg
M86	nSen, AND/OR rExh, rRec
M87	nSen, AND/OR rExh, rRec
M88	nSen, AND/OR rExh, rRec
M89	nSen, AND/OR rExh, rRec
M90	nSen, AND/OR rExh, rRec
<b>Category: Miscallenous</b>	
<b>ID</b>	<b>Needs Satisfied</b>
M91	varies
M92	nAch, varies
M93	nAch, varies
M94	nAch, varies
M95	nPlay
M96	nAch, varies
M97	nAff
M98	nAch, varies
M99	nPlay
M100	varies
<b>Category: Models and Textures</b>	
<b>ID</b>	<b>Needs Satisfied</b>
M101	nSen, nSex, AND/OR rExh, rRec
M102	nSen, nSex, AND/OR rExh, rRec
M103	nSen
M104	nSen, AND/OR rExh, rRec
M105	nSen, nAcq
M106	nSen, AND/OR rExh, rRec
M107	nSen, nSex, AND/OR rExh, rRec
M108	nSen
M109	nSen, nSex, AND/OR rExh, rRec
M110	nSen
<b>Category: New Lands</b>	
<b>ID</b>	<b>Needs Satisfied</b>
M111	nSen, nAcq, varies
M112	nSen, nRet, nOrd, nAcq, nHarm, nCons
M113	nAgg, nAcq
M114	nAgg, nAcq
M115	nSen, nRet, nOrd, nAcq, nHarm, nAgg, nCons
M116	nSen, nAcq
M117	nSen, nRet, nOrd, nAcq, nHarm, nCons
M118	nSen
M119	nSen, nRet, nOrd, nAcq, nHarm, nCons
M120	nSen, nRet, nOrd, nAcq, nHarm, nCons
<b>Category: NPCs</b>	

<b>ID</b>	<b>Needs Satisfied</b>
M121	nAgg
M122	nAgg
M123	nSen, nAff
M124	nSen
M125	nAch, varies
M126	nAgg
M127	nAgg, nAcq
M128	nSen
M129	nSen, nAff
M130	nAff
<b>Category: Quests and Adventures</b>	
<b>ID</b>	<b>Needs Satisfied</b>
M131	nDom, nSex, nAcq
M132	nSex
M133	nDom, nNur OR nSex,
M134	nAgg, nAcq
M135	nAcq, nAff, nSen
M136	nSex
M137	nAcq
M138	nAcq, nDom
M139	nAcq
M140	nAgg, nAcq
<b>Category: Sounds and Music</b>	
<b>ID</b>	<b>Needs Satisfied</b>
M141	nSen
M142	nSen
M143	nSen
M144	nSen
M145	nSen
M146	nSen
M147	nSen
M148	nSen
M149	nSen
M150	nSen
<b>Category: Weapons</b>	
<b>ID</b>	<b>Needs Satisfied</b>
M151	nAgg, nSen
M152	nAgg, nSen
M153	nRet
M154	nAgg, nSen
M155	nAgg, nSen
M156	nAgg, nSen
M157	nAgg, nSen
M158	nAgg, nSen
M159	nAgg, nSen
M160	nAgg, nSen

Most of the mods under the category of “animation” are related to character poses (M1, M2, M3, M6, M7, M8, M9). As physical appearance of the player does not impact on the NPCs (non-player characters) and the gaming environment is not a multi-player one, the motivation behind giving fancy or attractive poses is not to excite, stir, shock or thrill virtual characters. People may use these poses (as well as some of the mods related to “clothing”, “armor”, “hair and face models”, and “models and textures”) to enhance their attractiveness and customize their physical appearance. Later, they may take screenshots from the game and share the pictures of their characters on the Internet to attract the attention of others (rExh), and to seek distinction and elicit praise (rRec). There are even clothing contests on gaming websites where players post the screenshots of their

characters for recognition and exhibition. It should be noted that if NPCs are responsive to the physical appearance or the attractiveness of the player, these mods should also have some in-game motivation behind them (nRec, nExh). Players are also attracted by pleasurable sights (color, light, form, pose, movement, a beautiful face, clothes, etc.) and they seek variety in these sensuous impressions (nSen). To delight in the beauty of one's own body and to enjoy sensuous imagery is a special form of sentience called *intraSentience* (Murray, 1938, p. 169). The rExh-rRec-nSen pattern<sup>ii</sup> can also be seen in “armors”, “clothing” and “models & textures”. Two mods of this category (M4, M5) modify the mechanics behind the exploration of the virtual environment.



