

# Personalizing the Player Experience in MMORPGs

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**Abstract.** Personalizing the playing experience is a key factor in making players of computer games feel involved in the virtual world; however, current Massively Multiplayer Online Role Playing Games only to a limited degree allocate development or running resources towards facilitating a personalized experience. In Pen and Paper Role Playing Games, the player-controlled characters form a key component in facilitating the formation of a personalized experience. In these games, characters are often more than the association of stats and skills popular in online games, and several approaches towards utilizing the character-based information directly to personalize the game playing have been developed, e.g. personality systems. Some of these systems can be integrated into online games, providing a realistic and financially feasible method for improving the ability of these games to personalize the experience to the individual players.

**Keywords:** MMORPG, personalization, role playing game, character, personality.

## 1 Introduction

Personalized storytelling in Massively Multiplayer Online Role Playing Games (MMORPGs) is a much debated subject [1],[2],[3],[5],[7]. While storytelling exists in MMORPGs, it is generally tied up in quest systems [16], and player-player interactions. The virtual worlds are bound by technical, resource, format, media-related and not the least player-related limitations, which makes it inherently difficult to provide the kind of engaging, personal and emotionally meaningful storytelling, which could aid the game form in opening up to a broader audience [7].

In addressing the issue of personalizing the MMORPG experience, it is of relevance to investigate related game forms for experiences or techniques. One such game form is Pen and Paper Role Playing Games (PnP RPGs) [4],[8],[17],[18], which share a substantial number of features with MMORPGs, such as the underlying rules systems and themes. Secondly, in game forms like PnP RPGs it is possible to generate exactly the kind of personal experience that is challenging to create in the electronic

persistent-world equivalents<sup>1</sup>. This is done by combining collaborative storytelling and imagining with rules in a manner that theoretically offers complete player freedom, in-game consequence of player actions, free manipulation of time, while at the same time generating personalized stories directly tied to the motivations of the game players and their characters.

In the below, it is explored how PnP RPGs utilize PC generation to facilitate personalization, and how these techniques can be integrated into the framework of online games using the technologies currently implemented in MMORPGs. It is important to realize that the purpose of this analysis is not to advocate for the inclusion of more advanced AIs, character emotions, believable agent systems or advanced interactive storytelling systems. These approaches form highly innovate, alternative pathways that hold significant potential to improve the storytelling and immersive qualities of computer games [2],[5],[9],[11],[13],[16], however, the goal here is vastly more modest: By personalizing the gaming experience via the establishing of a series of parameters linked to the PCs and their generation at the hands of the players, which allow objects and NPCs (i.e. game agents) of MMORPG engines to recognize the characters (and possibly the players themselves) in new ways and react correspondingly; as well as allowing the players to create unique characters, jointly facilitating a more personal gaming experience than currently the norm in MMORPGs such as *World of Warcraft*, *Star Wars Galaxies*, and *Everquest*. In essence, the method allows for the integration of a designed narrative potential in MMORPGs [5], via the use of the narrative potential of PCs, and the utilization of this via expressive agents (mainly NPCs but also other PCs). The approach suggested here operates at a simpler and more direct level than systems utilizing e.g. advanced intelligent agents and interactive storytelling systems [e.g. 13], and the impact of implementing the PC models suggested here is also of a much smaller magnitude. The strength of the approach is that it is aimed at implementation in the technical and financial framework of existing MMORPGs.

