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AFFORDANCES IN AVATAR CUSTOMIZATION AND CREATIVE PLAYER EXPRESSION

A Case Study of Nexon's *MapleStory 2*

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ABSTRACT

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Videogames have developed from arcade experiences spanning a mere few minutes to immersive experiences that are of comparable social and cultural significance to film or literature. This thesis explores a crucial element of player user experience of contemporary videogames: the use of avatars. In the vast majority of games players either construct digital identities for themselves or adopt predefined avatars which they can relate to and through which they interact with videogames and other players.

This thesis examiners how the use of avatars in videogames reflects the standards and ideologies of their designers, for example concerning gender identity and expression. This study will explore how these design decisions impact player experience by focusing on the creative and inventive ways that players use avatars to express various elements of their offline identities in the game *MapleStory 2*.

The game in question is a South Korean massively multiplayer online role-playing game that was developed and published for global audiences in 2018 by Nexon. The case study of *MapleStory 2* uses qualitative analysis. Data was gathered primarily through approximately 500 hours of gameplay and secondarily through official patch notes released on the Steam digital distribution platform. This thesis reports on the creative use of avatars by players. Avenues of gameplay that did not grant the player any particular strategic advantage, and offered multiple options of completing the same action were selected for analysis. They were then examined in terms of the range of options, implications of real-life constructs dictating them, and their effects on observed player behavior.

The results indicate that game design based on norms borrowed from the offline world may unnecessarily hinder creative player expression. For example, avatar and equipment division by (binary) gender both halves customization options for players and reduces the number of digital items that are on sale for potential customers.

Keywords: MMORPG, online gaming, avatar, identity expression, customization, gender identity

Preface

I would like to thank university researcher Thomas Apperley, without whose careful supervision this thesis would never have been completed. I would also like to thank all my classmates from the thesis seminar for listening to my rants about the topic since its conception and providing feedback and advice throughout the semester. And last but not least, the quality of this thesis would have suffered immensely without the help of university lecturer Kati Alha, whose contributions prevented some truly unfortunate blunders.

This template was adapted from the template used at the University of Eastern Finland.

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1 INTRODUCTION

Spacewar! (1962), is a particularly important game in the early history of pre-commercial videogames. Among other important attributes, it was also the first multiplayer game where each player had a clearly identifiable avatar (Rehak, 2003). Of course, videogames as a medium have come a long way in the more than fifty years since *Spacewar!* was developed. While at first the player acted upon the game world in the role of several pixels resembling a spaceship or a yellow mouth like in the case of *Pac-Man*, videogames have evolved to allow designers to develop complex mechanics, gameplay, and narratives. As a result, many videogames now have a fully fleshed-out protagonist character whose role is assumed by the player. Sometimes these characters have their own prescribed personality, traits, and abilities (e.g. Lara Croft in *Tomb Raider* by Core Design), while other games emphasize player choice in the customization and design of avatars (e.g. the popular *Dragon Age* series of games by BioWare).

This thesis examines a genre of videogames that has become a playground for user-defined avatars: massive multiplayer online role-playing games, or MMORPGs for short. MMORPGs typically invite a player to explore a graphically represented open fictional world populated by other players and computer-controlled beasts and people. The games generally employ one of three distinct business models: free-to-play, in which the game is offered to players for free and all revenue is gained from in-game microtransactions (for example *FlyFF*); a model where access to the game is granted indefinitely following a one-time payment (*Guild Wars*); and a monthly subscription model, which relies on monthly fees to generate revenue, each payment extending the player's access to the game for 30 days (*World of Warcraft*).

In MMORPGs, the player is typically allowed to customize the name, skills, appearance, and potentially other characteristics of the character they control to suit both their gameplay style and aesthetic preferences. The character is often referred to as the player's avatar. The word "avatar" originates from the Sanskrit *avatārah* meaning "descent", which originally referred to an incarnation or embodiment of Hindu deities (Holzwarth et al., 2006, p. 20). The term was adopted by the videogame medium to denote virtual personas in 1985 and later widely popularized by the cyberpunk novel *Snow Crash* in 1992 (Aldred, 2014, p. 356). Since avatars in MMORPGs are typically customizable, players can choose to invent a completely new identity for themselves in the game, use the options available to create an avatar who shares similarities with the player, or

combine their features with adopted ones to a lesser or greater degree. For example, female players might make their warrior in a fantasy game a woman, and those women who identify somewhere on the LGBTQ spectrum might pick a female in-game love interest. However, many videogames offer only a very limited range of outlets for self-expression through avatar customization. For example, the original *Pokémon* games (developed by Game Freak and published by Nintendo in 1996), although classified as RPGs and thus composed of many of the same mechanics as MMORPGs, only allowed the player to experience the game in the role of a male character. The sequels have been gradually expanding upon their affordances in gender expression by first adding a female counterpart and later skipping the traditional "Are you a boy? Or are you a girl?" question at the beginning of a *Pokémon* adventure altogether and instead asking the player to set their preferred "style" out of a selection of 8 ready-made avatars. As this example illustrates, innovation in game design does not just concern technological breakthroughs that allow for visual, auditory, and even haptic realism. It also concerns acknowledging the changing perceptions of the player as a participant in the game experience.

The degree to which players are able and encouraged to personalize their interaction with the game varies. Some videogames allow for different ways of solving the same problem, for example overcoming enemies through stealth, combat, diplomacy, or using environmental hazards (such as in the *Elder Scrolls* series of role-playing games designed by Bethesda Game Studios, 1995–present). In some cases, games even offer several entirely different conclusions to the game's plot (such as in the 2015 title *Undertale* by Toby Fox). Others take customization to unprecedented levels, allowing players' imagination to run wild within a continuously shifting boundary set by technology and game developers (e.g. *Happy Wheels* by Fancy Force). This level of customization is prevalent in online games, due to the importance of avatars in those games. In MMORPGs, players can see visual representations of everyone else playing the game at the same time on the same server. Therefore, they need to differentiate their avatar among a large number of other avatars in a complex and continuously evolving virtual world.

Research for this thesis consisted of approximately 20-30 hours per week over a period of 5 months spent playing *MapleStory 2*, a South Korean free-to-play MMORPG that was released by Nexon for the global audience in 2018.[1] Like many contemporary MMORPGs, *MapleStory 2* allows players to customize their avatars extensively, for

[1] In South Korea, the game was released in July 2015.

instance, the hairstyle or equipment. During this research, one particular encounter solidified my interest in the creative possibilities for avatar design offered by the game. While wandering through Maple world, the setting of *MapleStory 2*, I stumbled upon an avatar named "Jesus." Jesus was a white male avatar with shoulder-length brown hair and a fitting beard, dressed in white robes and carrying a customized codex (in-game off-hand weapon for the priest class) titled "The Holy Bible." Upon meeting Jesus, he invited me and other players in the vicinity to his house. As I was busy with other in-game activities at the time, I jokingly replied that I was "a creature of sin and could not follow him to heaven." Jesus promptly responded by saying that there was hell in his house, too. Amused and intrigued, I agreed to visit and was teleported to the "Church of Light", as Jesus had named his house. I was amazed to see that Jesus – whoever they were in real life – had invested a great deal of effort in creating it. The house was made of two floors, of which the top one resembled an ancient temple with columns and gilded ornaments leading up to a pulpit while the bottom floor consisted of lava, gargoyles, and fiery pits of eternal damnation.

In *MapleStory 2*, each player owns a "house" that their avatars can inhabit. In practical terms, the house is a map that can be built and furnished by them in various ways and visited by others. The owner of the house or map in *MapleStory 2* can assign different rights to visitors, allowing or banning certain actions.[2] I realized that Jesus had configured these rights in a very specific way when I accidentally fell into hell while admiring his temple. I promptly discovered that visiting characters were not allowed to fly on the map. Simply put, I found myself stuck on the hell level of his house. What followed was a short, improvised roleplay session during which my avatar begged Jesus to save her and several other 'sinners' from perdition, upon which Jesus descended to lead his visitors to heaven in the form of a lone hidden portal to the upper floor (the 'trapped' players could have left at any time, but chose not to at that moment). When the visiting characters confessed their sins and agreed to 'follow the light of God,' Jesus proceeded to take a screenshot of all the avatars in the pulpit, asked us to spread the word of his love, and left to gather more followers.