Figure 1: Player character posing in front of the statue of Lincoln at Lincoln Memorial<sup>iii</sup>.

Armors (M12, M20) can boost combat skills (nAgg) and increase damage resistance (nHarm). They can help the player avoid harm by disguise or stealth (M13, M19), but half of the mods under this category (M11, M14, M16, M17, M18) introduce nSex into the motivational analysis. What is experienced is the common fusion of eroticism with exhibition, called exhibitionism (Murray, 1938, p.168). These sensuous (nSen) and sexually revealing armors are usually used with body textures that permit replacement of female models in default underwear with nude ones. These modifications are in-line with the way female characters are commonly portrayed in computer games. Researchers analyzing gender stereotyping in video game characters observe that female characters are usually hypersexualized, depicted as sex objects, dressed in sexually revealing clothing, featured in unrealistic, curvaceous or voluptuous body shapes with special emphasis on their breasts and displayed in camera angles that reveal their clothing or shapely bodies (Provenzo, 1991; Gailey, 1993; Dietz, 1998; Inness, 1999; Children Now, 2001; Thompson, 2002; Brand, Knight & Majewski, 2003; Downs & Smith, 2005; Jansz & Martis, 2007). The same trend<sup>iv</sup> (nSen, nSex) is also evident in the mods of “clothing” and “models and textures”.



Figure 2: Player character with Army Dress in front of the Capitol Building<sup>v</sup>.

Nine mods, under the category of “buildings”, add new structures to the gaming world that are designed to accommodate the player. These buildings are decorated with storage containers (nRet), items such as weapons, ammunition, etc. (nAcq), workbenches for making items (nCons), jukeboxes and radios for listening to music and radio stations (nSen), laboratories for brewing drugs and clearing addictions (nHarm), infirmaries for resting and reducing radiation levels (nHarm), and robot butlers for changing player’s hair style or appearance (nSen). Although the game provides six different themes (Love Machine, Science, Vault Raider, Wasteland Explorer, and Pre-War) for the house owned by the player<sup>vi</sup>, the visual appearance of the buildings is usually customized by each modder. These visual customizations and the addition of more containers for hoarding items are two dominant features. The remaining mod (M22) under this category is a shop that sells armor to the player. Most of the mods, under the category of “cheats and god items”, include lists of cheats available in *Fallout 3*. The cheats can be used to add items, skill points, perks or experience points to the player, which satisfy the player’s needs of achievement and acquisition. Some of them are used for preserving items (nRet), and one for even eliminating the need for item repairs (M31). The motivational aspects (rExh, rRec, nSen, nSex) of the mods, under the category of “clothing”, are similar to the mods of “poses” and “armors”. The only exception (M43) is the one that allows the player to carry more items and hoard them.

Companions in *Fallout 3* are followers or joinable NPCs that come with their own weapons and armor. Their primary purpose is to aid the player in combat and they are hostile towards all enemies. It is questionable whether they satisfy the need for affiliation, but they definitely satisfy the need for aggression, because they are so programmed<sup>vii</sup>. It is intriguing to see three mods (M52, M53, M60) that are dedicated to a single NPC. This female character, called Bittercup, is a citizen of Big Town with a “goth” or “punk” teenage personality wearing dark clothes. A little distinction in style and attitude of a character has drawn the attention of modders who try to customize this NPC’s physical appearance (nSen). Mods under the category of “gameplay effects and changes” serve different purposes. Two of them are overhauls (M61, M65), and the others add more features (auto-fire mechanism, extended magazines/clips, etc.) to

weapons (M63), modify the spawn frequency of creatures and provide diversity in creature types (M64, M70), add more critical affects to the game (M66), add robot companions (M67), change the visual effects of weather (M68), and modify item degradation (M69). In *Fallout 3*, when the final quest is finished, the players cannot continue playing the game. Therefore, one mod (M62) is specially designed to allow players to continue their adventures (nPlay) in the post-apocalyptic world of *Fallout*.