The basic models for the character constructs presented here are drawn from pen and paper RPGs, however, it is not the direct purpose to promote PnP RPG style play in MMORPGs; nor to prevent players from creating their own vision of their PCs and role playing them (with or without the support of the game system). Rather, it is the purpose to make the game world more reactive to the specific player character. This does not implicate role playing on behalf of the player, although it certainly facilitates role playing. The core premise of this analysis is based on the hypothesis that a personalized gaming experience is better than an impersonal one - that moving around in a virtual game world that responds to your PC is more satisfactory than getting no reaction from the environment directly related to your character. This even if the responses does not provide actual ability to change the environment. This hypothesis is debateable, and it might be asked if players of MMORPGs are even interested in this kind of responsiveness to their characters, or if they would prefer "blank slates" which they can fill out to the degree they feel like it, and which the game world does

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<sup>1</sup> One of the most important reasons for this being that PnPs RPGs are controlled by a human GM that adapts the story to the players in such an effective way that current artificial intelligence or interactive storytelling systems are challenged in emulating it [2].

not provide any special recognition of. However [19] noted that some of the main motivations for MMORPG players include: Creating background histories for, customising and role playing their PCs. Integration of their PCs into the on-going storyline of the world also features as a motivation. Furthermore, players enjoy socialising and forming relationships via their characters. These are all motivations that indicate an interest among the player base for more advanced character creation opportunities, as well as exposure to game content that allows them to take advantage of their characters. The popularity of single-player CRPGs, where the game world often reacts to the player directly (e.g. *Knights of the Old Republic*), also seems to indicate that there is an interest in MMORPGs that respond to player characters. It would seem that there is an interest among at least certain segments of the player base in more character-responsive environments. A core challenge of creating PC generation systems for use in MMORPGs that accommodate these players is to avoid alienating players who are only marginally or not at all interested in taking advantage of such a feature. Finally, if experiences from PnP RPGs are any indication of player experiences in online RPGs, a heightened degree of agency will provide better integration in the fictional universe. Additionally, while most current MMORPGs do not cater to players interested in role playing their characters, it is possible that role playing interested players would be more attracted to MMORPGs where more personalized experiences are possible [7], thus expanding the core market.

## 2 PnP RPGs vs. MMORPGs

In a typical PnP RPG, the player or players control one, possibly several, characters and their actions. The Game Master (GM), a specialized participant with often substantial control of the game, informs the player/s about what other characters do and how the fictional game world responds to the actions of the characters.

A core characteristic of PnP RPGs is the magnitude of the relative freedom of the players to decide on the actions and attitudes of their characters [8], within the rules of the game and the constraints of the fictional world – in other words they have real agency (in the sense of [11]) in the fictional world, and the actions of the player characters (PCs) have direct consequences. Furthermore, the GM and the players create a shared history that constantly is developed in collaboration between the participants.

In a current MMORPG, such as *Everquest* or *World of Warcraft*, because of technical and resource limitations, as well as the basic nature of persistent, massively multiplayer games, bringing the story of the individual player to the personalized level of PnP RPGs is not currently feasible. Players of MMORPGs can thus walk into inns repeatedly, and the Non-Player Characters (NPCs – in PnP RPGs controlled by the GM, in digital games controlled by the game software and implemented e.g. as an autonomous agent [16] there will not recognize them despite their past visits. The players can drop quests and missions without any consequence from the NPCs from which they accepted them in the first place. Players can only develop a character personality as a feature outside the framework of the game, and only utilize it when interacting with other players. Finally, players cannot enter a dialogue with a NPC that is not pre-scripted or generated automatically.

### 3 PnP RPGs

Role Playing Games (RPGs) span a variety of formats [13], and form an important genre of both tabletop and digital gaming<sup>2</sup>. One of the reasons is the collaborative nature of the storytelling process in these games across media formats, which is of interest in developing interactive narratives in a digital environment [12],[17]. A core feature of PnP RPGs is the ability of these games to generate personalized stories of the type the individual player prefers. In PnP RPGs, there are a range of steps that need to be completed before the game itself can actually begin, including the creation of the PCs and their integration in the fictional world. The PCs form a primary tool in creating personalized gaming experiences in PnP RPGs. Character developed by, and personal to, the players, encourage and assist role playing and engagement. Furthermore, the integration of these characters into the game world, form a basis for anchoring the PCs in the world and give them an interest therein. PCs can have families, backgrounds, histories and previous experiences in the fictional world just like people do in the real world, and the players can define these to the extent they prefer. In the case of MMORPGs, having the virtual world react to PCs during play can only be done if the creation process is detailed enough to provide subjects for the game systems to respond to, and which provides enough variation to enable the creation of player-unique PCs.