Several factors combined to create the experience I described. First, the game allowed the player to create a character named "Jesus," which was pivotal to the success of their idea. Secondly, it allowed them to create an avatar that closely resembled modern Western

[2] The housing mechanic is described fully in section 4.2.4.

depictions of the biblical figure of Christ by selecting from pre-existing digital items as well as creating their own. Thirdly, it let them set their own rules, a sort of game within a game – namely a space in which Jesus the avatar possessed powers that all other avatars did not. Finally, and crucially, it accommodated the player's capacity for creative expression in connecting all of these possibilities into a single concept. Thus, the player agency provided by the affordances of the avatar was key to creating this experience – one of the myriad interactive stories present within videogame code that game developers themselves had likely never conceived of. However, even in a game like *MapleStory 2*, which has been designed with this level of creative freedom in mind, and where players have freely adopted forms of play which incorporate these practices, there are fundamental constraints which seem at odds with the creative milieu of the game. The encounter highlighted the way everyday decisions in avatar customization have ongoing effects on creative play. The question this thesis addresses is: How are seemingly innocuous choices regarding avatars' aesthetic appearance shaped by 'common sense' understandings of gender, sex, and sexuality? To an extent, the limitations set by extensive customization will reflect the contemporary state of the society that created them. However, enforcement of these borrowed paradigms is at odds with the emphasis on creative play in games like *MapleStory 2*.

As more customization possibilities open up to players, the means of expression form a dividing line between the kinds of identities that are and are not desirable. For example, many games, including *MapleStory 2*, use a gendered equipment system where only female characters can equip female-branded clothes (such as tights and skirts) and only male characters can equip male-branded clothes (such as ties). Such restrictions actively reinforce real-life gender roles and hinder their subversion. Likewise, if a game offers ways to dye an avatar's equipment, the selection of colors may implicitly prohibit certain ways of identity expression by making "undesirable" colors or color combinations unavailable to players. The objective of this research is to examine and assess the boundary between available and restricted forms of virtual identity expression through avatars.

2 BACKGROUND INFORMATION

This chapter gives a brief overview of relevant topics and terms, focusing on the various ways researchers have described the connection between avatars and users as well as concepts of identity and identification in relation to game studies. The research follows a player-centric approach and adopts ideas from the fields of psychology, sociology, and philosophy. This thesis uses observed player behavior and analytic gameplay to explore the relationship between games, players, and the physical world in light of the technical characteristics of avatars in *MapleStory 2*. This relationship is fluid, valuable, and observable. Section 2.1 discusses existing research on player-avatar interaction, while section 2.2 focuses on the different conceptualizations of identity and identification in relation to the videogame medium.

2.1 Player-Avatar Interaction

Recent research has established a connection between avatars and players that originates in, and persists outside of, avatar use (Mancini and Sibilla, 2016; Ratan and Dawson, 2016; Ratan and Sah, 2015; Sioni, Burleson, and Bekerian, 2017). Interaction with a person's avatar, when other information about the avatar user is unavailable, influences one's initial impression of the avatar user across three measures of attractiveness – physical attraction, social attraction, and task attraction (Westerman, Tamborini, and Bowman, 2015). Physical attraction refers to the perception of how attractive the user looks. Social attraction describes the degree to which others desire to engage in social activities with them, such as chatting or playing together. Lastly, task attraction indicates the degree to which others are likely to trust that the user will perform well on a given task. Westerman et al. (2015) discovered a "halo effect", in accordance with which physically attractive avatars are likely to be perceived as more socially and task attractive, despite there being no evidence to support this perception. Moreover, human and cartoon human avatars increase one's confidence regarding the physical and task attractiveness of the avatar user (as opposed to non-human avatars), possibly because the onlooker believes the avatar, even a cartoonish one, shares physical characteristics with the user (Westerman et al., 2015).

Given the influence of an avatar's appearances on their reception by others, it is perhaps not surprising to discover how much effort players exert in creating and maintaining their avatar. This is especially relevant considering that in most modern massively multiplayer

online role-playing games (MMORPGs), player avatars are depicted as highly detailed humans or humanoid creatures (e.g. in *World of Warcraft*, *Guild Wars*, or *Aion*). Whether 'realistic' or cartoonish in appearance, these avatars may be described in similar terms their human counterpart would, e.g. in terms of skin, eye, or hair color, sex, and in some cases even profession. Thus, the concept of avatar self-relevance has been introduced to consider the extent to which an avatar's traits are shared with, or relevant to, the self of the user/player (Ratan and Dawson, 2016). The avatar does not necessarily have to be physically similar to the player to be relevant to their self. Avatar self-relevance is cultivated through emotional connection, embodiment (perceiving the avatar body as an extension of self), agreement between avatar gender and player gender, and finally avatar customization (Ratan and Dawson, 2016).

When players experience a high level of avatar self-relevance, they are likely to adopt traits of their avatar in offline behavior – a process referred to as the Proteus effect (Yee and Bailenson, 2007; Ratan and Sah, 2015). The Proteus effect was originally suggested by Yee and Bailenson (2007) as a counterpoint to previously researched behavioral confirmation exhibited by subjects who alter their behavior to conform to the expectations of another party, the "perceiver." In contrast, the Proteus effect was demonstrated to affect the behavior of participants based on their self-perception and regardless of another's expectations (Yee and Bailenson, 2007). When the theory of persistent effects of avatar use was tested, the results exhibited a correlation between avatar customization and the extent of the Proteus effect (Ratan and Sah, 2015).

Player-avatar identification (PAI) has been shown to strongly correlate with social phobia and internet gaming disorder as defined by the American Psychiatric Association in the DSM-V (Sioni, Burleson, and Bekerian, 2017) when examined using Li, Liau, and Khoo's (2013) model for assessing PAI. The model measures PAI in four dimensions: emotional experiences during play, absorption during play, positive attitudes towards one's avatar, and avatar importance to one's identity, all of which contribute to avatar self-relevance. Furthermore, even if the avatar is dissimilar to the player, it retains the potential to influence the player's behavior. In a study conducted by Ratan and Sah (2015), female players who were given the option to customize their female avatar were susceptible to 'stereotype threat' after play. Stereotype threat refers to involuntary adherence with negative stereotypes regarding a part of one's identity when such stereotypes are perceived in the environment. Since women are often stereotyped as being

less proficient at math than men, players using a female avatar did worse on a subsequent math test than female players who had customized, and thus adopted the 'stereotype lift' or benefit of, a male avatar.

Player-avatar identification has also been connected to improved wellbeing. It has been argued that "virtual worlds enable forms of identity exploration that have positive benefits to users with low self-esteem" (Ducheneaut, Wen, Yee, & Wadley, 2009). A study by Kim and Kim (2016) has shown that avatar customization indirectly correlates with positive changes in behavior. Specifically, players who were able to customize their avatar and control their actions were emotionally closer to the avatar than players who were allowed to do only one of the former or neither. In turn, the emotional closeness led players' attitudes toward driving under the influence to change after they witnessed the avatar suffer in a car accident caused by alcohol consumption. Coupled with Ratan and Sah's (2015) findings regarding stereotype lift (the opposite of stereotype threat, i.e. positive influence of a stereotype on one's actions) mediated through avatars, the research demonstrates that avatar customization has the potential to improve players' self-esteem and encourage behavior patterns promoted by the avatar's setting. This relationship can be abused, for example when coin-based arcade game cabinets show the avatar facing imminent brutal death unless the game continues, prompting the player to spend more money (examples include the *Final Fight* series and *The Punisher*). However, it can also foster healthy habits outside of gaming. One specific notable example can be once again derived from the *Pokémon* series, in which the latest game, *Pokémon: Let's Go*, features extensive customization options for the player's partner Pokémon, who is always visible on the game screen (in their customized form), aids the player in battles, and finds useful items. The player is also encouraged to "take the Pokémon for a stroll" by digitally transferring it into a bundled accessory that measures the distance walked for various in-game rewards and "communicates" with the player by randomly playing excited Pokémon cries when the accessory is in motion. These features are designed to strengthen the avatar self-relevance of the player's in-game counterpart and the emotional closeness between the avatar and the computer-controlled partner, encouraging the player to be physically active outdoors outside of the game.

The present work suggests that in the same way negative consequences of playing videogames have been examined, positive effects of virtual roleplay, specifically player-avatar identification and avatar customization, should be further considered in

both academic settings and game design. Even in virtual environments, members of social groups are affected by underrepresentation. According to Lee (2014), "the condition of being a numerical minority in a given social setting leads people with a typically underrepresented social identity to feel a decreased sense of belonging and trust" (p. 191). This observation relies on a framework in which an individual's identity exists in two layers: personal identity (individual attributes) and social identity (membership in groups) (Lee, 2014, p. 191). Lee (2014) found that non-white players were much more likely to create a non-white looking, and thus social identity-affirming, avatar in *Second Life* if they were previously exposed to a racially diverse cast of avatars in the game. Conversely, they were much more likely to create a white-looking or "white-passing" avatar if they were exposed to a non-diverse set of avatars beforehand. Furthermore, Caucasian participants were the only ethnic group whose self-expression in avatar customization did not change depending on the setting. This finding shows that videogames are not entirely divorced from real-life social dynamics, seeing as Caucasians face little racially motivated social stigma and prejudice in daily life comparison to other ethnic groups.