Figure 3: Bittercup NPC companion of “Better Bittercup Restyled” mod<sup>viii</sup>.

Guilds and factions are important parts of the social system of RPGs. They form a group of NPCs that share their resources and help each other. Player may also be given quests for advancement in guild ranks. Mods, under the category of “guilds and factions”, add variety to NPC’s equipment (nAcq) which can be looted by the player (M71, M76), add more rewards for capturing/killing NPCs (M72, M73), and add new factions to the game world (M75, M78). One mod (M77) enhances disguise (actually a “gameplay effect and change”) and another (M79) adds a new home for the player (actually a “building”). Two mods create an alternative gameplaying experience (M74, M80), allowing the player to play a paladin or a ghoul (nPlay). “Hair and face models” provide new faces or hair styles to the players, enabling them to customize and enhance their appearance and attractiveness. “Miscellaneous” mods serve different needs. The most downloaded one (M91) is the flash map showing all the locations of the game, which can be used for various purposes. Besides cheat codes, patches and fixes (M95, M96, M99, M100), four of them (M92, M93, M94, M98) remove the level cap (level or skill limit set by designers) and allow the player to progress further in the game (nAch). One interesting mod (M97) allows the players to listen to Galaxy News Radio Station even after 20<sup>th</sup> level. Run by the DJ, named Three Dog, possibly referring to the 1960's radio personality “Wolfman Jack”<sup>ix</sup>, the radio station not only plays music but also reports on the player exploits, thus creating a strong social bond with the player.

“Models and textures” change the appearance of the terrains (M103, M108), weapons (M110), and the face of the player character (M106). One mod (M104) enhances female character's attractiveness by makeup effects and one (M105) - actually an item overhaul - adds new items with new textures. And, four of them (M101, M102, M107, M109) are replacements for nude textures and enhancements in

female bodies, such as voluptuous breasts, etc. “New Lands” add new places such as an island (M111), a canyon (M113), a single building (M112, M114, M115, M117, M119) or a cavern (M120). Two of them (M116, M118) are modifications of existing towns. The visual appearance of these towns is customized by modders, with additions of items to loot (nAcq), containers to use (nRet) or creatures to kill (nAgg). Mods, under the category of NPCs, add new enemies to kill (M121, M122, M126, M127), characters/monsters with visual enhancements (M123, M124, M128) one of which is also a companion (M129), a trainer to help the player to level up (M125) and two butler robots for the player's house (M130). Children in *Fallout 3* can not be killed. Whether “Killable Children” mod is designed for the sadistic purpose of killing children or simply for lifting another restriction of the game is not clear. And, a better Bittercup is again introduced in this category of mods. “Quests and adventures” introduce new enemies to eliminate (M134, M140) or new items to acquire (M135, M137, M138, M139). Four mods of this category are related to the need for sex, allowing the player to seduce men or women (M132, M136), to persuade female NPCs into becoming prostitutes to reap the benefits of sexual favors or weekly payments (M131), or to blackmail or save a prostitute of the world (M133). Mods of “sounds and music” add new sound effects to the game world or new songs for the Galaxy News Radio, which are sensual (auditory) enhancements to the gaming experience. And mods of “weapons” category add new weapons with new textures that can inflict more damage to enemies. The only exception is the one (M153) that changes the basic principle of item repairs.

