Designing interactive systems through a game lens: An ethnographic approach

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ABSTRACT

This research has the aim to find new meaningful elements, in the video game world, that could inspire the design of novel gamified systems. Starting from the players' point of view, I looked at the field of the Massively Multi Player Online Role Playing Games as a source of inspiration, conducting an ethnographic study in World of Warcraft. Thus, drawing on the findings gathered in my empirical work, I identified 9 recommendations to suggest new directions for the gamification design of interactive systems. Some of these recommendations are devised to suit the applications that pivot on user social participation. Others are aimed at imagining new forms of online communities. Others address those interactive systems that aims at changing user behaviors. These recommendations, by suggesting to support the development of intrinsic motivations, proposing new and diversified game elements and recommending to look at systemic design strategies, aim at addressing the limits of the current gamification techniques. At the high grade of abstraction they are left, they are meant to be applied to different fields.

KEYWORDS

Gamification; ethnography; recommendations for design; engagement; motivation; behavior change.

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1 INTRODUCTION

1.1 Overview

One trend that is marking contemporary society is the growing importance that recreational activities are taking into our life. Games are gradually breaking their traditional boundaries, spreading in a variety of areas connected to everyday communication and social interaction (McGonigal, 2011). Huizinga (1949) and Callois (1962) stated that one of the main peculiarities of games is to place the player in a separate world, which confines the game activities in well defined space-time borders. Now, the distance between the play world and the ordinary world is progressively decreasing. Some phenomena with an increasing impact are symptomatic: *serious games* merge serious and fun goals, offering a teaching tool, by joining games with education techniques (Michael & Chen, 2006); *casual games* reach segments of the population previously reluctant to play video games: they also pervade every aspects of the daily life, by being designed to be played at every time of the day and in every context (Juul, 2010); *pervasive games* embrace their contexts and environments, merging with the real world in which they take place. (Montola et al., 2009). All these phenomena made game elements overflow into fields traditionally linked to the everyday life.

This trend is also more and more visible in interactive systems: an increasing number of non-recreational applications and services leverage game elements to offer users a more involving experience. Deterding et al. (2011) called this phenomenon *gamification*, defining it as "the use of game design elements in non-game context" (Deterding et al., 2011: 10). Because of its wider use in HCI literature, I would suggest to follow the Deterding et al.'s definition of gamification, applying it in this work, keeping in mind that other authors (e.g. Huotari & Hamari, 2012) went in different directions.

Although gamification seems to have some kind of efficacy in users' motivations, engagement and behaviors (Hamari et al., 2014), several HCI researchers have highlighted its limits and open issues,

posing the question of how to reconfigure the current most popular gamification strategies (Rao, 2013; Nicholson, 2012; Sakamoto et al., 2012; Laschke & Hassenzahl, 2011; Jacobs, 2013).

This research, by taking the players' point of view instead of that of the game designers, has the aim to find new elements, in the video game world, that could contribute to motivate users in online environments, engage them in the use of interactive systems and drive their behaviors towards healthier and more sustainable lifestyles. Looking at the field of the Massively Multi Player Online Role Playing Games (MMORPGs) as a source of inspiration, an ethnographic study in World of Warcraft has been conducted. Findings of this research grounded the development of a set of recommendations for design that try to suggest new ways for going beyond the current gamification techniques.

The paper is structured as follows. First, I provide a brief literature overview of gamification issues and proposals to overcome them. Second, I look at World of Warcraft to find new game elements to be applied in designing interactive systems. Then, I describe my ethnographic study and the related findings. I conclude the paper proposing recommendations that suggest new directions for gamification design.

2 BACKGROUND

2.1 Gamification

Gamification is commonly used in designing interactive systems to enhance user engagement (Barata et al., 2013), foster her motivations to participate (Cechanowitz et al., 2013) and change her behaviors towards a more sustainable or wealthy lifestyle (Ferron & Massa, 2013). Existing systems have received several criticisms (Deterding, 2013) on the accounts that, for example, i) They add solitary, stand-alone game mechanics into existing environments to merely dress the surface of interfaces and services (Jacobs, 2013); ii) They leverage exclusively extrinsic rewards, reminiscing of operant conditioning through Token Economies, ignoring users' intrinsic motivations and meanings (Laschke & Hassenzhal, 2011); iii) They limit the game design elements employed to the so-called PBL triad (Points, Badges and Leaderboards), currently used in the majority of commercial applications (Werbach & Hunter, 2012) and academic research (Hamari et al., 2014). For these reasons Margaret Robertson called this *pointification*, stating that "what we're currently terming gamification is in fact the process of taking the thing that is least essential to games and representing it as the core of the experience" (Robertson, 2010), while Ian Bogost suggested to refer to it as *exploitationware*, since "it confuses the magical magnetism of games for simplistic compulsion meted out toward extrinsic incentives" (Bogost, 2011).

The issues pointed out by these authors suggest that we are not yet completely exploiting the means that games can provide to Human-Computer Interaction (HCI) and interactive system design. Recently, HCI community has started to wonder whether we should go beyond the current gamification practices, looking at video games not to induce automatisms, based on extrinsic awards, but to provide users with deep and rich experiences. Nicholson (2012) stresses the need of using meaningful game elements to develop a meaningful gamification, taking inspiration, for example, from Alternate Reality Games. Rao (2013) highlights that it is essential to rethink current gamification techniques based on competition, leaderboards and points, suggesting alternatives, as altruism and cooperative interactions. Sakamoto et al. (2012) suggest to go beyond common game mechanics, introducing a design based on values to develop services for behavior change.

Building on top of these considerations, I propose to look at MMORPGs to find new game elements capable of inspiring new ways of design for gamification.

2.1 MMORPGs and World of Warcraft

In recent years, MMORPGs have grown incredibly in complexity and size, engaging millions of players from all the world. The persistent nature of these worlds enhances the sense of projection in another reality, where players can realize their desires. Since they "are BOTH games and communities" (Ducheneaut et al., 2006: 413), they engender social dynamics that allow people to experiment new identities and find new relationships. Due the richness of the opportunities they provide, they require a huge amount of time to be played at best.

MMORPGs can be seen as an interesting phenomenon for gamification purposes on the basis of three factors.

The first factor is represented by the type of involvement that these games are able to elicit in their players. MMORPGs deeply engage their players satisfying all their fundamental needs (Rigby & Ryan, 2011). Yee (2006) has shown that players spend more than half working week in these environments, while NG & Wiemer-Hastings (2005) found that MMORPGs are played for much longer periods of time than other games. For this, MMORPGs have been also reported to be the leading culprit in cases of video game addiction (Council on Science and Public Health, 2007; Lee et al., 2007). These peculiarities make MMORPGs an ideal field of study for researchers that are looking for games able to inspire the design of highly engaging systems.

The second factor relies in their complexity. Players in MMORPGs can create and explore different identities (Taylor, 2006) and be engaged in a variety of tasks that go beyond the traditional notions of play (Calleja, 2007): activities like farming items or organizing people and resources, typical of MMORPGs, are closer to the world of work than to the world of game. This complexity, which merge "serious" and "fun" activities, can be interesting to observe, as a source of inspiration for finding new ways in which game elements can inform and support non-leisure activities.

The last factor is ascribable to their social component. One of the reasons that attract players to MMORPGs is the presence of other people (Ducheneaut et al., 2006). Compared to other kinds of multiplayer games, MMORPGs support a wider range of types of social interactions (Drennan, 2007). This richness of social relationships engendered by a game structure can lead to find new forms of social game elements for gamification purposes, going beyond the elementary social components employed in the current gamified systems (e.g. the social comparison of badges, or the competition through leaderboards).

World of Warcraft (WoW), introduced in 2004, with over 8 million of active subscribers in 2013 (Wikipedia, 2013) is still the most popular MMORPG available on the market. Players advance through 90 levels of play, exploring the vast world of Azeroth, collecting items, accomplishing quests and slaying monsters. Game tasks are mostly in the form of quests that non-player characters propose to players: accomplishing their requests, players can gain rewards such special items and experience points. Each player creates a character choosing its "race"[1] (e.g. Night elf, Human, Orc) and class (e.g. Mage, Priest, Warrior) that will determine its skills and its style of play. By and large, players are divided in dps (i.e. damage per second) with an offensive role, tank, with a defensive role, and healer, with the aim to heal other players.