### 4 PCs in MMORPGs and PnP RPGs

MMORPG character generation systems are usually limited to dealing with two factors: Avatar appearance and character stats/skills. Features that are difficult to program, model and animate such as PC personality and -background are usually de-emphasized. Some MMORPGs allow the players to enter personal information about their PCs; however, this information is rarely integrated with the game mechanics. The addition of personal information beyond name and race is usually delegated to the final stages of PC creation, and is often voluntary. The integration of the PC in the game world is minimal. E.g., in *World of Warcraft*, the integration of the PCs rests solely on the choice of race, PC class and to some degree PC level, as more content becomes available with level increases. The available content largely depends on the first two factors. Combined with NPCs recognizing the PC name, class and/or race, this is the extent that these PC features are utilized by the game.

While there is a considerable variation in the approach to PC building in PnP RPG rules systems, the process often requires the players (or the participants choose) to go through a similar set of overall phases in building their character, which broadly focus on establishing the **personality**, **stats** and **integration** of the PC in question. However, a stats-focused approach is also common, with the personality generating process occurring as a separate element of the establishment of stats/skills, with no

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<sup>2</sup> While the design and development aspects of computer-based RPGs (CRPGs and MMORPGs) are well described in the games design literature (e.g. [1],[3],[6]), the tabletop- and physical forms of RPGs are primarily described outside design- and academic literature. While of varying quality, a substantial number of the treatments published outside the academia are very well researched and highly informative, a few examples including [4],[8].

rules or guide for this process (*Dungeons & Dragons RPG*). When constructing a character for PnP RPG play (with the exception of PnP RPGs with only formal or informal rules for the collaborative storytelling process), all three of these phases are addressed. Each of the three phases can be divided into a number of PC components, the exact detail of which can vary from player to player, system to system (Table 1).

**Table 1.** PnP RPG character elements

<b>PnP RPG character components</b>		
<b>Personality</b>	<b>Psyche</b>	The psyche basically defines the core of the character, covering all aspects of the character psychology, including emotions.
	<b>Goals</b>	Goals are the primary tool for GMs in engaging the players, and the principle is known from quest systems in MMORPGs and CRPGs. Goals can be as simple as instructions or missions: Kill the dragon, free the princess; loot the orc lair; get to level 33 etc., but can also can be personal, e.g. maintaining a close relationship with a sister, or not letting a phobia control ones life. The latter are generally harder to program and anticipate, and therefore rare in computer games.
<b>Stats</b>	<b>Traits, Abilities, Skills</b>	The stats provide the mathematical numbers associated with the character, e.g. strength and other physical or mental attributes, abilities and skills (e.g. farming, sword-fighting) and unique powers (i.e. spell casting). The stats directly affect the effect of the PC interacting with the virtual environment.
<b>Integration</b>	<b>Connections</b>	PCs will have connections with other PCs. This could be as simple as them being a member of the same clan. Associations with other PCs ideally include what opinions the character has towards these. Associations can be with other player controlled PC or NPCs. Most characters start out with associations formed by their background, and build up increased contact networks during the running of a PnP RPG.
	<b>Class</b>	While not a requirement in either PnP RPGs or computer-based RPGs, most MMORPGs define an occupation or character class for the character ( <i>Dungeons &amp; Dragons</i> -games), while others develop stats/skills based on character actions ( <i>Morrowind</i> ). Occupations and classes can be used to help develop the vision of the character, but at the same time can be restrictive. Occupations and classifications are generally developed via a rules system, but need not be so.
	<b>Location</b>	Why is the character where he or she is? The characters – and thereby the players – need to have enough information to give them a solid hook into the game world. For example, it could be that the group comes together for the first time because they all were friends of an important person who is dead and his son called them to revenge him.
	<b>Back-ground</b>	Background details where the characters come from, the events that have brought them to where they are in their lives. This includes the history of the character developed during game time.
	<b>Contacts</b>	Contacts are a specific type of association, which is characterized by being a quest giver, mission provider or similar entity that progresses the game story. Contacts are the NPCs that initiate the adventures of the PCs. They exist in all forms of RPGs, digital or not (e.g. <i>City of Heroes</i> ), and are one of the primary means of propelling the players forward in the game. The typical contact is a quest provider.