A similar paradigm was discovered by Kafai, Fields, and Cook (2010) in their research into racial diversity in the virtual world of *Whyville*. The vast majority of avatar parts (such as heads, hands, etc.) available for purchase in *Whyville* were originally designed for white/peach bodies, making it difficult for players to construct non-white avatars. Players found mixing skin tones odd-looking and would rather default to a one-toned avatar, even if the avatar's skin tone was not their preferred choice and/or did not correspond to their actual skin tone. Due to there being little racial diversity between avatars, discourse emerged on *Whyville* with some players publicly urging the rest of the player base (responsible for the creation of avatar parts) to fill a perceived gap in customization options. Ultimately the discussion led the developers to assign blue avatars instead of peach ones to new players. (Kafai et al., 2010.) While Lee's (2014) work indicated that players would be unlikely to strive to create racially diverse avatars in a predominantly white environment, Kafai et al. (2010) discovered that both new and veteran 'whyvilians' expressed desire for more diversity within *Whyville*. These findings indicate that a higher degree of avatar customization combined with a higher level of diversity in virtual environments leads to a higher incidence of avatar self-relevance. This has the subsequent effect of making players more comfortable and more likely to engage with the game, which increases their overall enjoyment of the experience.

2.2 Identity and Identification

For the purposes of this thesis, the avatar is defined as a constructed virtual identity. Notions of identity and identification are pivotal to this definition, and are understood in a variety of ways by scholars. As Adrienne Shaw outlines in her book *Gaming at the Edge: Gender and Sexuality at the Margins of Gamer Culture*, identity can be conceived of as a sum of different social markers, although these are often unstable and contextually dependent (2015, pp. 56-57). Identification as a process or experience has been defined in various inconsistent ways as the term spans across a number of academic fields including sociology, psychology, and media studies, each of which uses the concept as a means to achieve different ends. Shaw describes it as the act of adopting the perspective of a character, their mindset or attitude, or experiencing a combination of cognitive factors in relation to a character such as empathy or embodiment (2015). Alternatively, identification can refer to the process of identity formation without implied interaction with media texts (Shaw, 2015). Furthermore, drawing on a theory posited by Louis Althusser, we can think of identification as the moment of subjectivation of the self in response to an external stimulus – the instinctual answer to a call which could be made to anyone, but it is the subject that recognizes itself as being spoken to in the specific context and mode of address (Shaw, 2015). The resulting subject may also constitute an identity.

Shaw (2015) makes a helpful distinction between identification *with* a character and identification *as* a member of a social group. Namely, she questions the assumption that identification *as* a member of a certain group is a prerequisite for identification *with* a fictional character – an assumption that frames videogame diversity as a strategy of marketing towards niche audiences. Rather, it is suggested that identities are performed, or rather that identification, the performance of an identity, is what constitutes identity. In this sense, identities are framed as a social construct that serve to categorize and simplify the vastness of human experience into comprehensible chunks. (Shaw, 2015.) However, in order to be communicated as meaningful social markers, these chunks have to be understood by the recipient, as Shaw states: “These performances must draw on a broader system of meaning that helps render those utterances, those performances, intelligible. Media representations and connections with them via identification are deeply connected with this process” (Shaw, 2015, p. 67).

Thus, identities are roles that are performed to achieve certain ends. Identities help people socialize with like-minded individuals as well as separate themselves from individuals they wish to distance themselves from. They aid people in developing hobbies and fostering communication, and ultimately influence the way they understand themselves and the way others understand them. Many can be adopted at once but performed differently in regard to the social context. For instance, Michelle Obama might be referred to in a news article as "wife of Barack Obama," "American fashion icon," "Harvard Law School graduate," or "first African-American First Lady." All of these epithets are true, but all invoke different connotations. Furthermore, in order for the readers to decipher their meaning, the presence of a broader sociocultural context is required. Only if there is a Harvard Law School and only if it is widely known to be prestigious and highly demanding does the title of "Harvard Law School graduate" leave an impression of intelligence and academic prowess; only given America's long-standing colonial history does "first African-American First Lady" indicate not only race but also a progressive, democratic mindset. Ultimately, the very existence of identities only makes sense in communication as they describe what society deems to be important. To put it anecdotally, an Asian man stranded alone on a deserted island his whole life (provided that he could speak and reason as well as humans who are in contact with others) might not be particularly inclined to describe himself as Asian. He might not even be inclined to describe himself as a man. There would be no frame of reference for him to consider the factors that constitute the construct of race and gender meaningful. On the other hand, "allergic to berries" might turn out to be quite an important identifier, and an identity might develop around it.

The concept of identity as performance is crucial for understanding the social experience of videogames, especially role-playing videogames. Identity is an important communication tool between users of videogames. Virtual avatars are vessels for the user to communicate with and act upon the game world and other players' avatars within it. This thesis discusses avatars as constructed virtual identities whose function is to:

> a) allow the user to interact with the game text or virtual world, and
>
> b) communicate different social markers that may or may not align with the user's (gender, race, sexuality, etc.) to the users controlling other nearby avatars.

Furthermore, while design and customization form a significant part of the construction and expression of such a virtual identity, traditional MMORPG gameplay demands that avatars be somehow quantifiable for the purposes of comparison and competition. One way of doing so is via avatar capital, which previous work describes avatar as the sum of the avatar's assets divided into four distinct types: economic, social, cultural, and symbolic (Korkeila and Hamari, 2019). This thesis also considers amassing of avatar capital as a facet of identity formation.

This research also takes into account differences between identity and identification. Identification is, in this case, understood as self-determination of oneself as the subject of a reference. For example, consider the following chat message: "> *LF 2DD for FD."* This is a typical chat message often displayed to all players currently connected to *MapleStory 2*. The abbreviations translate to "looking for two damage dealers to join our raid group for The Fire Dragon (a frequented dungeon location in the game)." A player might glance over the message and consider their game experience unrelated to it, or they might see themselves as the intended addressees. This is because in the world of *MapleStory 2* and other fantasy MMORPGs, avatars generally fall into different categories suited for different elements of combat (offensive, defensive, support, hybrid). If a player has developed their skillset and abilities in a way that grants their avatar above average offensive capabilities, they might think of themselves as "damage dealers", since this particular set of qualities is often sought after in-game. The demand creates the identity, which is in turn performed by players who identify with it. Here, identification refers to the reading of oneself into a public call.

Outside of the sphere of videogames, there is no "damage dealer" identity to speak of in daily life that would fulfill the same functions. This is because the system that gives this identity meaning is not present outside of virtual worlds. The social construct dissipates and is no longer intelligible to others. Conversely, identities from the physical world can be transferred into virtual worlds through the use of avatars as a means of identity expression. This thesis examines how the presence of identities relevant and communicable in our daily lives is reflected within virtual worlds.

3 METHODS

This chapter discusses the methods used throughout this research in a twofold manner. First, it briefly explains different kinds of analyses often employed in game studies. Secondly, it describes the approach selected for the present study. The merits and drawbacks of the approach are also discussed in order to justify the measures taken.

The field of game studies borrows theories and methodologies from countless other scientific disciplines. In *Introduction to Game Studies: Games in Culture*, Frans Mäyrä identifies three main types of research within game studies. The first attempts to deeper understanding of games and their structures. The second focuses on players and player experiences, while the third considers game design and development. Mäyrä also acknowledges that overlap occurs frequently between all three types. (2008, p. 156) Furthermore, Mäyrä (2008, p. 165) and Aarseth (2003, p. 3) identify gameplay as the most crucial element in videogame analysis, as only through gameplay, as opposed to mere observation, can one gain a holistic understanding of the game experience.

With that in mind, this research predominantly focuses on an MMORPG title as a system of technical rules and relationships. Although issues discussed herein are those of game design, and design alternatives are posited, here the discussion of game design is rather a vehicle for the underlying theme of difference between offline and virtual life. Analytical gameplay, as described by Mäyrä (2008, pp. 165-167) was used as the primary source of data. The process involved taking notes of elements and in-game encounters of interest, close observation of the release of new updates and patches, as well as observation of player behavior. Mäyrä (2008) also distinguishes between structural analysis and thematic analysis of games, where the former focuses on the structure and mechanics, while the latter considers aspects of gameplay that concern its interpretations and cultural significance. For the research questions asked in this study, the nature of the game as a cultural artefact was not relevant, and thus only a structural analysis was conducted.