Classes' asymmetrical abilities foster cooperation among players, who meet in temporary groups and structured guilds in order to complete the most difficult missions of the game (i.e. instances and raids). Instances are five players dungeons that can be faced either with a group of friends or using the dungeon finder, a feature that builds up casual temporary groups of players that do not know each other (pick-up groups). Raids are ten or twenty-five players dungeons that represent the hardest challenges in the game and can be accomplished using the raid finder, a feature similar to the dungeon finder but tailored to form larger groups, or by being part of a group of well known

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[1] "Race" is part of the gaming jargon and it refers to the different physical appearances and abilities of different types of characters.

players, usually organized in a guild. However, the most challenging raids, which reward players with the most powerful and rare items, can be only accomplished if part of a guild (i.e. a permanent organized group). Players can also role-play in dedicated Role Play servers, or in normal servers too, acting and speaking as if they were the characters they control.

As years passed, WoW has become synonymous with MMORPGs: for the uninitiated WoW is *the* virtual world par excellence (Calleja, 2007) and for game designers WoW set the MMORPGs "genre standards in polishing those previously defined in DIKU-MUDs" (Debeauvais et al., 2011: 181). Researchers have found in WoW a perfect example for explaining how video games glue their players to the screen, since this is "a game that 'hits on all cylinders motivationally', creating a deep and enduring loyalty in its audience" (Rigby & Ryan, 2011). One of the interesting aspects of this game is not only the appeal that has extended outside the strict community of hardcore gamers, "but also the way it has entered the offline culture's everyday speech to a greater extent than have most other computer games" (Corneliussen & Rettberg, 2008). These peculiarities make WoW the empirical case closest to the "ideal type" (as Max Weber (1949) intended it) of a MMORPG capable to create an enduring engagement in its players. Selecting a typical/emblematic case as the subject of a qualitative study is essential to make a generalization of its results (Gobo, 2008). For this reason I chose WoW as the subject of my ethnographic study: representing a typical and emblematic case of MMORPGs, it could better ground the design recommendations that I intended to extract from the research results, giving them a more general validity.

Many researchers have investigated WoW within the context of HCI. For example, research related to players' motivations (Yee et al., 2012), characters' value (Livingstone et al., 2014), learning (Nardi et al., 2007), virtual currencies (Debeauvais et al., 2012), personality (Yee et al., 2011), characters' names (Thurau & Drachen, 2011), transgressive play (Sundén, 2009) and demographics (Yee, 2006) have been conducted during the years. As the social dimension is essential in experiencing the game's potentialities, a number of investigations have explored the players' experience of intimacy (Pace et al., 2010), the factors that could explain the success or failure of a guild (Ducheneaut et al., 2007), leadership styles (Prax, 2010) and player behaviors (Bardzell et al., 2012) within raids, collaborative play and friendship among players (Nardi & Harris, 2006), how playing WoW enhance real-life social relationships (Snodgrass et al., 2011) and the constant negotiations between players and Blizzard on control, agency and ownership over the game (Glas, 2013).

Several studies of WoW (e.g. Nardi, 2010; Golub, 2010) have adopted an ethnographic approach to trace the peculiarities of its embedded culture and outline its social structure. Nevertheless, much of these research have pinpointed online interactions without connecting players' experiences with those design elements that influence the players' behaviors and shape the community behind the game. Up to now, to our knowledge, no ethnographic study in video game environments has been conducted to investigate how games can improve design in non game contexts: the ethnographer's attention has never been directed at identifying game elements suitable to be translated, with opportune adjustments, to other environments. What do these elements represent for players? How are they engaged by them? What conditions the players' emotions, motivations and experiences? What kind of design strategies push players' behaviors in specific directions? To answer these questions, I propose to change the perspective commonly applied in gamification studies, adopting a new approach that starts from the players' point of view, instead of that of the game designers, to find meaningful game elements able to be leveraged by gamification design. To this purpose, an ethnographic study in World of Warcraft has been conducted.

3 METHOD

I conducted an ethnographic study in World of Warcraft for a period of one year and a half. I opted for a reflexive approach that, distancing both from the constructivism of the postmodernism and the

realism of the natural sciences[2], recovers the objectivity of the ethnographic observation in the reflexive description (Cardano, 2009). From this perspective, it is necessary to take into account the researcher's personal experience, emphasizing the encounter between the ethnographer and the members of the group being studied, incorporating it into the ethnographic description (Tedlock, 1991). In reflexive ethnographies, researcher's experience, studied along with other participants, becomes important primarily in how it illuminates the investigated phenomenon (Ellis & Bochner, 2000).

I began the ethnographic research conducting a participant observation in WoW. I played WoW intensively from October 2012 to February 2014, reaching with my main character (a Night Elf Mage) the level cap (90), participating in a variety of guilds and becoming a guild officer in one of them, accomplishing almost all instances and raids available in the game and engaging in a variety of game activities, such as trading, farming and dueling. To widen the heterogeneity of the phenomena observed within that world, I created 4 additional characters of different "races" and classes. Observations occurred within all stages of my journey in WoW, from the initial solitary game experience (mainly through auto-observation), to the social activities within instance groups and guilds, in the more advanced phases of the game. Observations took place mainly in a PvE server (Player vs Environment), where players can't fight each other with the exception of certain areas. To take into account also the playing dynamics of the PvP servers (Player vs Player), where players can fight each others everywhere, two of the four additional character were created in a PvP server.

I only played the last expansion of WoW, called Mists of Pandaria, and the related patches 5.1, 5.2, 5.3, 5.4. It is important to clarify that the game that I have been playing is bounded in time. A game like WoW is constantly transformed through expansions and patches: during the years, WoW has changed many game elements, which had a strong repercussion on players' behaviors. Eklund & Johansson (2013), for example, highlighted how the introduction of the dungeon finder feature has radically altered the premises for temporary collaboration groups. Although I was able to partially reconstruct the past versions of WoW through the players' words, the results outlined in this research are limited to Mists of Pandaria and they would not necessarily find confirmation if referred to the previous (or future) expansions of the game.

I documented my journey by taking accurate field notes throughout all the game experience, describing both my personal feelings, thoughts, hypotheses and others' behaviors, practices and habits. In addition, I conducted several informal in-game interviews with co-players. More formal interviews were conducted either in the real world, meeting face to face the participants, or in WoW world, during in game interactions. In the first case the interviews were audio recorded, and then transcribed, while in the second case they were registered via WoW chat logs. The total sample was composed of sixteen participants, 9 male and 7 female, with an age range of 18 and 45, with an average of 30,1 (SD: 7,4).

The sample size was considered adequate to the purposes of the research and for the standard practices[3] in qualitative studies applied to technology (Marshall et al., 2013). Other studies that investigated WoW through qualitative interviews have adopted a similar sample size: Bardzell et al. (2008) interviewed 6 informants on cooperation in WoW; Prax (2012), studying the leadership styles in WoW, interviewed 12 participants; Livingston et al. (2012), investigating the value of the characters for the MMORPGs' players, interviewed 20 participants. My final decision of settling for 16 participants came when I realized that additional formal interviews would not have produced

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[2] The roots of the postmodernist position in ethnographic research can be individuated in Writing Culture (Clifford, 1986) where the authors "highlight the constructed, artificial nature of cultural accounts" (Clifford, 1986: 2), where ethnographies become no other than "fictions"; while the realist positions (e.g. Runciman, 1983; Goldthorpe, 2000) sustain the need of evaluate the ethnographic discourse with the same criteria adopted by the scientific research in the quantitative and hard sciences.

[3] Marshall et al. (2013) suggest that single case studies should generally contain 15 to 30 interviews.

substantial new insights for the purposes of my research, following a data saturation criterion (Bowen, 2008).