Due to the wide variety of PnP RPG rules systems and the inherent flexibility and modality of these systems, and perhaps more importantly the differing desires of the players in how to play these games, there is a broad variation in the character developing process. In many PnP RPGs, the players initially develop their character personality, forming an initial **vision** for the character and its integration in the game world fiction (an integration the GM typically expands upon). Character personality and integration thereby form the focus of the initial phases of the character generation.

The PnP RPG rules systems often provide rules-based systems for developing the personality, motivations and world integration of the PCs (e.g. *Generic Universal Role Playing System*). These rules-based systems assist the players in developing the vision for their character, and serves as an aid to the players and GM alike in running the game. For example, a PnP RPG system could include a system for determining the past career path of characters, which would influence which skills and abilities these have emphasized, and detail some experiences in the past of the characters (e.g. *Mutant Chronicles, Traveller*). It is important to note that the systems developed in PnP RPGs to help the players define the personality and integration features of their characters are not meant as a means to form complete psychological models – they form an aid to the players, a guiding system. For example, a player might have selected four psychological features of his or her character, from a list in a PnP RPG rule book, however, that does not prevent the player from developing more features for the character. The advantage that personality- and integration-systems in PnP RPGs provide, however, is a rules-based expression of these features. For example, a player might have chosen the “arachnophobia” personality trait, thus fighting less effectively against spiders, thereby providing a translation into quantifiable rules.

In the quest to personalize the experience of playing MMORPGs and CRPGs, character generation systems and approaches in PnP RPGs form an interesting feature, which holds a potential use beyond the current adoption of stats/skill-based character generation. Specifically, the rules systems developed to assist players of PnP RPGs developing the features of their characters that do not relate directly to the basic stats of the characters, e.g. their personality, and providing a mean of expressing some of these features as computationally usable quantifiable numbers. These systems do not override the vision the players have for their character, but assists in implementing it in the game world and the rules system. A common approach is to use point-buy systems, where players get a certain amount of point to spend on special character features, such as psychological strengths and weaknesses, in-game contacts, wealth or aptitude for various skills.

## 5 Personalizing the Characters in MMORPGs

Because MMORPGs are persistently-running massively multiplayer games with limited running resources, it is difficult if at all possible to personalize the story to the individual player to the degree of PnP RPGs. What MMORPGs can do, however, is adopt some of the techniques of PnP RPGs in developing characters with personality and integration components as well as stats components, and draw upon experiences from PnP RPGs in personalizing the playing experience even further during actual

game play. For example, by utilizing the personality and integration components of the characters in directing game content to the player, e.g. via quests triggered by personality components of player characters. This, however, needs to be done in a fashion that conforms to the limitations of development resources (notably ensuring that redundant content is minimized), running processing resources, the virtual medium itself, player exploitation etc.

## 5.1 Personalizing PCs in MMORPGs

The personality component of PnP RPG characters can be subdivided into **Psyche** and **Goals** (Table 1), however, in the visual environment of MMORPGs the **Physical Appearance** of the character is also important. This feature of characters plays a more indirect role in the mind's eye-driven environment of PnP RPGs.