## CONCLUSION

Although the high degree of technical competence demanded places modding practices out of reach of many gamers, game modding creates wider cultures, communities and rich contexts for criticism, review, and play, and modders are positively encouraged with tools, support and means of distribution by official game developers (Newman, 2008). Needless to say, the sole purpose of creating game mods is not to merely satisfy some user needs. Game mods can also be designed to meet certain virtual environment design requirements, such as interactivity, sociability, veridicality, responsiveness, autonomy, etc., which potentially increase the sense of presence and quality of immersion. And it is also obvious that the relative importance of the needs may change from one game/genre to another, but the variables of this taxonomy could assist the analysis of gaming experiences within a motivational framework. Given below is the pie chart showing the needs satisfied by the gaming mods analyzed in this study.

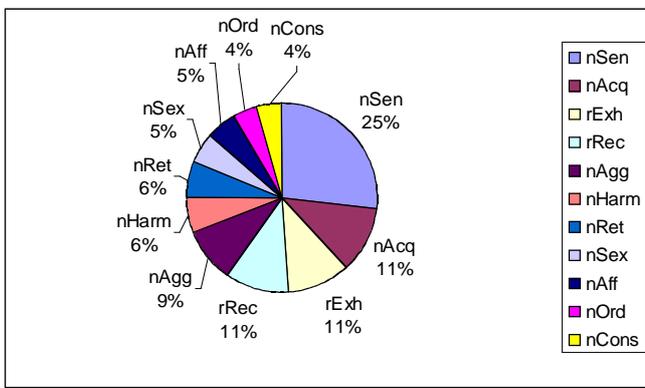


Figure 4: Percentage of needs satisfied by the 160 mods.

The psychological impact of game mods is not limited to the satisfaction of some user needs. These user made modifications to the virtual environment also have an effect on certain components of goal-directed behavior or flow experiences, such as increasing the valence of the incentives, changing the difficulty and specificity of goals, and increasing user commitment and concentration. As game modding requires basic understanding of 3D objects and scripting techniques, it still remains the privilege of an elite group of players. It is not possible to expect these mods to satisfy all user needs or to cover all the flaws of a game perfectly, but when analyzed from a player perspective, they might give some idea about player's choices or preferences in a virtual world. Even if the modders have other goals in mind when designing the mods, it is still possible to investigate what user needs they can satisfy. Given below is the top 10 mods analyzed in this study.

Table 3: Top 10 mods of *Fallout 3*.

TOP 10 MODS		
ID	Downloads	Needs Satisfied
M101	128634	+nSen, +nSex, AND/OR +rExh, +rRec
M61	83552	+nAch, varies
M141	82897	+nSen
M81	81393	+nSen, AND/OR +rExh, +rRec
M131	75797	+nDom, +nSex, +nAcq
M91	62723	varies
M62	59197	+nPlay
M92	54029	+nAch
M102	48636	+nSen, +nSex, AND/OR +rExh, +rRec
M103	47908	+nSen

To test the hypothesized associations between gaming mods and user needs, undergraduate students from a major private university in Turkey who had prior gaming experience in *Fallout 3* and its gaming mods were called to participate in a case study. Seven students with the desired gaming background responded to the call. A 10 minute presentation was given to the students to describe the needs framework of Murray. Then, each student was given a score sheet to evaluate the relationship between 27 psychogenic needs and ten randomly selected mods. Each mod was portrayed with a short description and a screenshot. The scoring is between 0 and 10, where a 0 means that the mod does not satisfy the need in question and a 10 means that the mod perfectly

satisfies it. The seven students spent 1325 points to describe the mod-need relationships. 909 of these fall in the hypothesized need relationships of this study which represents a 68.6% recognition rate. If the hypothesized need-mod relationships can be validated by a larger scale empirical study, the framework defined in this study should facilitate the discrimination of a satisfying gaming experience from an unsatisfying one.