The sample was selected following a purposeful sampling technique (Marshall, 1996). It was differentiated mainly along the dimension of engagement, taking into account three factors: i) degree of player experience, defined by her character's level; ii) age of WoW account, iii) number of hours of play per week. Another dimension emerged as central, for the more engaged players, throughout the interviews: the social centrality, by which I mean the social role covered by the more engaged players. The sample was then adjusted taking into account this dimension too.

The final sample can be conveniently split in the following types: *hardcore gamers* (6), players with a character at level 90, which have more than 2 years of experience in WoW and play more than 20 hours per week; *normal players* (4), which have a character at level 80-90, with more than 6 months of experience in WoW and a moderate but constant frequency of play (10-20 hours per week); *novices* (4), which have a character at level 30-80, with less than 6 months of experience in WoW and an occasional frequency of play (less than 10 hours per week).

Hardcore gamers were further differentiated in: *leaders* (3), officers or founders of a guild with a central role in their network of social relationships; *followers* (3), players with no role in guilds and not recognized as central by their network of social relationships. Two additional players who have stopped playing WoW were added as outliers (*ex-gamers*), following the indications of players met in my guild, in order to investigate their process of disengagement. *Hardcore gamers* represent the most consistent part of the sample, as they were considered key informants.

More than one-third of participants played other MMORPGs (6 out of 16) or table role-play games (e.g. Dungeons & Dragons) (2 out of 16): this allowed to enlarge the field of investigation to other games during the interviews. These were semi-structured and lasted from two to three hours: I was free to pursue interesting leads not foreseen in my initial protocol. Participants were recruited in the game world, mainly in a PvE server (10 out of 16): half of the participants were recruited exploiting the social relationships that I developed during the participant observation; the others were recruited during instances or raids, in randomly built groups. Names of my character, of the players' characters and of the guilds were changed to protect privacy.

I combined the in-world investigation with an out-of-world exploration of the documents related to WoW, following a multisite-based approach (Marcus, 1995): I periodically visited the official forum of WoW and the forums managed by the guilds where I was enlisted, following threads and participating in conversations.

Even if it is not constantly remarked, the elements highlighted in the results section are supported not only by the words of the participants, but also by my participant observation, by the many informal discussions I engaged with other players during the study and through the analysis of the documents.

The objective was doing an "outdoor psychology" (Geertz, 1983), where player motivations, processes of engagements and behavior dynamics were studied "in practice", observing everyday activities in context (Lave, 1983). Findings, such as subjective experiences, meanings, routines and rules, were then connected with those design strategies that influence individual and group perceptions and behaviors in WoW. They were sometimes interpreted in the light of motivation and social groups theories, which were employed to additionally support the recommendations for design defined in the section 5.

4 RESULTS

4.1 Identification and empathy, past and future selves

Temple of the Jade Serpent: Notes of May 11th, 2013

I was in the Temple of the Jade Serpent when I realized that my character was not as powerful as I hoped. My strongest attacks were about 10k lower than Naos, a mage with my same spec (fire) I was playing with. I spent the rest of the day trying to understand the reasons of my weakness. That was when I started thinking about my relationship with Evyer, my level 90 mage, my main character in WoW. From a certain point of view, Evyer, well…, he was me, everyone in game referred to me as Evyer: with a drive to excellence, but introverted, tactful, with a propensity for strategy rather than impulsive actions. From another perspective and at the same time, he was a completely different entity, far removed from me, something that I had to care of, had to evolve, enhance, nurture, and to which I felt an emotional attachment. Jumping back and forth between identification and empathy, I thought that Evyer was a representation not only of my present self but also of my past in-game behaviors, actions and emotions. His equipment, the achievements and the friend he made represented, in fact, the story of my entire journey in WoW. While in the skills yet to be acquired, in the abilities to be mastered, in the attributes to be developed I could foresee my future selves, some ideal images of realization in the game.

Characters in WoW are the means through which players act in the game world and interact with other players. They are a complex representation of players' actions and behaviors, embodying a variety of meanings. This episode highlights the dual relation that ties the player to her avatar: identification and empathy. For Daemon, a mage in the Dungeons & Dragons world for many years before joining WoW one year ago, his avatar is the transposition of his self in a fantasy world: "*I've been playing the same character for years… Daemon is my alter ego, is my self transposed in another reality, better, in other realities, wherever I played he was*". Although role playing was experienced by a minority of the participants (2 out of 16), almost half of them express a sense of projection in their avatars.

Other participants refer to their characters as if they were something removed from themselves: nevertheless, these participants feel a sort of emotional attachment, a feeling usually experienced towards entities that must be nurtured and taken care of. "*I see my character as a means to reach my in-game goals* – Herik says - *a puppet that I have to care of, wear and improve… he has an instrumental value for me, he allows me to progress in game… he is like my pet… I grew fond of him*".

However, as highlighted in the episode above, identification and empathy, rather than being mutually exclusive, are complementary attitudes that players have towards they characters. Most of the participants, in fact, waver from an internal to an external point of view when they are talking about their avatars.

While expressing this ambiguous relation, the majority of participants confirms what reported in the episode above: avatars represent not only their current self, but also embody their past and their future selves. Casdan, a player with a five-year experience in WoW, who developed three characters at level cap but chose a Rogue as his main, says, for example: "*Everything in Casdan reminds me of something that I've experienced in WoW… The equipment he wears stands for all the bosses I defeated and the attempts I made at that…*". Kylian, who plays WoW fairly but with regularity, goes in the same direction, reporting that all his character's attributes remind him of his efforts in improving it.

Instead, Daemon describes how his character is always projected in the future, to completeness: "*Daemon is devoted to knowledge, to learn as much as he can in regards to his class in the game. I'm trying to learn all the professions that can improve his spell abilities and experiment different combination of equipment and potions to maximize his intellect… In my character I see what is still missing, what he needs to have*". While Abraxas, a WoW player since its beta version, who prides to be one of the best players of his server, recollects how he always addressed his avatar as an ideal that made him work hard and, looking aloft, as if he could see it, says: "*When I started playing I saw so powerful and distinguished characters roaming around WoW, that I wanted to be like*

them… I devoted all my strengths to reach the idea of the strongest DK (i.e. Death Knight) *in my server, invulnerable, respected, desired*".

WoW allows players to act and immerse in a fantasy world through their characters, creating a deep connection that drives their behaviors and enhances their engagement. By supporting character customization and role playing, and by giving players the freedom to behave and act as they desire, WoW fosters players' identification in their avatars, with the possibility of experimenting different selves and different facets of their personality. Moreover, providing the opportunity to choose the path to address for their characters' skills and attributes, WoW instills in its players the will to take care of their evolution and improvement, supporting an empathic relationship with them.

If characters in WoW represent the possibility of experimenting different ways of being, they also embody the past and future selves of the player. Game memories, variously evoked by avatars (i.e. equipment owned, achievements accomplished, friends added), favor players' reflection on the choices made and the transformations they have produced on their own identity in time. While the opportunity to project future selves, looking at other avatars as possible models, or at all that is missing in their actual character to be ideal, drives players' behaviors in persevering in their endeavors, in reaching such ideal images of self.

4.2 Rewards

Rewards in WoW are mainly concretized by objects, such as items, gear and mounts that can be obtained completing quests and killing bosses during instances and raids. Participants show the multiple meanings that they may have within the game. Elys, for example, having played WoW only for three months, mainly appreciates the way such elements work for the appearance of her character: she is attracted mostly by the cuteness of pets and mounts owned by other players, as "*the equipment is the first thing visible to other players when I'm wondering around… It is the same for the mounts, flaunting a rare one is like having a Ferrari*". Casdan reports how the value of the gear evolved along with his experience as a player increased: "*Until I reached the level cap, gear had only an aesthetic value for me… I tried to make my character look cool, not worrying too much of its abilities… When I started to raid things changed drastically because specific items enable you to do more damage* ". Ilynx, a player strongly oriented to competition and progression within the game, specifies that: "*The fact is that gear and mounts mirror my reputation within the game: they capsule all my history as a player, my achievements and endeavors, and they are the first things that other players see of me*".