The case study was selected as a tool to develop a broader generalization of the paradigms of the MMORPG genre based on a close reading of *MapleStory 2*. Robert E. Stake (2005, p. 445) names the instrumental case study as detailed research of a bounded entity (in this case, one virtual world separated from all others) whose goal is to provide insight into a common issue. Since the aim of this study is to recognize patterns that could be or have been observed in other games, it uses primarily qualitative methods to analyze data and

draw conclusions. Qualitative research expects that the "activities" or functionalities of the case will be influenced by social, cultural, and other contexts (Stake, 2005). Thus, qualitative methods were chosen over quantitative ones for several reasons: first, quantitative data was difficult to obtain due to the transient nature of the subject, and secondly, a quantitative analysis was deemed more appropriate for a possible future comparison study of multiple titles once elements of interest are clearly identified. A similar approach has been utilized for example by Silva and Mousavidin (2015), Whippey (2012), and Collister (2014). Although this research literature focuses on ethnographic participant observation, the analysis is predated by a keen understanding of the game itself, its rules, setting, and economy, for which scientific gameplay is paramount.

The game selected for the analysis was *MapleStory 2*, a South Korean MMORPG. It largely focuses on player-versus-environment (PVE) content, as opposed to player-versus-player (PVP). This title was chosen for several reasons. First, it was released globally in 2018 shortly before work began on this thesis, and therefore was able to provide the most up-to-date data. Secondly, it serves as a representative of the South Korean MMORPG market, which is both expansive (other games include e.g. *Lineage*, *Black Desert Online*, *Ragnarok Online*, *Aion*, and countless others) and innovative. This is because South Korean MMORPGs are typically released globally months or years after their release in the country after having been tested by the local player base, with gameplay mechanics improved in numerous patches (for example *Lineage 2 Revolution*, as documented in a news article by Callaham, 2017). Their inaccessibility to worldwide audiences within the first few years of the game's lifespan provides the South Korean market with a head start in development over other countries.

MapleStory 2 features a class system, guilds, bosses, dungeons and other content also present in other South Korean MMORPGs. This assures that findings will be easily comparable to other research on the topic. Finally, a major determinant of the game choice was *MapleStory 2*'s emphasis on player expression and creativity. The game features a vast array of user-generated content, which is marketed as a major selling point. The official website describes the game as follows:

> MapleStory 2 redefines the role-playing game genre with a complete commitment to creativity, arming players with a robust set of character and world-building tools that allow them to express themselves unlike ever

> before. Players can design everything from outfits and gear to dream homes and beyond: your only limit is your imagination. [3]

Nexon's focus on user inventiveness invites a closer inspection of the boundaries they have imposed. Furthermore, it vastly expands on the customization options available to players, whereas in games where the developer is the only one in control of content, customization follows much more rigid patterns. *MapleStory 2* presents a unique playground where players become game designers and vice versa as game masters (GMs for short, employees whose avatars roam the game world to keep order and answer players' questions as a form of customer support) explore the creations of the user base. Players can design items and transform their publicly available virtual houses into, for example, platforming or racing levels by changing the camera angle and permissions of visiting avatars to fly or jump. They can hide secrets for visiting avatars to find or construct elaborate mazes.[4] They can also compose and perform music for nearby players to hear. As players exercise their creative potential, GMs can wander around the game world and experience the designs of the user base like any other player without the development team having contributed anything other than the tools used. The ambitious claim that "your only limit is your imagination" serves as a starting point for the analysis of the practical limitations and how they interact with the philosophy of complete player freedom.

Primary data was collected through gameplay over approximately 500 hours as well as from official patch notes (documents detailing changes made to a newly released version of the game) released by the developers via the Steam digital distribution platform. For the purposes of the analysis, in-game actions performable by or to avatars were evaluated in order of their encounter starting from character creation to natural progression through the game as it would be experienced by new players. Each such action (for example attack, gather a resource, collect a trophy, etc.) was considered a means of identity expression if it:

a) was not mandatory in order to progress through the game, and
b) allowed the user to choose to perform the action in different ways.

[3] "What is MapleStory 2? | Official MapleStory 2 Website," *Nexon*, accessed June 30, 2019, http://maplestory2.nexon.net/en/game/about

[4] More information on the housing system can be found in chapter 4.2.4 of this thesis.

Those actions that were found to offer some form of identity expression were analyzed in terms of the level of customizability (number of options) and/or limitations (range of options).

Due to the nature of the source material (MMORPG), certain measures had to be taken to ensure accuracy of findings. Each mentioned feature is accompanied by an explanation of what version of the game (i.e. the date of the release of the given update) it was observed in, as customization features may change or be discontinued in future updates. For features that were not present at the beginning of data collection, the date of implementation is given. These dates were retrieved from patch notes released on the day of implementation via the Steam platform.

Despite several attempts at doing so, it was also not feasible to perform any sort of extensive quantitative analysis (for example of avatar outfits or icons) of players connected at any given moment. This is because even within the scope of one in-game map, housing approximately 40 players at a time at maximum, players are constantly connecting and disconnecting within seconds, and no comprehensive overview of the avatars can be accessed on the client side of the game. Information regarding other avatars is updated in real-time, even in overview windows already open in the user interface (UI), so that all markers of other players' presence on a map disappear once the player disconnects or travels elsewhere.

In some cases, findings were cross-referenced with information given on player-maintained websites such as the MapleStory 2 Wiki (https://maplestory2.gamepedia.com/) in order to maintain the highest possible level of accuracy. Information from these sources, however, was secondary to own observations and for the most part not considered at all, since there is no guarantee the information is accurate and up-to-date. Players' documentation was mostly used to verify that the data was accurate. In cases of discrepancy, further investigation was conducted in-game to determine the correct value of the investigated variable.

4 FINDINGS

This chapter presents an overview of different customizable elements in *MapleStory 2*. Elements of gameplay that do not alter the avatar's offensive or defensive capabilities and present a set of choices are described largely in order of appearance to a new player, although much of the interaction with user-generated content is optional. Section 4.1 discusses the game's avatar creator, while section 4.2 elaborates on the customization of avatars after creation as well as creative actions they can perform (as opposed to advancement-focused).

4.1 Avatar Creation

Avatar creation in *MapleStory 2* is divided into three parts: class selection, customization of avatar looks, and name selection. Before an avatar can be customized, the player first picks one of 11 classes to play.[5] The classes are differentiated by having different sets of skills and equipment. Typical to the MMORPG genre, some only engage in melee combat, some in ranged combat, some rely on mana in battle, etc. The choice of class has a massive impact on combat-oriented actions that the player may perform and strategies they can adopt in order to succeed in the game, thus it will often reflect the player's preferred playstyle as well as shape it. Furthermore, beyond this funneling of performance the choice will also change a few scattered pieces of in-game dialogue, such as the introductory questline where the player learns basic controls or cases where NPCs refer to avatar by their class.

After choosing a class, the avatar creation screen then displays a randomized avatar as a starting point along with options that allow the user to alter an avatar's looks (see Figure 1). The player is asked to customize the avatar's gender to be either male or female. This also has the effect of NPCs later using he/his or she/her pronouns, respectively, to refer to the avatar throughout the game, although some dialogue features non-pronominal references. These references remain gender neutral and instead consist of the avatar's class, rank, or another attribute (such as 'cadet', 'adventurer', or 'explorer'). The player can also choose from 15 unique hairstyles and 15 faces – distinct combinations of differently shaped eyes, mouths, and eyebrows. With 2 exceptions for male hairstyles and

[5] There have been 11 classes as of the May 30th, 2019 update. At launch, the game offered 9 playable classes (8 in the beta version prior to the official global launch).

1 exception for female hairstyles, the length of the hair (or size and position of ponytail, where applicable) can be customized using a slider for each hairstyle.

Figure 1. Character creation in MS2 - stage two.

Aside from customizing the avatar's physical features, the player is also tasked with selecting the preferred clothing for their character. The game offers 11 options for tops (t-shirts, hoodies, etc.), 11 options for bottoms (pants, skirts, shorts), and 11 options for shoes. Each of these elements (hair, eyes, top, bottom, shoes) come in 20 color variants. The color sets are the same for each element. In addition, there are also 20 possible skin colors ranging from pale pink to brown.