## REFERENCES

- Brand, J.E.; Knight, S.J.; and Majewski, J. 2003. The diverse worlds of computer games: a content analysis of spaces populations, styles and narratives. In *Digital Games Research Conference 2003*, University of Utrecht, The Netherlands.
- Bostan, B. 2009. "Player Motivations: A Psychological Perspective." *ACM Computers in Entertainment*, 7, No.2 (June).
- Bostan, B. and Kaplancali, U. 2009. "Explorations in Player Motivations: Game Mechanics". In *Proceedings of GAMEON 2009, Duesseldorf, Germany*.
- Children Now. 2001. "Fair play? Violence, gender and race in video games". Available on-line at <http://publications.childrennow.org>(accessed 19 January 2009).
- Dietz, T.L. 1998. "An examination of violence and gender role portrayals in video games: Implications for gender socialization and aggressive behavior". *Sex Roles*, 38, 425-442.
- Downs, E. and Smith, S. 2005. Keeping abreast of hypersexuality: A video game character content analysis. Paper presented at the *55th International Communication Association*, New York.
- El-Nasr, M.S. and Smith, B. 2006. "Learning Through Game Modding". *Computers in Entertainment (CIE)*, 4(1), Article 3B.
- Fanning, E. 2006. "Game Mods: Customizable Learning in a K16 Setting". *International Journal of Information and Communications Technology Education (IJICTE)*, 2 (4).
- Gailey, B. 1993. "Mediated messages: Gender, class, and cosmos in home video games". *Journal of Popular Culture*, 27, 81-97.
- Inness, S.A. 1999. *Tough Girls: Women Warriors and Wonder Women in Popular Culture*. University of Pennsylvania Press, Philadelphia, PA.
- Jansz, J. and Martis, R.G. 2007. The Lara phenomenon: Powerful female characters in video games. *Sex Roles*, 56, p. 141-148.
- Kücklich, J. 2005. "Precarious Playbour: Modders and the Digital Games Industry". *Fibreculture Journal*, 5. <http://www.journal.fibreculture.org/issue5/kucklich.html> (accessed January 23, 2009).
- Murray, H.A. 1938. *Explorations in personality*. New York: Oxford University Press.
- Newman, J. 2008. *Playing with Videogames*. London: Routledge.
- Nieborg, D.B. 2005. "Am I Mod or Not? - an Analysis of First Person Shooter Modification Culture". *Paper presented at Creative Gamers Seminar - Exploring Participatory Culture in Gaming*. Hypermedia Laboratory, University of Tampere.
- Provenzo, E.F. 1991. *Video Kids: Making sense of Nintendo*. Cambridge, MA: Harvard.
- Sotamaa, O. 2003. "Computer game modding, intermediality, and participatory culture". Presented at *New Media? New Theories? New Methods? Innovating Media and Communication Research*. [http://old.imv.au.dk/eng/academic/pdf\\_files/Sotamaa.pdf](http://old.imv.au.dk/eng/academic/pdf_files/Sotamaa.pdf) (accessed December 16, 2008).
- Thompson, C. 2002. Violence and the political life of video games. In *Game on: The history and culture of videogames*, 2002, L. King (Ed.). London, UK: Barbican.22-32.

## APPENDIX

Category: Animation

Mod Name	ID	Download
Trynfkwtmes Exotic Dancers	M1	17586
Umpa Animation	M2	15935
Some Poses	M3	9896
Jump	M4	6099
Drivable Motorcycle	M5	4482
PC Idles	M6	4204
The Groovatron	M7	3728
Alternative Weapon Attack Anim.	M8	2849
Custom Reload Animations	M9	1196
Creature Poses	M10	776
<b>Category: Armors</b>		
Mod Name	ID	Download
Trynfkwtmes Nude Armors	M11	32527
Better Power Armor	M12	13994
Coyote Reflex Power Armor	M13	13337
Malos Nude Fixes	M14	10987
Missing Unique Armor and Clothing	M15	9994
Real Latex	M16	9497
Naouak Armors and Clothes	M17	9230
Malos Armors and Dresses	M18	8713
Armor Disguises	M19	6944
Crusaders Armor - Power Armor	M20	6231
<b>Category: Buildings</b>		
Mod Name	ID	Download
Megaton House Overhaul	M21	14366
Trynfkwtmes Armor Shop	M22	8813
RR Companions Vault	M23	8326
Vault 89_player home_V1-26	M24	5691
A Follower Friendly Personal Vault	M25	5017
Dtoms Rivet City Apartment	M26	4909
KORs Vault	M27	4504
My Megaton Basement	M28	4116
My Megaton Basement	M29	3429
Fort Freeway	M30	3346
<b>Category: Cheats and God Items</b>		
Mod Name	ID	Download
No Repair Needed	M31	15052
Mega Weight	M32	13822
Fallout 3 Cheat Guide	M33	10505
Levelers Truck Trailer	M34	6062
Ultimate Code Guide	M35	5798
Add All Uniques	M36	5588
Choose what you need	M37	4963
Bobblehead Delivery	M38	4722
Cheat List Sorted	M39	3488
Lockpick cheat	M40	3323
<b>Category: Clothing</b>		
Mod Name	ID	Download
Female Nude Painspike Armor	M41	18054
Just Undies by Azar	M42	12321
Wearable Blackwolf Backpack	M43	12308
Gypsy Outfits by Azar	M44	11744
PMAY Sexy Sleepwear	M45	8376
WW2 Uniforms	M46	7509
Merc Duster	M47	5949
Zumbs Dark Sunglasses	M48	4939
Nippy Clothing	M49	4813
Black Outfit Beta	M50	4811
<b>Category: Companions</b>		
Mod Name	ID	Download
Enclave Commander	M51	35740