Although rewards in WoW incorporate all these meanings, what makes them really important to the majority of the participants is that they stand for the skills that players have. Having played WoW intensively for 7 years, obtaining almost all the rare items suitable for her class, Erwin can state with self-confidence what loots mean to her: "*Those objects testify my competence and my abilities, how I have played wholeheartedly… they are my skills in a symbol*". Abraxas adds that "*you can't have astonishing gear with no struggle and effort. What I wear is a materialization of my skills within the game… Having the Ring of Restless Energy at level 566 means that I was able to defeat Malkorok in heroic mode*".

For this reason, Aion, an ex-gamer who played WoW for eight years, since beta-testing phase, thinks that is inconceivable that now players can buy mounts and pets from the in-game shop (a new feature of the last expansion, Mists of Pandaria). These thoughts were shared among all the hardcore gamers and normal players interviewed, highlighting how objects in WoW have a value that should not be obtained with money.

WoW gives its players meaningful rewards that have aesthetic, instrumental and social values: they can be used as ornaments that trigger envy in other players for their preciousness, as means for advancing in game and accomplishing more difficult tasks, as signs that incorporate the past of the

player and allow others to recognize the value of their owner. Gear, mounts and special items, as well as being desirable for their appearance, enabling new powers and skills, and exposing players' reputation to others, provide representations of the players' competence, rewarding and standing for the skills that they consider essential within the game.

4.3 Social presence

Mogu'shan Vaults: June 11th, 2013

As soon as I reached the level cap I immediately attempted my first raid, using the raid finder. That day I was brought back to my first group play experiences: I felt completely inadequate, by not knowing which was my role and how I should behave among 24 other players. After The Stone Guard, the first boss, was defeated, a phone call distracted me for a little while. Soon, I realized that the others were gone away. For endless minutes, I was wandering around trying to find them, but not knowing the dungeon, I got lost again and again, while the others were making fun of my bewilderment. "*Arie: evyeer; Arie: wtf u doing; Arie: get back; Arie: other way; Arie: numpty; Jakes: hahaha; Arie: turn around; Lathor: enter where attila is; Lathor: enter; Jakes: haha where are u going; Jakes: WRONG WAY; Jakes: WRONG WAY; Lathor: Just enter where arie is; Jakes: follow the hunter*". What an embarrassment: that was, without doubt, my worst experience in WoW.

Downfall: July 27th, 2013

I spent 4 hours immersed in the last wing of the last raid of WoW. I did not know any of my companions, the group was randomly built. When we encountered the Siegecrafter Blackfuse, the first boss, we tried to defeat it, but when it lost half of its life points almost all of our party members had been wiped out. Only a dps, two healers and a tank, Phoenix, a paladin, survived. We were wondering why they were continuing the fight, when there were no chances to defeat that boss. Soon we realized that Phoenix was able to manage the boss and all the adds alone, while the other three were supporting him. The battle was epic: it was David against Goliath. We were astonished: "*Bliz: why still healing?; Brody: whhyyy; Himane: they can; Himane: nope; Himane: xD; Leo: Carry by palas; Nushi: i like to say this is pretty epic; Himane: omg they gone do this; Himane: wow; Himane: 40mil left; Leo: haha; Zalap: well thats was something indeed; Himane: omg respect; Leo: tos os fun; Brody: this is what i call good players; Wolf: just wow. :-); Himane: OMG XD*" When the goblin went down Phoenix left the group, leaving us with the sense of having seen a memorable battle.

The two episodes above highlight how the presence of others can have a strong influence on the performances and the emotions experienced by players. Novices are motivated mainly by making a good impression among their companions and avoiding shame for their mistakes. Macross, who is still a beginner in WoW, says: "*Sometimes I feel too exposed in the game. With Omen* (i.e. an add-on that allows all the members of the group to display relative threat generated by all the party members toward a specific target) *is like to be constantly under X-rays*". Although the fear of being blamed is shared by all the novices interviewed, they also point out that WoW gives them the possibility to get out, when the pressure is too high. Elys, for example, looking down and speaking in a whisper, embarrassed, says: "*Many times I felt so ashamed that I had to leave the group… Luckily, others can't reach you outside the instance…they can't find out where you are in the in-game world*".

As the experience increases, the peer pressure decreases, and the will to stand out starts to bloom. Normal players and hardcore gamers refer to themselves with pride and are not inclined any longer to be criticized about their skills. Recollecting the feelings experienced in a raid, Abraxas speaks of the incomparable emotions of being admired: "*It happened in the Throne of Thunder with a casual group... The party was wiped out for the third time by the boss, 'cause the other tank wasn't up to*

controlling the adds… Suddenly, I took control, doing alone the job of two tanks… The others were completely amazed, I felt like a god".

Features like dungeon finder and raid finder allow players to perform in small temporary groups made up by people that do not know each other, while adds-on like Omen expose the statistics of the characters, showing in real time the players' performances to the other party members. This gives high visibility to players as they were acting on a scene, while all the aspects that are not related to their in-game performances can remain concealed. The absence of pre-existing relationships among group members and the limited life time of the groups push players to perform as good as they can to leave a good impression on the others. While beginners are motivated by peer pressure, as their experience increases, players start to be pushed by the need to stand out and be noticed, finding enjoyment in showing their abilities in public. We must remember, though, that there is always a fast and easy way out: as long as they remain temporary stages of performance, players can quit in every moment, when pressure, judgments and criticisms become an unbearable burden.

4.4 Self-organization

Abraxas, guild officer for years and then master of Guardians of Apocalypse, on the rules he contributed to establish in his guild says*: "Our guild especially rewards ability of members and their dedication during raids... Loots are parted on merit base*". He adds: "*This method has pushed all of us to way more skilled, even if I must admit that quarrels aren't rare… often one player thinks he shined over the others, but what he feels is not how we judge… only deeds count*". Vania, a The Blood Angels officer, talks about a different conception of the relationships in her guild: "*In our group the most important things are diligence and obligation... We have to gain the drops with our presence in the raids. Each evening you play gives you some raid-points, unexcused absence makes you lose some, and then you can exchange them with the boss drops*". Herik, founder of his own guild, The Knight Templars, and then member of the most powerful guild of his server, The Unknown, explains that what really counts is the good of the group: "*When I was the master, the unique criterion in partying the loots was the need of the guild... I had to reinforce the whole group for the sake of game advancement, and every specific equipment had to be addressed to reinforce those characters that could improve the next raid*".

These three different attitudes show how the structure of social permanent groups in WoW varies in accordance of the needs and the desires of its players. Masters and officers have the opportunity to shape a group (e.g. more or less hierarchical or egalitarian, with or without entrance barriers, and so on), while players can choose from a wide variety of group types, for the ones that most fit their values and beliefs. Herik, for example, left the role of guild master to join another guild, to experiment with a more competitive environment, one devoted to the progress in the game. Neyr changed four guilds before reaching stability in a group where hierarchy is flat and the main value is represented by generosity instead of competition. Daemon explains a different point of view, highlighting how his group is addressed simply at playing together for fun's sake: "*I play, enjoy it… that's all*".

WoW allows players to join permanent groups, the guilds, prescribing their general structure (e.g. a formal hierarchy made up of a master, some officers and all the other members) and offering some features (e.g. a bank, a chat channel, an emblem), while giving players the possibility of shaping the relationships within them. Some groups are organized around a centralized control, others are more democratic; some require members continuous efforts in pursuing the group goals, others are open to free participation and are more oriented to social relationships; some are addressed to hardcore gamers, requiring specific abilities to obtain the membership, others are open to all and better satisfy the needs of casual players. This sort of self-organization determines a large variety of social

structures and provides the player with the opportunity to find the group that best fits her needs and, at the same time, to found an own group shaped on her values and beliefs.