One final element that can be customized in this phase are facial accessories, for which there are five options: scar, band-aid, heart tattoo, flushed cheeks, and nothing. The number of customization options at this stage is the same for both male and female avatars, though the designs vary between genders, most notably the hairstyles and bottoms. Out of 11 options for female avatar bottoms there are 7 skirts (64%), 3 shorts (27%), and 1 pair of pants (9%). In contrast, male avatars can choose from 5 pairs of pants (45%), 6 shorts (55%), and no skirts or other options. Furthermore, although most hairstyles can be lengthened or shortened according to the player's preference, there is a minimum and maximum length for each hairstyle, which vary significantly between genders. Although seven male hairstyles can reach shoulder-length at maximum length (i.e. the hair touches a vertical line going over the top of the shoulders from some angle), only two can grow past the shoulders in a noticeable way. Conversely, no (non-ponytail) female hair from the default set can be noticeably shorter than shoulder-length as defined

previously. Only one female hairstyle does not have hair growing down to the shoulders at the sides, as opposed to the majority of male hairstyles that only continue to grow at the back of the avatar's head. There are no facial hair options for either gender. Taking into account every option for each element as well as the possible colors, an unimaginable number of unique avatars can conceivably be created with the tools that are available.[6]

As the final step, the player must name their avatar. Names can consist of up to 12 characters and cannot include spaces or special characters. Names are not automatically capitalized. Less evidently, certain expressions are prohibited and names that contain them will not be allowed. This includes derogatory language and references to sexual acts, for example. The player will be prevented from using these expressions regardless of their position in the word. However, only English language vulgarity is banned. For example, the player cannot create an avatar named "Scunthorpe" (a city in England), as the game will state the name "contains a forbidden word (cunt)," while it will not object to creating an avatar named "Putain" (a French swear word).

4.2 Avatar Customization

This section is divided into six subsections, each of which describes a different gameplay element: dyes, outfits, titles, housing, profile pictures, and player-made music, respectively. These mechanics all offer extensive customization and/or gameplay options without being explicitly tied to advancement in the game, although they may provide access to achievements. As all of these mechanics are introduced during gameplay, every player is expected to use each at least once (though not necessarily every avatar). The data presented in this section was gathered primarily through analytic gameplay as described by Mäyrä (2008) and Aarseth (2003).

4.2.1 Dyes

The game world is divided into dozens of areas or maps connected by warp points to other adjacent maps. In Tria, the capital city of the game world according to the game's lore and a popular gathering spot, players can find Beauty Street, a map dedicated solely to

[6] Following a formula for determining possible combinations Cs = n! / r! * (n – r)!, where n represents the total number of options and r the number of options being selected at any given time (190 and 13, disregarding the avatar class), gives us a result of 3,502885054630285809932963280858 2e+322 possible combinations.

customizing their avatar's looks. One of the facilities on Beauty Street is the Dye Workshop, where the player can dye any currently visible piece of their equipment with a custom color (see Figure 2). As of the February 28th, 2019 update, the Dye Workshop offers a total of 220 flat colors and color combinations. (Color combinations dye an item's shadows a different color). However, only the 20 starter set dyes are available to beginner avatars. The remaining dyes can be unlocked by obtaining 'achievements' through gameplay at varying degrees of difficulty. Achievements might require the avatar to complete certain questlines, raise certain crafting skills to a sufficient level, beat a world boss a certain number of times, or complete other game-related activities. While some dyes are unlocked only for the avatar that completes the respective achievement, others are made available for all the avatars in the player's account. Such achievements are marked as "(Account)."

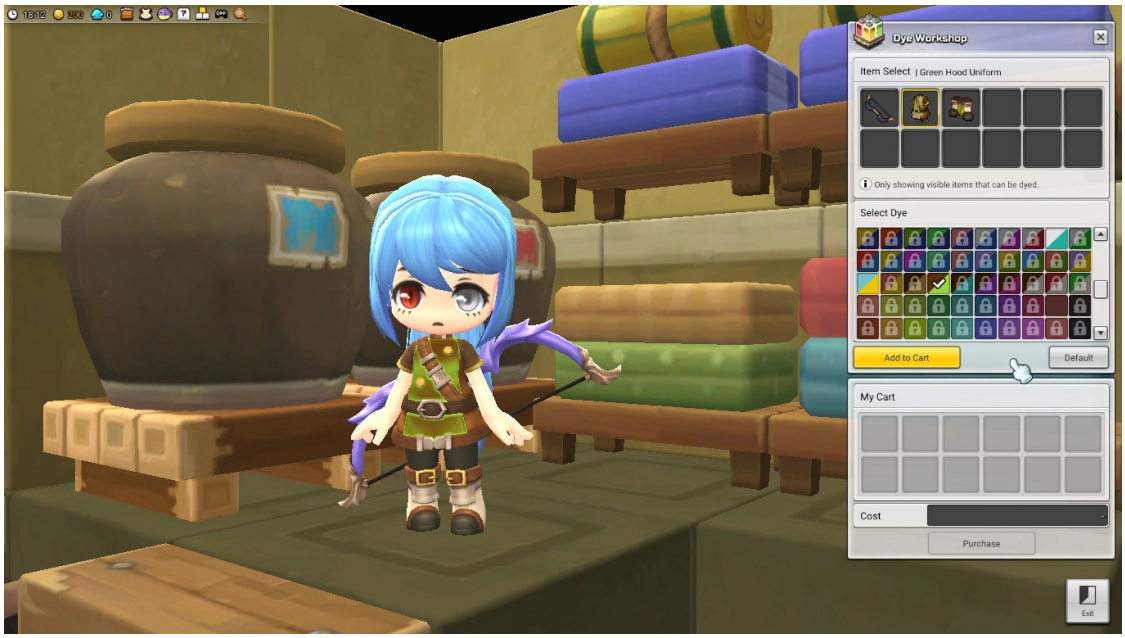

Figure 2. Using the Dye Workshop.

The fee for dying a piece of equipment is 10,000 meso. Meso is the basic soft in-game currency. 'Soft currency' refers to currency obtainable as loot from quests and fallen monsters as opposed to hard currencies purchased with real-life money in microtransactions.[7] A sum of 10,000 meso is easily affordable for characters even in low (below half of the maximum level) level ranges. There is no time constraint forcing avatars to wait between re-dying pieces of equipment. Furthermore, besides finding it in

[7] The March 28th, 2019 update introduced the Meso Market, a special store accessible through the UI where players can purchase meso in exchange for hard currency and vice versa. This is, however, not the primary method of obtaining meso, and there are strict limitations in place controlling the amounts of meso players can buy and sell.

the capital city, players can also effectively access the Dye Workshop from anywhere on the world map directly through the game's UI. This makes gear customization easily available to all avatars as soon as they are created.

4.2.2 Outfits and the Meret Market

Every equipment slot in the character equipment window also has a corresponding outfit slot (see Figure 3). The following slots are available: headgear, eyewear, top, bottom, cape, shoes, earrings, gloves, face accessory, ring, and two weapon slots (primary and secondary).[8] Outfit items are what the developers of the game refer to as "cosmetic", i.e. items that replace the looks of a piece of equipment with no benefits to the avatar's performance in combat or other aspects of the game. They serve as a means for the player to personalize their avatar with unique designs as opposed to the standard and limited set of battle-ready endgame gear.[9] Outfit items may be obtained through several means. First, some are given to the avatar as quest or level up rewards, although this happens rarely. Secondly, they may be purchased from specialized vendors upon completion of the required achievement. Thirdly, they are awarded to players for extensive participation in limited time in-game events. Such outfit items are typically themed; the Perched Pumky hat, for example, was given away as part of the Halloween 2018 event ("MapleStory 2 Halloween Events!" 2018).

However, the most prolific source of outfit items is the Meret Market. The Meret Market is an in-game store accessible through the UI where players can purchase various items. The items are listed for purchase in exchange for blue or red merets, which are two similar kinds of the game's hard currency (purchased via online payments). Blue merets can be purchased with real money while red merets are given away by the game's developers on special occasions. With the exception of the items listed in the special Red Meret Market, red and blue merets can be used interchangeably in the game's other services.

[8] The belt item is the only one to not have a corresponding outfit slot. Instead, the face accessory slot takes its place. Custom skins cannot be applied to belt items.
[9] The number of gearsets which experienced players consider suitable for advanced gameplay falls into the single digits.

Figure 3. Gear and outfit item tab comparison in the character window.

Aside from outfit items designed by the game developers, the Meret Market also offers a unique selection of items in the Design Shop. The Design Shop is a section of the Meret Market whose items were all designed and uploaded by other players and belong under the umbrella term UGC or User-Generated Content. Items can be designed by players at any time by accessing a special interface, the Maple Workshop, through the game's UI. In the Maple Workshop, players can purchase templates for merets and apply their own textures to them. The textures must be designed in a graphics editor outside of the game. The designer can then use the newly created design themselves and upload it to the Design Shop for a listing fee (in merets), as shown in Figure 4. The selling price is decided by the designer. The item is available in the shop for a period of one month, after which the

player receives a sum of blue merets corresponding to the number of sales. It can be listed in the shop multiple times as long as the listing fee is paid each time.