Bittercup companion	M52	23703
Bittercup companion restyled	M53	19879
Oh Followers Hire	M54	17696
Jessi Companion	M55	14674
Sharing and Caring Companions	M56	13701
Buildable Bots	M57	13359
CRI Squad	M58	11503
Essential Followers and Caravans	M59	10167
Bittercup Companion Restyled	M60	9434
<b>Category: Gameplay Effects and Changes</b>		
Mod Name	ID	Download
Ultimate Perk Pack	M61	83552
Free Play after MQ	M62	59197
Weapon Mod Kits	M63	46485
Marts Mutant Mod	M64	35326
Fallout 3 Balance Overhaul	M65	31852
Amplified Crippled Effects	M66	27258
RobCo Certified	M67	24707
Fallout 3 Weather Overhaul	M68	23471
Slower Item Degradation	M69	21381
MMMF3 Increased Spawns	M70	19859
<b>Category: Guilds / Factions</b>		
Mod Name	ID	Download
Raiders Regulators Talon Expanded	M71	4217
Lawbringer Bounties	M72	1831
More Outcast Rewards	M73	1824
Alternative Beginning - Paladin	M74	1344
US Army	M75	1280
Talon Company Standard Issue	M76	849
Disguiser	M77	741
Regulators Ride Again	M78	619
Naval Command Bunker	M79	534
Goul Playable	M80	434
<b>Category: Hair and Face Models</b>		
Mod Name	ID	Download
Hair Pack	M81	81393
Josef Greys Kozaburo Hair Style	M82	31483
Spartan VIs Pretty Girls	M83	14241
Dimonized presets for Vanilla races	M84	6834
Enhanced Children Project	M85	6381
Enable All Hairs	M86	5244
Any Hair You Want	M87	5226
Faces of the Law	M88	3411
Frederyck New Female Face	M89	2910
Choose a Character	M90	2659
<b>Category: Miscallenous</b>		
Mod Name	ID	Download
Fallout 3 Flash Map	M91	62723
Level Cap Increaser	M92	54029
Level Cap Increaser Skill Workaro.	M93	26948
Level 100 Cap	M94	15789
Unofficial Fallout 3 Patch	M95	13796
Console Codes	M96	9667
GNR fix	M97	7040
Level-Up No Lock	M98	6958
Fallout 3 Tweak Guide	M99	6818
Russian 1C Localizations	M100	6038
<b>Category: Models and Textures</b>		
Mod Name	ID	Download
Brurpo Alluring Body Enhancement	M101	128634
Malos Nude Body Replacer	M102	48636
Terrain pack	M103	47908

Josef Greys Makeup Face Retexture	M104	44219
FOOK - FallOut 3 Overhaul	M105	40723
Female Texture Mod	M106	32465
Naouak Female Body Replacer	M107	30320
Mimezu texture project	M108	27603
Dimonized female races and textures	M109	27222
Hi-Res Weapons	M110	26825