### 5.1.1 Psyche and Goals

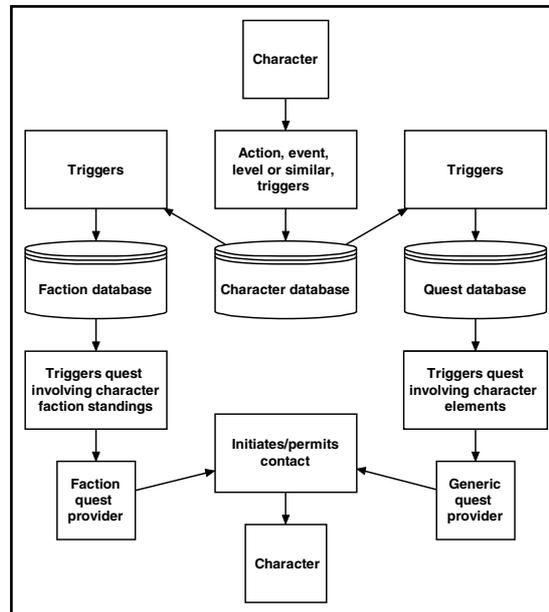
As outlined above, some PnP RPG rule systems such as *Generic Universal Role Playing System (GURPS)* feature rules-based systems for character construction and profiling, working with all aspect of PCs. The approach utilized is a system of advantages and disadvantages. When creating a character, the player is provided a specific sum of character points (or experience points). These can be spent on stats and skills, and on advantages and disadvantages, the latter of which can refer to either physical or psychological benefits or problems/weaknesses. Advantages benefit the character one way or the other – the PC is strong-willed, fearless and passionate, have a large income etc. Disadvantages provide weaknesses: E.g. phobias, detrimental appearance, poverty, bad social manners, a persistent enemy etc. Taking a disadvantage provides the character with extra points that can be spent buying advantages, stats and skills. For example, a player might choose to be from a poor background and therefore sickly of health, in order to gain points to develop the character intellectually. In *GURPS* most of the advantages and disadvantages have an in-game, rules-based effect – e.g. a character with arachnophobia fights less effectively against spiders. However, personality building systems can also be used purely as a tool for the player in developing the personality and integration features of the character, without any actual rules-based effect (such as modified stats or skills, access to specific objects etc.). The model presented here operates at a fairly modest level, and more advanced options exist for virtual reality applications, e.g. emotion-based character models. Personality systems provide a programmable way for MMORPG character generation systems to go beyond skills, abilities and special powers, in fleshing out PC personalities. This provides the players a tool for role playing and immersing themselves in their characters, and the MMORPG engine a tool for gathering information it can use to personalize the gaming experience to the individual player. There are several ways these systems can be integrated into MMORPGs, largely dependent on the extent of the in-game effect of the PC personality elements:

*In-game effect:* In the case where the personality system has an in-game effect, as in the PnP RPG *GURPS*, there are several options for this effect. A very simple example could be that a player chooses the “*arachnophobia*” disadvantage. Because of this choice, the character would have a permanent disadvantage in combat against

arachnid-classified MOBs, or when fighting in environments connected to the occurrence of arachnids in the fictional world. The effect can be extended to include context-sensitive quest presentations to the PC. For example, if the quest system or database (quest database, Fig. 1) is capable of recognizing whether or not a PC speaking with a NPC quest-provider has the “*arachnophobia*” disadvantage or not (character database, Fig. 1), it can modify the NPC conversation accordingly – the NPC (quest giver, Fig. 1) might be aware of the PCs phobia. Such an implementation of the personality system would, however, require an increased amount of text preparation in the design phase of MMORPG production. However, there is a direct benefit in terms of increased personalization. This provides the player with context-sensitive expression possibilities whenever in subterranean dungeons. Furthermore, a point-based personality system incorporated throughout a game provides a further option for expanding the experience point system, with players being able to buy new advantages or buy off disadvantages (which could be used as the subject of quest chains); i.e. to develop the personality and character during play.