4.5 Cooperation and friendship, competition

Notes of January 6th, 2014

It was Monday when I became officer of The Emperors. That day I found myself wondering about my whole social experience in WoW up to that moment. My first attempts at socializing, as I was recalling them, were meant to fail. I was not used to online gaming and it always sounded strange to me to request help from others in accomplishing in-game missions. So, until I reached the level cap, I played almost alone. I entered and left four guilds in five months, without becoming effectively part of any of them. Suddenly, by chance, when I was with a casual group in the Vale of the Eternal Sorrow, I met Derkes and Axial. After chatting for a while they invited me to join their guild. I left my previous one with no regrets, it had no meaning for me. In the subsequent months, I started chatting with three other members of the group, Kairos, Neon and Elin. I felt free to talk with them even of my private life, and progressively so, I began to think those could be friendships beyond the game world. Then, slowly, I began to "feel" the values and the goals of the guild as mine, thinking that I would never have left it.

The joy of cooperation in reaching a common aim is highlighted by almost all the hardcore gamers and normal players interviewed and is exemplified by Vega's experience, who recently joined a guild that changed the way she sees WoW. In stressing the importance of having a role in reaching the common good, Vega expresses what the majority of participants think about cooperation in WoW: "*We are all playing for a shared objective, progressing in game and becoming better group players. Cooperating in real life is not as simple as in WoW where everyone has a function... Each of us shares the items that she is able to produce… I cook*".

However, as shown in the episode above, personal connections can strengthen the bonds between group members. Leaving a guild is extremely easy, a few digits in the chat window (i.e. /gquit) and it is done. Friends glue players to a specific group, and, by and large, to WoW as a whole. Almost all participants suggest that WoW, by creating in-world strong relationships, has fostered their involvement, increased their playing frequency and enhanced their enjoyment. Kylian explains how he started to be drawn in: "*what makes the difference between two guilds is how you feel with your companions... If you make friends, WoW becomes a place where to meet, like going back home*". Instead, Nika has a story about why she left WoW two years ago, after five years of intensive play. She speaks nervously, quickly moving her hands, when she reminds the delusion that led her to leave WoW: "*I think that something broke in my group. Many of my friends stopped playing for some real life reasons and the atmosphere in my guild changed... First I made some attempts at joining other guilds, but I have never felt at home anymore… Maybe I lacked will power to start anew, so I quit the game*"

If cooperation and friendship are essential within the group, competition between groups is one of the main aims of the end-game stage. Although it is possible to battle directly against other groups, as in battlegrounds (i.e. instanced areas used for player versus player combats), guilds can compete with each other in completing the game contents as fast as they are made available by Blizzard. Herik, in fact, highlights how being the first in completing a raid represents a "*badge of honor*", as Blizzard decreases the difficulty of the raids as time goes by and rankings and accomplishments are posted in wowprogress or in self-managed forums. This form of competition does not prevent cooperation among groups, as Herik points out when recalling how he merged his guild with another one to defeat Kael'thas, the last boss of The Eye raid.

This mechanism also seems to limit the aggressive behaviors that may come from a direct battle between two groups. In fact, Ilynx stresses that the direct clash of two guilds results with the

suppression of one of the contending parts. This happens when competing for limited resources: for example, when two guilds are competing for engaging a battle with a world boss[4]. Instead, competition for being the first leads mainly to self-improvement, as "*You have only to think to better your group abilities and coordination*", Ilynx says. However, WoW doesn't foster the direct battle between guilds, as, even on PvP servers, "*There is no incentive* - Ilynx says - *in settling an entire team for PvP*".

On the other hand, Herik doesn't hide how his actual belonging to The Unknown has changed his reputation in the game: "*The prestige of our guild is a reason of proud for each one of us... Personally, when I wonder around in the land of Azaroth I find a lot of respect for my character… because it is part of The Unknown*".

WoW promotes the identification of players in groups, by offering features that expose their members to a constant flux of information about their group, e.g. through the guild chat, and encourage the setting of self-managed spaces of discussions, such as forums, in order to organize the action. A group identity is fostered mainly by providing common tasks and purposes (accomplishing the end-game raids at maximum level of difficulty), which require optimal coordination and cooperation among players with different roles in order to be accomplished.

Nevertheless, to glue players to a specific guild, WoW also favors the development of interpersonal relationships among members, providing private spaces that support their self-disclosure (e.g. allowing users to whisper each other), exposing them to the others' activities (e.g. showing the achievements of each guild members as a "news feed feature" in the guild window), allowing them to have fun together (e.g. chatting and joking when they are doing burdensome tasks).

Supporting competition between groups, on the other side, enhances cohesion and player motivation in putting efforts into group activities. By clearly indicating the character's association to one group (i.e. showing the name of one's own guild nearby the name of the character), WoW allows players to enjoy its prestige and exploit its reputation to gain respect from other players, basking in reflected glory. At the same time, by not fostering conflicting interests in obtaining scarce resources, promoting mainly a challenge "against the game", in which each group strives to defeat the game before others, and showing their ranking in a dedicate space (wowprogress.it), WoW mitigates social conflicts and does not prevent at all cooperation between groups.

4.6 Freedom, journey

Throne of Thunder: Notes of February 19th, 2014

My group had just been wiped out in the Throne of Thunder. Five hours of total immersion after hours of planning with the other officers. Rethinking to my whole experience in WoW, it was impossible not to notice how my engagement, motivations and in-game behaviors changed over time. Initially, my game experience was mainly represented by solo adventuring. My unique motivational trigger was gaining experience points. As time went by, things slightly changed, as exploring new zones, discovering new dungeons, experimenting professions and choosing quests became more important to me: level progression remained a constant concern but I found a more engaging experience in enjoying the freedom that the game was offering to me. However, reaching level 90 didn't change immediately my way of playing. At first, I just devoted myself to improve and master my character using the raid finder: peer pressure was high but as long as I kept playing I became aware that I was good as others, maybe even better. Finding some friends in my guild changed again my experience. Then, slowly I began to feel more responsibility and commitment to

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[4] A world boss is a raid boss-level that appears in the shared game world. It is designed to be fought by a large group of players. When two guilds are after the same world boss, it happens that they fight for it, as the battle can be engaged only by one group at a time and the boss has a specific spawn time.

my group. Becoming an officer drew me closer to the organizational and tactical aspect of the game, extending my stay in ways I did not imagine before.

As the episode above shows, WoW solicits different motivations during the player journey, satisfying her different needs and desires. Novices, like Elys, clearly describe how the first phases of the game are centered around the need to survive and progress as fast as possible. Macross specifies how experience points are essential in the first phases of the game: "*At the moment I'm only interested in leveling up*". However, as experience raises, players show to be looking for something different, and WoW is able to support their different motivations to play, fostering a variety of intrinsic motivated behaviors, as we have already seen in the previous sections. While for Abraxas *"the only thing that matter is your competence"*, for Herik it*"is the fact that you play together, with your friends"* that counts. Instead, Ilynx remarks the importance of being free to be whatever you want, while Herik stresses the relevance of freedom in building up your ideal community where he "*can decide the rules and manage the resources autonomously*".

This sense of autonomy is a constant in players' discourses. Even a novice like Tyran highlights how the sensation of freedom is important when playing: "*There are so many areas in Azeroth that aren't adequate for my level... but sometimes I try to get there, only to see how they look like... I run run run and get killed, but it's fun because I can explore what I want*". However, as the stay in WoW increases, players show to more and more appreciate the sensation of being in another reality full of possibilities. This is resumed in the idea of "world" as in Kylian's words: "*WoW is a parallel world, where I can live another life. You can interpret it as you want, live it freely and choose your path... There is always something to do*".

As we have detailed in the previous sections, WoW is able to elicit different motives in players, satisfying their need of competence, autonomy and relatedness. In the first phases of the game, WoW rewards its players mainly with extrinsic rewards (e.g. experience points), immediate responses to the players' endeavors. As the players' experience increases, then, WoW stimulates players' intrinsic motivations. Rewards, such as equipment and mounts, become evidences of the players' increased abilities, while skills can be shown in temporary scenes under the others' eyes, who can recognize players' performances; others, from an initially sheer presence, turn into companions to collaborate with and friends to be connected to; and the whole experience in Azeroth, from a series of tasks to accomplish in order to survive, changes into a journey in a world full of possibilities that can be freely chosen.