Players must provide consent with the publisher's User Generated Content Policy prior to uploading any designs. Among other concerns it addresses, the policy states that players may not upload any content that "infringes the copyright, trademark or other intellectual property rights of a third party."[10] The policy ensures that the publisher will be stripped of any legal liability in case trademarked content is featured in UGC. This effectively means that designs featuring logos, characters, or other elements borrowed from a television series or game, for example, are not permitted. Moreover, players are also not allowed to use pictures of real people in their designs. Attempting to list an item with a trademarked word in the item title will prompt an error message. Those who fail to comply with the agreement risk having their designs deleted without compensation, being restricted from using UGC features in the future, or having their account banned and thus their access to the game revoked. The User Generated Content Policy must be consented to every time it is updated.

Figure 4. The Design Shop section of the Meret Market.

4.2.3 Titles, Badges, and Insignias

Besides cosmetic items that directly alter the avatar's looks, there are several ways to customize the way an avatar's information is displayed in other players' UI. The first and

[10] http://www.nexon.net/en/legal/user-generated-content-policy/ (accessed March 9, 2018)

most common way to differentiate an avatar from others are titles. As soon as an avatar is created, a single- or multi-word title can be chosen for it in the character window, which then appears in front of the avatar's name on their nametag (e.g. "Star Adventurer Jimbob", where "Star Adventurer" is the title). Titles are unlocked through achievements by completing tasks specific to a given title. There are over a hundred titles in the game and more are regularly added via updates and in-game events. An avatar's title can be changed at will and at no cost to the player.

Similarly, a player can unlock and assign an insignia to their avatar. Insignias are small icons which appear above the avatar's nametag on the game screen. These are much more difficult to obtain than titles and as such there are only 15 insignias that can be unlocked as of the February 28th, 2019 update. Some insignias can only be obtained for a limited time, such as the Founder's Insignia, which is only unlocked for players who pre-purchased the game. Much like titles, insignias can be set at no cost to the player directly from the character window at any point in the game.

Finally, badges can be equipped, similarly to outfit items, to alter some of the avatar's circumstantial features. These include the graphical design of the nametag, chat bubble, and the font that displays damage dealt to enemies. Furthermore, badges can alter the avatar's appearance when fishing or swimming, or change the avatar's tombstone when the avatar dies. Badges can also be used to display a permanent graphical effect around the avatar, change the appearance of the avatar's pet, display a graphical effect when another, "buddy", avatar with the same badge is in range, or make the avatar's headgear transparent. Finally, a special slot is reserved for utility auto-gathering badges. These allow the character to automatically gather resources without player input until the resource is depleted, whereas under normal circumstances, the player must repeatedly press a corresponding key or gamepad button to keep gathering.

4.2.4 Housing

The housing system is a mechanic that provides every account with its own, fully customizable map. Since *MapleStory 2* is a 3D isometric game made of same-sized blocks of terrain and objects, it allows for a user-friendly customization interface. The first avatar on an account is invited to explore their "house," a 4x4 blocks wide and 3 blocks high map that can be accessed by any avatar on the account at will. The house can be expanded

from its initial size to a size of 25x25 blocks and a height of 15.[11] Any terrain blocks present in any map in the game can be purchased and placed in the player's house as well as a wide variety of interactable and static objects, NPC helpers, portals, and farming resources. Blocks vary in price, with some being free, some costing a couple dozen meso, and the rarer or event-specific blocks costing a sum of merets. A set amount of experience can be obtained per day by placing furnishings in one's house. Spending time or logging out at the house lets the player accrue a "rested bonus," which makes them receive more experience from other tasks upon leaving the map later until a set experience threshold is reached. The house also grants instant access to bank storage (shared by all characters on an account) and a personal doctor, an NPC that can remove negative effects of death from the player avatar in exchange for meso.

The player can furnish their house in any way they see fit, as long as the map fits within the set boundaries. Furnishings come in 26 categories, including for example beds, tables, chairs & sofas, lighting, vegetation, nature terrain, event blocks, etc. Hundreds of blocks are available in build mode. The January 31st, 2019 update also introduced the option to save up to 5 floor plans that can be switched between at any point, although blueprints can only be saved in exchange for merets. Moreover, the Meret Market offers house blueprints designed by other players for sale.

In addition to the placement of objects, homeowners can also customize the interior lighting, map background, and camera angle at which the map is displayed. There are five lighting modes (basic, natural, cool, warm, and dark), eight background images, and three camera angles (the default quarter view, top-down perspective, and side view) to choose from. The house's name and greeting – a message that shows up in the UI of all visiting players – can be personalized at will. The name can be composed of up to 16 characters (including spaces) and the greeting is limited to 100 characters. The name cannot contain any special characters (such as punctuation) and a profanity filter prevents the use of vulgar language.[12]

Houses are publicly accessible by default, although they can be password-protected. Provided that one's house is publicly accessible, other players can visit it at any point by

[11] While house expansion previously cost the player a sum of meso (softest in-game currency) depending on the size, as of the February 28th, 2019 update, the feature has been free since the global launch.

[12] A comma could previously be used in the house name, but the functionality was removed in the April 25th, 2019 update.

selecting the player and then clicking “Visit House” in the game’s UI. Invitations can also be sent to other players. This makes player homes suitable locations for socializing, farming, and gathering house-related trophies. The game world also offers plots of land on various maps that players can rent for a period of 30 days in exchange for a large sum of meso. The price varies depending on the size and location of the estate and generally falls into the tens of millions of meso. The property can then be customized with blocks in the same way the house can, and other players may enter the house through the property (without an invitation or navigating the UI). When a player purchases a real estate contract (see Figure 5), no other player on the server can move to the property in question until the contract expires. Properties come in sizes of 1x2, 2x2, 3x3, 4x4, and 5x5 blocks, with larger properties being more expensive.

Accessibility to houses is not dependent on the owner’s online presence on the game server. While avatars vanish from the game world once the user logs out and cannot be interacted with, house maps remain available regardless of the owner’s offline status (for example through the Friends or Guild windows or via the game’s ranking system, which displays top ranked players, guilds, and houses). Furthermore, although the owner is the absolute authority on their house map and can change the landscape, furnishings, etc., visiting players may also be granted permission to furnish the house. The owner can then set a budget for players who have the rights, who can then use the budget to furnish the house any way they see fit. Permission to furnish a house expires when either the owner or the other player leaves the map. In addition to furnishing rights, houseowners control whether or not visiting players can perform the following actions: use potions, use skills, play music, climb walls, jump, use ground mounts, and use air mounts. The houseowner can always perform any action. They can also kick any guest avatar out of the house, enable PVP on the map, and use special host chat commands while at home, such as commands to send surveys to players or change gravity.

Besides serving as a hub for players to socialize and farm items and trophies, the house functionality also offers a competitive aspect. Once per day (resetting at 00:00 server time), a player can nominate a house for “Star Architect”. Star Architect is a title reserved for players whose houses are very popular. Once an avatar nominates a house, no other avatar on the same account can nominate another for the remainder of the day, ensuring fairness of votes. The number of monthly as well as all-time nominations of the house

can be seen in the UI upon entering. Players with the most nominations are featured in the monthly rankings and obtain a special Star Architect insignia.

Figure 5. A Real Estate Contract in MapleStory 2.

4.2.5 Profile Pictures and Avatar Selfies

The world of *MapleStory 2* is divided into dozens of maps where player avatars can interact with each other. The player can always see what other avatars are currently connected to the same map on the server in the user interface. Players who have recently arrived are represented by icons in the top right corner of the screen, while a complete list of avatars, their icons, levels, classes, and other avatar-related information is available in a separate window (see Figure 6). The list also allows players to perform any action on another avatar they could also perform by clicking the avatar itself, e.g. inviting them to party, sending a direct message, visiting their house, etc.