Personality systems with an in-game effect need to be robustly designed in order not to be prone to player dissatisfaction and abuse. If a player of a MMORPG is twice as likely to fight orcs as spiders, players will quickly figure out to take the orc-fighting advantage and the spider-fighting disadvantage in order to maximise the fighting capacity of their character. Therefore the orc-fighting advantage has to cost more points – and the prices have to be calculated based on the fact that players might not encounter that many orcs if they choose to venture through areas of the MMORPG where orcs are rare. This is a balancing issue; however, these kinds of problems are common to MMORPG design.

*No in-game effect:* A character building system need not have an in-game effect directly. Players could e.g. select advantages and disadvantages purely for the purpose of building a PC personality. This is a very safe approach from a balancing perspective, and does not rule out using the personality profiles of the player characters to direct content accordingly. E.g.: A letter arrives for a player character via the in-game postal service or equivalent information-distribution function, from a NPC in a different area of the game world. The NPC has a problem with a demonic infestation, and has heard via the grapevine that the player character has a grudge against demons (chosen as the personality trait *demonic grudge*). The NPC is interested in hearing if the player character would care to help him with the infestation for a modest reward, and includes some travel money with a map of how to find him. This example is basic, however, it provides a very simple way of adding a bit of personalization to the player experience (and provides a role playing aid for the player), by making the game react to the choices the player made when generating the character. Note that the approach does not require the addition of extra content, only that content is directed to the player in a manner consistent with the choices the player made when generating the character. Furthermore, the approach allows for players to update their personality profiles as they play. The approach can be combined with a personality system with an in-game effect as described above. The approach is consistent with the logic of the fictional world as long as this features a method for communication between the players, while at the same time being a very obvious game mechanic. Players will realize that the game design attempts to respond to their characters, thus the development resource put into the system will be experienced (and hopefully appreciated) by the players.



**Fig. 1.** Simplified implementation model of a character elements response system. Two examples provided (general and faction-triggered quests). Symbols: SSADM/IDEF0 terminology.

**5.1.2 Physical Appearance**

In PnP RPGs players are free to decide on the physical appearance of their PCs and what clothing they are wearing, subject to the limits of the character race and wealth. For example, a player could choose to play a fat troll with a gold cape providing the PC has the necessary funding to buy a gold cape, or acquire it via other means. In MMORPGs the options for personalizing character appearance is limited. For example, in *World of Warcraft*, the face, hair style/colour, tusks, and skin colour each has a limited number of variations; however, the basic shape of the avatar cannot be altered. While the total amount of variations using the *World of Warcraft* appearance generator is huge, the resulting characters remain similar except for the head/face and skin colour. In order to further facilitate personalization of characters in MMORPGs, appearance options could be expanded to facilitate other forms of customization, e.g. body form, which is rarely an option in MMORPGs. Virtual social worlds such as *There* and *Second Life* generally allows for advanced customization, and newer CRPGs such as *Morrowind* allows detailed customization of avatar appearance. In some PnP RPG rules systems, such customizations affect the basic stats of the character; finally, PC appearances in PnP RPGs can be modified as the game progresses, a similar system could be envisioned for MMORPGs. Appearance can even be used as the basis for quest triggers or form he basis for quest storylines. Customisation of game characters is one of the motivations of MMORPG players reported by [18], especially with female players.

### 5.1.3 Integration in the Fictional World

In a PnP RPG, the GM and the players can work together to achieve a high level of character integration in the world fiction. In MMORPGs, it is necessary to adopt a more limited strategy due to the relationship between development, running resources available and player number. Similarly to personality generation systems, integration and goals, associations, backgrounds etc. could be defined via a player-choice based system. In the example provided above, a quest system could be designed to react not only to personality traits, but also backgrounds and specific types of goals. For example, a PC with the background *family slain by demons* could be directed to the same quest as the PC with the personality trait *demonic grudge*. Indeed, the two PC features could be linked. As for the personality example, the quest system should ideally respond to the specific background in the way the NPC contacts and talks to the PC. In order to avoid having to deal with huge amounts of text writing and editing, a quest system could utilize a text generator or simply use a model of quest text that is easy to modify to suit different conditions (note that not all quests will need to feature texts specialized to every type of personality or background).