In fact, freedom and constraints, wisely balanced, allow players to experience an adventure full of sense, in its double acceptation as "meaning" and "direction", and, at the same time, to clearly feel the freedom of doing and becoming what they desire, in a world that make a range of opportunities available to them. WoW influences the player journey requiring, for example, certain level of experience to survive in particular areas: however, it doesn't impede the exploration of these areas at players' own risks. Furthermore, the overabundance of quests, dungeons, professions, achievements, challenges, which do not have to be accomplished in sequence or in their totality, but can be perceived as present and not yet completed throughout the exploration of the game world, makes players feel the power of choosing their direction and therefore determining their experience.

5 RECOMMENDATIONS FOR DESIGN

In this section, I want to move from the concrete findings yielded by my empirical work to the definition of a series of recommendations for the design of interactive systems. Each recommendation refers to a specific section of the results described above. Although they are supported by a rationale based on psychological literature, most of the arguments that ground them can be retraced in the specific result section which they refer to. These recommendations mean to enhance user engagement, increase her motivation in participating and performing in a given

system and trigger and support processes of behavior change. Some of them are specifically devised to suit the design of online communities or applications that pivot on social features and user social participation. Others are aimed at imagining new forms of online communities that take inspiration from the social structures found in the world of MMORPGs, trying to channel the potential engagement that they may generate. Others are addressed more to those interactive systems that aims at changing user behaviors e.g. towards more sustainable and healthier lifestyles. However these recommendations are left on purpose at a sufficient level of abstraction to be adapted to different services, technologies and applications. They at times overlap or are thought to be applied in combination, at times are meant to be mutually exclusive. Following Hekler (2013), we consider these recommendations as "design hypotheses", which will require additional testing for proving their validity.

Recommendation 1a. Identification and empathy. Mirror the user with an image that she can recognize, at the same time, as herself and as else, favoring user identification with her representation and simultaneously making her feel a sense of empathy that leads her to take care of it.

Rationale. Research suggest that there is a great variety in the range of player-character relationships, and in the ways that players view their avatars (Livingston et al., 2014). Avatars give the user the possibility to reflect and identify herself in an alter ego. Avatar identification has shown to be positively correlated with enjoyment in games (Hefner et al., 2007) and satisfaction and retention in virtual worlds (Ducheneaut et al., 2009).

At the same time characters can be thought in value terms, like utility or personal investment, as if they were independent people: as long as a player has spent time developing one specific character, she can establish an emotional attachment to it (Livingston et al., 2014). This emotional bond can be seen as an empathic relation, and research on virtual agents show how the ability to trigger empathic reactions in users could bolster the interaction with computers, inspired by the way humans interact with each other (Paiva et al., 2004).

This recommendation aims at suggesting new forms of user representation in interactive systems by taking advantage both of user identification and empathy, which characterize the relationship between players and their avatars in WoW. Providing representation of users in which they can project themselves may enhance their immersion, retention and enjoyment in using an interactive system. At the same time, giving users the possibility to evolve their representations along different parameters and dimensions, depending on their actions and behaviors, is a way to create a sense of care towards them, which can lead to an emotional attachment. The development of this empathic relationship between users and their own representations, supported by a strong personal investment, may enhance user interaction with the system.

Recommendation 1b. Past and future selves. Provide user with a representation of her past and future selves along her present self, in order to trigger behavior change processes. Past can favor user reflection about the choices she made, the objectives she achieved and the transformations she produced on her own identity in time. Future can trigger behavior change strategies by presenting ideal states that the user can tend to.

Rationale. Self-monitoring, the activity of observing and recording one's own behavior (i.e., actions, thoughts and emotions), is an assessment method used in clinical psychology (Elliot et al., 1996). Self-monitoring can be used as means of intervention to stimulate behavior change dynamics, since the process of recording one's own behavior causes the behavior to change, often in the desired direction (Miltenberg, 2007). Recollecting past behaviors, tracked through this technique, can favor the consciousness raising, in order to develop realistic changes, e.g. to

individuate potential triggers of undesirable behavior patterns and plan strategies tailored to them (Rosal et al., 2001).

On the other hand, it has been shown how avatars that represent users' future and ideal images can serve as a self-model for motivating their offline behaviors (Kim & Sundar, 2012): showing both avatars based on current user behavioral data and ideal versions of them, representing the user's possible future self/selves, could motivate her to put forth her best effort in achieving such ideal images, maintaining, for example, healthy lifestyles.

This recommendation aims at suggesting behavior change strategies based on the presentation of user's representations that embody her past and future states. As WoW promotes reflection on the changes players produced on their in-game identity (e.g. evoking memories through the character's equipment), recollecting past actions and behaviors, through representations in which users can recognize their past selves, can foster self-reflection, providing self-knowledge and potentially driving to behavior change processes. Furthermore, providing ideal images that represent possible future users' states, by showing the gap from their current situations (e.g. by indicating a series of attributes to improve, as in WoW), can bolster users' endeavors in reaching such desired states.

Recommendation 2. Rewards. Provide meaningful rewards that incorporate some kinds of values for users. While aesthetic values can leverage the users' desire for appearing, and instrumental values can exploit their need of power and achievement, social values can trigger engagement based on the need of being recognized by others. Recompense users for their competence through a class of valuable rewards as a way to recognize their skills, enabling mechanisms of self-improvement based upon users' intrinsic motivations.

Rationale: Rewards, like points and badges, are not meaningful per se. They are representations that stand for something else. If this something is missing, they become meaningless and can only engage mechanical behaviors or be rapidly discarded. Even from the perspective of a behaviorist token economy, what is rewarding is not the token itself, but the backup reinforcers that can be exchanged with the token (Cooper et al., 2007).

This recommendation stresses how finding values that can give meanings to these representations should be one of the main aims of gamification strategies and how designing a reward system based on competence could enhance users' intrinsic motivation. Expectancy-value theory (Wigfield et al., 2009) states that people are motivated to make choices based on their beliefs on the possibility of success and the expected value they could gain. By combining aesthetic, instrumental and social values we can create complex rewards that leverage different needs and desires in users, motivating them in different ways.

Among these, competence is a fundamental psychological need that can energize human activity and maintain intrinsically motivated behaviors, and must be satisfied for long-term psychological health (Deci e Ryan, 2000). Research found that when the level of reward reflects ability (higher rewards are given for greater skills), higher rewards lead to greater intrinsic motivation; on the other hand, when rewards are not directly linked to ability, higher rewards lead to less intrinsic motivation (Rosenfield et al., 1980). From this point of view, rewards can be meaningful if they are designed to stand for skills that users consider important to acquire and master, and not when they represent and reward goals that do not require any specific acquired (or otherwise) ability (e.g. doing check-ins by pressing a button and being rewarded with badges, like in Foursquare).

Understanding which skills or knowledge users consider valuable, in a particular domain, should be a primary concern in designing a reward system based on competence. Then, giving differentiated and tailored rewards for specific abilities, which users may show to others, is a way to recompense their certain endeavors in performing and participating in particular tasks, fostering their motivation to improve or acquire diverse skills.

Recommendation 3. Social presence. Enable users to perform in front of others: giving users a temporary stage in which they can become known by a small audience can have a positive influence on their motivations and performances within the system. Leverage peer pressure to motivate novices in improving their performances and allow expert users to stand out from the crowd supporting their desire to excel. At the same time, give users the possibility to hide the information that they do not want to show and escape when they think that others have violated their private space.

Rationale: Goffman describes how people usually perform for an audience: these performances happen in a front stage, while in the backstage the performer can relax. Individuals usually control the access to the backstage (Goffman, 1959).