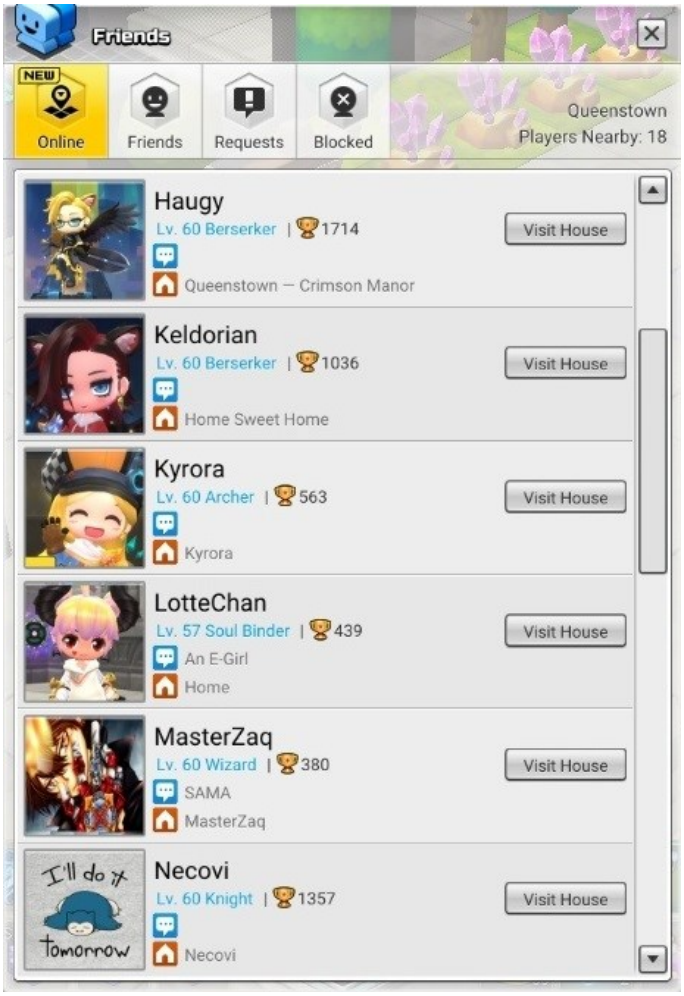

Figure 6. The list of nearby players on the same map.

In the tutorial section of the game, the new player is notified of this functionality and prompted to select an icon for their avatar. The icon can be any image file from the user's computer that does not violate the terms and conditions of the user-generated content policy. Icons featuring copyrighted characters, for example, may result in the avatar being banned from the game. Alternatively, the player may take an in-game "selfie" of their avatar to serve as their icon. The photograph functionality opens up a new window in the UI which can be moved and resized. The player can still control their avatar while this window is open, walk to where they would like to take a picture, use emotes, and zoom the camera in and out. Once a picture is taken, it is saved to the user's computer and may be used as an avatar's profile picture. The game imposes no limit on how many pictures can be taken or how often icons can be changed.

4.2.6 Music

Another activity implemented into *MapleStory 2* is the ability to play musical instruments. Upon obtaining an instrument, the player can direct their avatar to any place

on most maps and play a song represented by an in-game item. As of the March 29th, 2019 update, there are 29 types of instruments that can be played ranging from piano to snare drums, each with different obtainable versions, although only 5 are sold by NPC merchants and others must be purchased from the Meret Market. Songs can be purchased from other players or composed using a special in-game interface where the tempo, notes, pauses, and harmonies all have to be written down in code designed for use with this interface (see Figure 7). Music can also be improvised on the spot once the avatar takes out an instrument, although in that case the interface only offers one simultaneous note to be played in a limited range.

Songs can be saved onto and loaded from the user's computer at any point, meaning it is possible to spread out the composition of a single song over multiple play sessions. Once a code file has been created, copies of the song can be created for as long as the player has access to the file. In-game, song code must be loaded into the composer interface, where it can be named and saved into a consumable item. The avatar must possess an item to transform, namely either a Blank Music Score, a Blank Intermediate Music Score, or a Blank Advanced Music Score. The blank scores impose limitations on the length of the music to be encoded, only allowing for 3000, 5000, or 10 000 code characters, respectively. Maximum duration of the composition is not enforced directly, since note length can be specified. Notes can be spread out across the main melody (mandatory) and up to nine supporting harmonies (optional). Along with notes, the player can encode tempo, intensity, key changes, default note length, sustain setting, performance speed, and various animations called "performance motions" to be performed by the avatar at specified parts of the song. Encoded songs can only be performed a limited number of times ranging from 10 to 99 depending on the template used, after which the item will become unusable.

Once a song has been composed, it can be performed almost anywhere in the game world, where nearby players will hear the song instead of the usual background music for the area. The only map where avatars cannot play music (including house maps) is Queenstown, a popular area in the game world where many events take place. In Queenstown, players must sign up in advance to play on a stage separated from the rest of the map by an invisible wall. Here, players can perform alone or with others as an ensemble. Some song items come in different versions for different recommended instruments, intended to be played at the same time with a party of other players (the party

leader controls when the performance starts so that all players' performances are synchronized). If players are performing on stage in Queenstown, others have the option to chat with them, applaud them, wave glowsticks, or view the performance from various angles.

Figure 7. The composer interface with code displayed at the bottom. Whitespace is ignored by the interface and notes are here arranged on multiple lines for improved readability.

5 DISCUSSION

In this section, implications of the affordances in avatar customization present in *MapleStory 2* on identity expression are discussed. The aim is to analyze how customization can be used to portray social identities (characterized by group membership) from real life in-game. In tandem, the subchapters explore the ways game code inhibits expression of real-life identities in the virtual world. Finally, the chapter offers a comprehensive look on (some of) the possible avatar identities in *MapleStory 2*.

5.1 Avatar Creation

During the avatar creation process, the player selects one of two sexes for their character: one represented by the Mars (male) symbol ♂ and one represented by the Venus (female) symbol ♀. It is not possible to abstain from this decision, despite there being no gameplay-encoded reason (such as a system of "breeding" avatars) to make the distinction. The avatar's sex is the sole determinant of their voice, the types of equipment and outfits the avatar will be able to wear, and what hairstyles will be accessible to them. Furthermore, the sex determines the pronouns that will be used by NPCs to refer to the avatar in story quests (he/him for male avatars and she/her for female avatars). This decision, made before the first interaction of the avatar with the game world, has implications for the rest of the game experience that the novice player is unaware of.

This system strictly mirrors the concept of binary gender, which categorizes human beings as either male or female. This distinction is problematic because it ignores intersex individuals (people born with a combination of sex characteristics not typical for either of the two) and concepts of other genders and gender fluidity. The game thus conflates binary sex characteristics and gender by permanently "locking" the character into an arbitrary set of options for further customization. It defines gender as something innate, as it predates using the avatar to perform actions in the game world, and immutable, as there is no way to change an avatar's sex once it is created.

In *MapleStory 2*, gender is embedded in the choice of avatar sex. This conflation is apparent in the rest of the avatar creation process. It is for example reflected in the choice of hairstyle and starting gear for the avatar. On the one hand, avatar sex facilitates access to features the player might desire and/or envision for their male or female avatar, such as long braided hair (for females) or suit and tie (for males). The distinction might be

useful for some when attempting to achieve a certain look with one's avatar and looking for items that fit this look in in-game stores. Players might seek to present themselves in accordance with a conventional image of the desired gender, whether it is to confirm their own gender identity, be more easily recognizable as a member of their gender, or to communicate and play the role of another. On the other hand, the separation also prevents the avatar from ever having access to half of the outfits and styles available in the game, reducing the range of customization options significantly. It is noteworthy that avatar sex has no influence on the facial accessory, skin color, or gear color options, as those all remain available to the avatar throughout the game regardless of other decisions in customization.

Although categorization of avatars by sex may facilitate access to desired items, there is no gameplay mechanic in-game where avatar sex functions as a determinant. Avatars cannot get married, which would make avatar gender a sensible, if outdated, feature, if it were the case that only avatars of opposite sexes would be able to marry. Furthermore, avatars cannot breed to create other avatars or NPCs that could, for example, occupy the avatar's house map (such as children of the playable characters in *The Sims* by Maxis) and periodically generate items or offer quests. The absence of any such feature begs the question – why do *MapleStory 2* avatars have a gender at all?

The most straight-forward answer would be that the designers of *MapleStory 2* were all either male or female and considered their sex an important part of their social identity – important enough that it should extend to virtual humans in a piece of entertainment software. The game designers, like all humans, have multiple overlapping identities. For example, they may be either carnist, vegan, or vegetarian, yet there is no explicit trace of these identities in the game code. They have, however, designed the game in a way that gives players the opportunity for avatars to only consume certain food items if players so desire. In real life, gender may be a determining factor in the opportunities a person can pursue, the way they and their role in society is perceived by others, and what romantic partners they may seek. However, such markers do not easily translate into the virtual world of *MapleStory 2*, regardless of the software enforcing such a translation. An avatar's gender does not even necessarily have to correspond to the player's own gender, lending no contextual information to others. It simply reflects the player's choice of customization constraints. The presence of gender in the game indicates that the designers

are driven by a strong sense of importance of the notion of binary gender in the physical world instead.