Frederyck Tactical Weapons	M155	15147
Pimp my gun Desert Eagle Clean	M156	14713
Better Arsenal FN FAL V5	M157	14655
M1911 UV added	M158	13612
M88 Gauss Rifle	M159	10989
Lightsaber 0_9	M160	10866

### Category: New Lands

Mod Name	ID	Download
JaySuS Commonwealth Of Modders	M111	16380
Megaton House Expansion Mod	M112	8304
Death Canyon	M113	7056
Free Building	M114	6319
Ghoul Mansion	M115	6239
Big Town Upgraded	M116	6118
New Home Outdoor Bus	M117	3730
Arefu Expanded	M118	3580
Two new wastelandish homes	M119	3019
Megaton caverns	M120	1977

### Category: NPCs

Mod Name	ID	Download
Killable Children	M121	25804
Boss Monster Addon	M122	5577
Tchos Better Bittercup	M123	3228
Lil Critters	M124	3019
Perk Trainer	M125	2583
Eagle Strikes the Nest	M126	2452
Raiders Redone	M127	2376
NPC Height Randomizer	M128	2353
Maria-A latina sniper	M129	2138
Wadsworth and Godfrey	M130	1801

### Category: Quests and Adventures

Mod Name	ID	Download
Wasteland Player	M131	75797
Seducing Women	M132	10904
Saving Nova	M133	7362
D6 Wasteland Boss Pack	M134	6525
WReality Haven	M135	6051
Wasteland Gigolo	M136	5274
Quest incl G36 MSG90	M137	4979
101 The Collector	M138	4800
Megaton Contracts	M139	4216
Darkness	M140	3454

### Category: Sounds and Music

Mod Name	ID	Download
GNR More Where That Came From	M141	82897
Realistic Gunshot Sounds	M142	29987
20 more aged songs	M143	7922
GNR Radio Fixed Extended	M144	7911
Custom Galaxy Radio	M145	7690
IPip Player	M146	7682
Talk Thing with Cruk - Mutant Radio	M147	7519
Improved Sound FX	M148	6405
GNR Extended	M149	5174
Radio Station Fix	M150	4197

### Category: Weapons

Mod Name	ID	Download
Better Arsenal Desert Eagles V5	M151	33689
Classic Fallout Weapons	M152	20613
Cross-Repair Weapons	M153	20567
Beretta M9 -Release-	M154	16142

<sup>i</sup> URL: (<http://www.fallout3nexus.com>), downloads as of March 14, 2009.

<sup>ii</sup> To display beauty is a fusion of nExh and nSen (Murray, 1938, p. 171)

<sup>iii</sup> Special thanks to Yoshikinakota (creator of “Hair Pack” mod) for the hair model, Backsteppo (creator of “Some Poses” mod) for the pose.

<sup>iv</sup> The sensations to excite an erotic feeling create a fusion of nSen with nSex (Murray, 1938, p. 169).

<sup>v</sup> Special thanks to Yoshikinakota (creator of “Hair Pack” mod) for the hair model, JosefGrey (creator of “Josef Greys Makeup Face Retexture” mod) for makeup effects, Kalten1979 (creator of “Malos Armors and Dresses” mod) for the Army Dress, Backsteppo (creator of “Some Poses” mod) for the pose.

<sup>vi</sup> The player is awarded a Megaton House or a Tenpenny Tower Suite at the end of “The Power of Atom” quest.

<sup>vii</sup> To fight together against a common enemy is a fusion of nAgg and nAff (Murray, 1938, p. 175).

<sup>viii</sup> Special thanks to Vaughn (creator of “Bittercup Companion Restyled” mod) for the restyled Bittercup.

<sup>ix</sup> URL: [http://en.wikipedia.org/wiki/Wolfman\\_Jack](http://en.wikipedia.org/wiki/Wolfman_Jack)

<sup>x</sup> Downloads as of March 14, 2009.