Goals could likewise feature in-game effects. For example, if a character has the goal to defeat a dragon in his or her lifetime, the quest system could contain a specific quest accessible by players with this goal only, however shareable with other players. Other alternatives include goal-specific rewards. Creating 30 single- or even chained quests specific to a particular character goal is not a major development issue in contemporary MMORPGs that feature quests in the hundreds. If specifically designed to include a quest chain link for specific intervals of character development, e.g. via PC level increase (the common method to advance characters in MMORPGs), and to be shareable with or requiring the assistance of other players, these goal-oriented quests remain broadly accessible content. Class-specific goal oriented quests exist in e.g. *World of Warcraft*, where each PC class has specific quests; however, these are based on character class, not the character personality itself.

A commonly used method for providing backgrounds to PCs is to associate them with specific races, factions or similar. This approach is also used in PnP RPGs (e.g. *Vampire the Masquerade*, *Mutant Chronicles*), and in these games PC family or clan relations can be as complex as those of the real world. While the race and clan concept exists in MMORPGs, it is possible to expand these based on PnP RPG experiences, for example in associating PCs with specific clans or families. Such families could have specific quests associated with them accessible only to PCs that are members of the family, and in order to keep the content open to PCs that e.g. perform specific tasks for the family or which are accepted as friends of the family based on their association with PC members. This would lead to a range of opportunities for quests to be tied to the different families or even between them, with any percentage of these being open quests accessible to all PCs.

## 6 Conclusion and Discussion

While the experiences that can be gathered from PnP RPGs to facilitate personalized experiences in MMORPGs will not revolutionize these games, they do provide relatively straight forward ideas for enhancing the character-based personalization of current MMORPGs. It remains, however, a question whether the implementation of PnP

RPG-derived PC generation and integration features are financially viable in MMORPGs, without requiring major development costs. A project aimed at developing and implementing such a system is currently being planned.

When designing personality or integration systems for MMORPGs, it is necessary to realize that players have varied ambitions with the gaming activity [19]. Just as in PnP RPGs, some players will not care about character personality, nor take any pleasure from the world responding to their character. Others will try to maximise the rules-based benefit they get from the character generation system (if relevant). An advantage of personality systems used in PnP RPGs is that they are inherently designed to be flexible to accommodate different player styles of play and ambitions.

The generation of a PC personality in MMORPGs could be completely or partly facilitated by systems constructed along similar lines as in PnP RPGs. E.g. a system which guides the player through a process of choices concerning PC background, personality traits and similar in an either selection-based or randomized system. These can include options for varying how much time the player wishes to spend on the process, to a simple auto-generation option, which provides a few keywords for the personality and background (or no background). These the player can use or ignore. Likewise, players could be allowed to refine their PC personality and integration during play, as is currently possible for stats and skills (Table 1). Neither of these features will, if designed properly, limit player access to game content, however, it will direct content based on the PC personality and world integration. Other sources of inspiration for MMORPG design include the use of role playing-based awards, contrary to the typical combat-based rewards systems. Furthermore, many PnP RPGs feature rules for “social skills”, that which for example can be used to decrease item prices from vendors, quest access etc. Balancing is a central issue whenever such features are to be provided an in-game effect or similarly integrated in MMORPGs.

There are limits to how much can be achieved in terms of personalizing the gaming experience, role playing characters, creating dynamic narratives etc. when operating directly within the framework of existing mass-market gaming technologies. Work such as [9],[12],[16] point towards game formats featuring advanced user-responsiveness. PnP RPGs are investigated in developing these technologies, and will likely continue to be a source of inspiration for MMORPGs.

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