This recommendation highlights how to enhance user motivation to perform and participate within an interactive system by leveraging the social presence of others. By allowing users to join small temporary groups, in which their performances are constantly exposed to others' judgments, through performance comparison mechanisms, we can establish a mutual monitoring, as happens in WoW when players perform in groups that are randomly built: this is a form of peer pressure that can positively affect individual's efforts especially when is enacted in very small groups (Kandel & Lazear, 1992). In such groups novices can feel the pressure of their peers and the sensation of being constantly under examination, and become strongly motivated to avoid shame (Kandel & Lazear, 1992). On the other hand, expert users can be motivated by their desire to excel and be admired, feeling the excitement and the enjoyment of expressing their mastery in front of others: in fact, need for attention and for standing out from the crowd is one of the basic desires that can motivate individuals (Reiss, 2004).

However, users should always have the control on their performances, deciding which kind of data should be exposed and which concealed. Furthermore, users should always have the possibility to leave the group, as a way of escape, and join another one, where to show their skills. This can give them the certainty that their backstage will remain under their control, as happens in WoW where players can always avoid the excessive pressure that may arise by the constant exposure, by exiting the group they are in.

Recommendation 4. Self-organization. Give users the opportunity to self-organize their groups, providing a general structure that can be freely shaped in different ways. Allow users to choose the group type that better satisfy their needs and desires, supporting the proliferation of a variety of opportunities.

Rationale. Individuals look for groups that might contribute to the satisfaction of their personal needs: the choice of a group derives from an evaluation process that tries to determine the probable rewardingness of membership in that group (Levine & Moreland, 1994). Factors like prior experience in other groups can influence this process (Pavelchak et al., 1986). Members of a group can either participate effectively and enjoy under one type of social structure, or feel threatened and be frustrated by having to participate under another type of structure (Wilson et al., 1975). Motivational orientation can influence the personal experience within a group and thus the productivity of the group itself: for example, safety-oriented persons are likely to be most rewarded by the group process generated by a hierarchical structure, while esteem-oriented subjects are likely to be most rewarded by characteristics of the egalitarian structure (Wilson et al., 1975).

This recommendation suggests to support the proliferation of different social structures within an online community, taking inspiration from how players are able to organize the guilds in WoW. Giving users the opportunity to found and organize their social structure, by providing only a general structure to it and giving the faculty to determine details (e.g. the enrolment modalities, the

grade of steeper hierarchy, the type of participation required, the type of rewards that members can obtain), opens the horizon to new forms of online communities, composed by a variety of different and self-organized groups that satisfy different needs and desires.

In said variety of groups based on different social structures, users are given the possibility to find a match between their motivations and the social environments they belong to, maximizing the engagement and the enjoyment that different users may experience in participating in a community.

Recommendation 5a. Cooperation and friendship. Allow users to become part of a group and promote their identification in it, by fostering cooperation among members. Set objectives that can be accomplished only by groups, differentiating the roles of their members and making users feel essential. At the same time, support users in developing interpersonal bonds: friendships among group members can strengthen the sense of belonging to a specific group and enhance the enjoyment of the interaction.

Rationale. Feeling of attachment to a community can arise through common identity, whereby members feel connected to a group's purpose (Tajfel & Turner, 1986), or from interpersonal bonds, when individuals develop relationships, such as friendships, with other members (Prentice et al. 1994). In online communities common identity can be encouraged by splitting users in subgroups, promoting interdependence within the subgroups through joint tasks or common aims and supporting intra-group communication through features that allow public discussion; besides, interpersonal bond can be supported by increasing users' familiarity as individuals and facilitating interpersonal communication through private channels (Ren et al., 2013). Affect generalization is a phenomenon, in which affect towards one entity spreads to related entities: both the common identity based attachment and the interpersonal bond based attachment can be transferred, through affect generalization, from the subgroup or from the individuals, to the larger community which user belongs to, increasing user engagement and participation in the whole community (Ren et al., 2013).

Usually online communities support either common identity or interpersonal bonds: they can be divided in identity-based communities, with a mission to exchange information about defined topics, and bond-based communities, where a primary goal is to promote relationships among individuals (Ren et al., 2007).

This recommendation shows how it is possible to virtuously join these two types of attachment in an online community, simultaneously exploiting their positive effects on user engagement and motivation. Dividing a community in subgroups and supporting the interdependence of their members through joint gamified tasks or common aims can foster cooperation among users, providing a greater sense of belonging through a common identity, which in turn can result in an increased motivation to participate to the activity of the community.

However, when subgroups are numerous and varied a user can leave one for another easily when difficulties arise, and this might prevent her identification in the subgroup's purposes: friends, as WoW shows, work as glue holding users in a specific subgroup, allowing them to gradually interiorize its values and aims and providing a more enjoyable experience. Giving subgroup members private communication channels and allowing them to increase their familiarity as individuals can support the development of friendships and increase the enjoyment of the interaction. From this perspective, common identity attachment and personal bond attachment can mutually strengthen themselves, finally resulting in a deeper attachment to the community.

Recommendation 5b. Competition. Allow competition among groups, favoring inter-group comparison but avoiding to support conflicting interests, which can result in aggressive behaviors.

Associate user reputation to that of her own group, enabling the transfer of the group's prestige to each of its members.

Rationale. Individuals strive towards a positive self-concept and the value connotations of the groups which they belong to contribute to it (Tajfel & Turner, 1986). The prestige of a group is mainly evaluated through inter-group contrast along some dimensions, such as competence (Brown, 2000), i.e. positively discrepant comparisons between in-group and out-group produce high prestige. From these premises, individuals strive to make the groups they belong to more positively distinct from the relevant out-groups (Tajfel & Turner, 1986), putting particular effort into enhancing the status of their own groups when the presence of out-groups is remarked through comparison (Worchel et al., 1998). Furthermore, intergroup competition also enhances intra-group morale, cohesiveness and cooperation (Tajfel & Turner, 1986).

By creating a reputation system specifically addressed to groups and providing mechanisms that enable comparison between them, users can be motivated in putting effort into improving their own group, cooperating and participating more to its activities. Furthermore, clearly connecting users to their group identity enables the possibility for them to enjoy the prestige of the group they belong to.

While opposed group interests develop, through competition, into social conflict, superordinate goals facilitate cooperation (Sherif, 1967). WoW shows that groups can compete in defeating the game, putting effort in their self-improvement and sometimes cooperating to reach a shared goal; instead, when groups strive for limited resources, they try to annihilate each others.

Allowing groups to compete by being first at reaching hard goals through gamified activities, and not through direct fights to obtain scarce resources, can avoid the development of social conflicts when designing for competition, not excluding, at the same time, the possibility of cooperation among groups. This can satisfy also those users that are not motivated by competitive mechanisms, but which prefer to collaborate for a common aim (Beersma, 2003), resulting in an increased enjoyment and engagement in system activities participation, avoiding aggressive behaviors.

Recommendation 6a. Freedom. Balance constraints and freedom to allow users to make different choices and achieve different goals during their experience with a system. Leave users the idea that a variety of activities can be carried out without predefining their order and the need to accomplish them all. Maintain overarching goals, but lay out different possibilities and diversified paths to reach them.

Rationale. Autonomy refers to volition - the individuals' desire to self-organize experience and behavior and to have activity be concordant with their integrated sense of self (Deci & Ryan, 2000): providing choice (Zuckerman et al. 1978) enhances intrinsic motivation and augments people's confidence in their performance (Tafarodi et al., 1999). This desire to be autonomous is experienced as a feeling of freedom (Reiss, 2004).

This recommendation suggests to give user the possibility to choose which kinds of rewards to pursue, tasks to accomplish and goals to achieve, when designing for gamification. As WoW is able to create the sensation of being in "a world" in which players can act and move freely, choosing their path among a variety of opportunities, gamification should provide users with a sense of freedom that can satisfy their need of autonomy.

Giving the impression that there is always something to do, that many objectives are present and not yet accomplished and that there is not a unique and predetermined itinerary is a way to make users feel able to self-determine their experience. Variety of "gameplay", diversions from the main paths, proliferation of gamified activities, which users can choose from on the basis of their enjoyment, can strengthen users' intrinsic motivations, leading to a more involving and enduring experience.

This freedom should be balanced with a series of constraints to avoid the scattering of user's aims and focus the user attention in specific directions. As gamification has the aim of changing users' behaviors, or enhancing their engagement and motivation in a given system, without loosing the connection with the context to which it is applied, constraints should be put in place to orient and drive users' actions.

As WoW provides clear paths and goals at the beginning of the game (e.g. reaching the level 90), constraints should be more present in the first stages of the user journey, where users have to "learn the system" and are more likely to be puzzled by an excess of opportunities. Guided trails, chains of gamified tasks, requirements to perform certain tasks and overarching goals can drive and give continuity to the user experience, without leaving the sensation of being compelled. As long as users' experience increases, these constraints can progressively decrease, giving the users the opportunity to satisfy the needs and desires closer to their personal disposition.

Recommendation 6b. Journey. Plan varied types of rewards and different persuasive strategies to support users' engagement and behavior change, depending on their current motivational stage.

Rationale. Most technologies for behavior change use a "one-size-fits-all" solution, providing the same feedback to different users at different stages of readiness, willingness and possibility to change: but users hold different attitudes, beliefs and values, and are motivated by different things (He et al., 2010). Intentional behavior change does not occur as an event, but rather, as a process in a series of stages as defined by the Transtheoretical Model (TTM): people move from being not intending to take action, to considering the possibility of change, being intending to make the change, taking action and maintaining the change over time (Prochaska &Volicer, 1997). Motivation is required for moving through the stages, but different types of motivations can be associated to different TTM stages (Ferron & Massa, 2013).

This recommendation suggests to provide users different motivational triggers at different stages of their experience with a system. As WoW shows, different types of motivations, from extrinsic to intrinsic, should be elicited during the user journey, to maintain motivation to a certain level. Designing gamification taking into account the different experiences users may encounter in time, during the usage of a system, means to design and provide different feedback, rewards, tasks and "game design elements", depending on users' motivational stage, supporting the transition from extrinsic motivations to intrinsic motivations in a coherent user journey.

In the early stages of experience, users should be motivated mainly by extrinsic rewards that can provide an immediate feedback to their behaviors, highlighting their progress towards defined goals. As their experience with the system progresses, users should benefit from other incentives that build on their intrinsic motivations, such as the satisfaction of needs of competence, autonomy and relatedness. Rewards should begin to represent a recognition of users' skills. Others should begin to satisfy the desire to be connected with people. Activities should begin to diversify in order to please the need of autonomy. Taking into account the temporal evolution of the gamified user experience, and the different motivational stages that users go through, can enhance not only their engagement and motivation, but also the processes of behavior change triggered by technologies, for example, aimed at promoting healthier or more sustainable lifestyles.

6 CONCLUSION

Results of our ethnographic study highlighted some design elements and social dynamics of MMORPGs that are able to deeply engage their players, motivating them to participate and addressing many of their in-game behaviors. We identified 9 recommendations to inspire the gamification design of interactive systems in non-game contexts, drawing on the findings gathered

in our empirical work and additionally supported by motivational, social group and behavior change literature (see Table 1).

N.	Recommendation	Examples of elements found in WoW	Examples of supporting Literature
1a	Identification and empathy	Character customization, role playing; Character evolution	Avatar identification (Hefner et al., 2007); Empathy in virtual agents (Paiva et al., 2004)
1b	Past and future selves	Character's history through its equipment; Character's attributes to be improved	Self-monitoring (Rosal et al., 2001); Future avatars (Kim & Sundar, 2012)
2	Rewards	Items, mounts, equipment with different values; Competence-reward connection	Expectancy-value theory (Wigfield et al., 2009)
3	Social presence	Pick-up groups, add-ons for exposing players' stats, leave party.	The presentation of self in everyday life (Goffman, 1959) Peer pressure (Kandel & Lazear, 1992) Need for attention (Reiss, 2004)
4	Self-organization	Self-organization in guilds, proliferation of different guild types	Motivational orientation (Wilson et al., 1975)
5a	Cooperation and friendship	Guild chats and forums, common aims; Private chats, whispering, newsfeed	Common identity and interpersonal bonds (Ren et al., 2013)
5b	Competition	Challenge against the game; Indication of character's association to one guild	Superordinate goals (Sherif, 1967) Group reputation (Tajfel & Turner, 1986)
6a	Freedom	Freedom of exploration, overabundance of quests, professions and achievements	Autonomy (Deci & Ryan, 2000)
6b	Journey	Experience points at firsts; Then items, instances and friends, choices	TTM (Prochaska &Volicer, 1997)

Table 1. Recommendations for design

These recommendations can address some of the critiques towards the current gamification techniques. They suggest to support the development of intrinsic motivations, producing cognitive, social and emotional drives, instead of fostering mechanical behaviors through extrinsic rewards. They also propose new and diversified game elements, instead of relying on the most common PBL triad. Finally, they recommend to look at systemic design strategies, going beyond the addition of stand-alone game elements.

Recommendations 1a and 1b address the improvement of the user's digital "images", by proposing representations that are able to evoke her memories and drive her behaviors towards specific models, eliciting identification and empathy. Recommendation 2 aims at surpassing the idea of *pointification*, by proposing to look at meaningful and diversified rewards, which capsule a variety of values and reflect the user's competence. As elements like badges seem to fail in arising psychological effects, such as social comparison, in non-hedonic environments (Hamari, 2013), recommendation 3 proposes to look at more comprehensive design strategies, which exploit the users' social presence for increasing their participation and performances.

Recommendation 4 suggests to support the proliferation of diversified social structures in a social environment, to satisfy the different needs and values of different users, in order to imagine novel gamified systems and online communities that foster different kinds of social interactions. As the enhancement of users' participation in social networks through points can decay over time (Farzan et al., 2008) or disappear as soon as the extrinsic rewards are removed (Thom et al., 2012), recommendation 5a proposes to exploit both cooperation among groups and friendship between individuals to glue users to a social environment for a long time. On the other hand, as competitive current gamified systems can motivate some users, but can also discourage others (Nicholson,

2013), recommendation 5b suggests to not support conflicting interests when designing for competition, but to promote the inter-group comparison, tying the user reputation to that of her own group, and provide goals that can be reached also with the collaboration of other groups.

Finally, recommendations 6a and 6b point to the need of surpassing the use of the easy, certain and boring aspects of games (Bogost, 2012), which characterized gamification as *exploitationware*, by providing the user with a diversified and rich experience, making her feel a sense of freedom, progression and choice: these recommendations propose to go beyond the exclusive employment of extrinsic rewards, by supporting intrinsic motivations in the advanced stages of the user journey,.

All these recommendations were left at a high grade of abstraction to inspire different design and be applied to different fields.

For example, design recommendations related to user-self perception could be used by persuasive technologies (Fogg, 1998) to inspire new behavior change strategies, but could also be exploited by personal informatics systems, which help people collect personally relevant information for the purpose of self-reflection and self-knowledge (Li et al., 2011), to reinvent the way in which they track, manage and display human behavior data. I am aware that these recommendations do not address all the insights I found in my empirical research. Some different recommendations could be designed on these results and we hope that our findings will inspire other research in the future. I tried to take the first step in this direction, with suggestions aiming at opening spaces of reflection that are deserving of further investigations.

I also wanted to propose a new way for finding new "game design elements" able to be employed in interactive systems not directly addressed to entertainment purposes. By starting from the players' point of view, I proposed to carry out an ethnographic research in a video game environment to discover which kinds of elements can have effect on people's engagement, motivations and behaviors. By going down this path, I was able to identify what could be translated, with appropriate transformations, in other non-game contexts. I selected the MMORPG genre, and WoW as its ideal representative, to focus my research, but in the future other empirical work could be done in other videogame worlds to find other novel design elements. I believe that this work will help developers, designers and researchers to imagine and foresee which kind of contribution gamification could give to the design of interactive system in the close future.

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