5.2 Avatar Customization

Besides avatar sex and name, all other customization options available during the character creation process can be further altered from within the game world itself during play. This can be done by visiting a simple dye shop or under the guise of "plastic surgery," which is a function that lets the player change the avatar's eye color, face, or skin color at will. The term "plastic surgery" is used in-game to refer to this procedure, administered by a "plastic surgeon," which illustrates the perception of avatars as bodies. While this mechanism derives its name from the real-life procedure of getting a plastic surgery, it extends the capabilities of modern medicine well past its real-life limits. Interestingly, this causes a strange discrepancy in the game's affordances: it enhances a concept found in our world (where one cannot simply change their skin color through a surgery, for example), while erasing feats already routinely accomplished by present-day science (such as sex reassignment surgery). This gives rise to the question of what reasoning has led the developers of *MapleStory 2* to these conclusions. Even in a seemingly apolitical virtual world far removed from our own, the game design recreates – whether consciously or not – a political position on gender reassignment by choosing to make it absent, even though clearly fantastic surgeries are available.

Further proof of this discrepancy is exhibited in the inability to change the avatar's name, although in this case there are technical considerations to take into account. Name change is a frequent practice in reality, notably associated with marriage. Although avatars in *MapleStory 2* cannot have a last name nor can they marry (despite the presence of a wedding hall suggesting just such a system in a future update), the idea of changing one's first name is still very feasible and not exceedingly rare. It might be especially desirable in cases where the player has created an alternative character or "alt," which serves mostly as a way for players to obtain high-level gear faster and have more room for items gathered on their main characters or "mains." A player who has leveled up an alt might come to the conclusion that they are more comfortable with the style of gameplay offered by the alt's class and would like to focus on it as their main instead. However, such a change might cause the player to lose some prestige or social capital if they go from an avatar named "Bronn" to one named "SugarBun420" (named so since all the effort put

into naming and customizing mains rarely extends to alts). And of course, should an avatar seek to undergo a sex change, a name change might also be appropriate.

The mechanics of changing an avatar's name could be one reason for why the option has not been implemented, considering it does in fact play a key role in the gameplay. The name marks the addressee of in-game mail or a whisper (private message) and allows other players to target the avatar for party invitations, guild invitations, trade requests, emotes, etc. Seeing as the servers are constantly online, it would be tricky to change a name on the go, as messages could be sent and received by the character at any point, leading to interactions getting "lost in translation." Furthermore, it could cause confusion for friends and guildmates of the avatar if they were not notified of the change.

5.3 Icons

The gameplay mechanic of setting avatar icons and taking selfies was well-received, judging by the absence of default icons (depicting a white, faceless figure) throughout the game world for all but the newest players. In fact, data shows that selfies currently serve as the most popular icons in *MapleStory 2*. In an analyzed set of 22 concurrently present avatars in Queenstown (the site of temporary event quests and the most traffic-heavy area of the game) in afternoon hours, only 4 did not have a selfie as their icon. On another map at the same time, 3 out of 10 avatars did not have a selfie as their icon. A possible explanation for the prevalence of selfies is that given the limitations imposed upon content that can be set as an avatar's profile picture, players choose the in-game method of setting their icon to guarantee there will be no repercussions. Another possible reason is that taking and setting an avatar selfie is a very quick and easy process, which might be preferable over having to think of an unrelated icon. The selfie can also be updated periodically to display an avatar's new gear, hairstyle, and other displays of avatar identity and capital. Furthermore, avatar selfies allow other players to easily identify the avatar on the list when they encounter each other in the game world itself based on their looks, diminishing the need to remember names if one wishes to interact with another.

A notable feature of the camera in *MapleStory 2* is that it does not automatically hide the rest of the UI, which means that it is possible to take pictures which include avatar or NPC names or any other UI window, such as the map or the quest log. However, no avatar has been observed featuring any of these in their icon. This could indicate that textual cues are not as important for players in identity formation and representation as graphical

cues such as the avatar outfit and emote performed in the picture. Instead, lack of forced focus on the actual avatar has resulted in some players using their avatar's pet as the icon, for example. On only very few occasions, an avatar with a non-human, non-cartoony, symbolic icon as their avatar was encountered in the game world whilst conducting research for the present work. Since *MapleStory 2* is by definition a social game which relies heavily on group mechanics, it is possible that players are subconsciously aware of the measures of attraction as described by Westerman, Tamborini, and Bowman (2015, highlighted here in chapter 2.1) and thus gravitate towards humanoid or animal-like icons. Another contributing factor is that the player's icon is in fact a second level of abstraction from the self, as it represents the avatar, rather than the player themself. In this sense, players might already see the avatar as an "icon" signifying their presence in the virtual world, and therefore strive for consistency in displaying the avatar in their actual icon.

5.4 Tiered Items

All items in *MapleStory 2* belong to one of 5 tiers: common, rare, exceptional, epic, and legendary.[13] The color of the item name in the UI indicates its tier and can be either white, green, blue, purple, or yellow in order from common to legendary. Item tiers serve several gameplay purposes. First, items of a higher tier sell for more meso both in NPC shops and on the Black Market, where items are traded between players. Secondly, higher tier items appear more rarely in the game, which means that they are more difficult for players to obtain. Thirdly, higher tier gear gives the avatar a higher "gear score" upon equipping – a calculated measure of the avatar's offensive and defensive power. Items that are not equippable, such as song templates or potions, can usually be either used more times than their more common counterparts, or have more potent effects.

Besides their gameplay effects, however, tiered items also offer a means of personal expression. Gear in the same tier offers the same gear score bonus, and thus the decision of which to equip comes down to any set bonuses it may have. Set bonuses are a common feature in (MMO)RPGs and refer to a higher increase in the avatar's stats if they wear multiple items belonging to the same set. Set items in *MapleStory 2* share a default color scheme, a theme (for example of wizardry, where an outfit would be composed of a pointy

[13] A sixth tier, ascendant items, has not yet been implemented in the worldwide release, although references to them exist in the game.

hat, robe, and magical shoes), and a modifier in the item name. However, many other items within the same tier that do not come in sets are functionally identical.

One typical example is mounts. Mounts are rideable objects that increase the player's movement speed either on the ground or in the air. Mounts can be obtained in various ways, for example as quest rewards, looted from dungeons, received as rewards for participating in an event, bought from vendors after unlocking certain trophies, or purchased from the Meret Market. Mounts within the same class (ground/air) and tier offer the same movement speed bonuses, leaving the choice of the specific mount up to the player. In other words, the mount that an avatar is seen riding is a prestige marker, which is a form of avatar capital recognizable by others, as skilled long-time players know what must have been accomplished for the player to own the item. For example, the first epic tier mount most players receive is "Hefty," a plain brown bull automatically sent to all avatars upon reaching level 60. In contrast, one of the most unique ground mounts, the "Fairy King's Eidolon," requires the avatar to clear possibly the most challenging single-player dungeon in the game many times as it is purchased with currency obtainable only by clearing said dungeon. Although these two mounts offer the exact same gameplay benefits to the avatar, an avatar riding a Fairy King's Eidolon will automatically be perceived as extremely powerful in combat without the need to check their gear score. The Fairy King's Eidolon thus attracts far more attention from other players and serves as a symbol of higher status than Hefty.[14] Mounts are also a method of avatar customization, as they act as a functional extension of the avatar body. The reason for this is that while many mounts are roughly equally difficult to obtain and possess the same properties, the choice of mount ultimately becomes a matter of aesthetics and avatar capital (as described by Korkeila and Hamari, 2019). Based on these observations, personal preferences in avatar presentation are part of the driving force behind a player's attempts to unlock or loot a particular mount. Therefore, while certain items scattered throughout the game world offer no benefits relative to each other (and, in some cases, at all), the way gameplay proceeds is, to a degree, generated by the players' decisions in customization. The areas they visit and the enemies they battle will be determined by the gear they are looking for.

[14] During the data gathering period of the present research, only one avatar was spotted riding a Fairy King's Eidolon, while Hefty has been and remains a very common sight.

This system also imposes boundaries on identity expression. This is because the choice of mount, despite there being a wide selection, becomes dependent on the tier if the player wants their avatar to have the highest quality items. For example, the most sought-after mounts currently implemented in the game are all depictions of living beings (deer, scorpion, etc.). Mechanical mounts, such as motorcycles or cars, simply do not exist in the highest tier, or are only obtainable from the Meret Market. This means that a player who prefers a particular mount skin, such as a scooter, is forced to sacrifice gameplay benefits for self-expression. During the data gathering process of this research, no max level avatars were seen using mounts belonging to a tier lower than epic (the current highest available mount tier). Thus, the game effectively encodes avatar capital into a very limited set of items, rendering a large range of options unattractive because they don't offer as many benefits as the highest tier items.

This dynamic is not specific to mounts. Perhaps the most striking example of avatar prestige clashing with identity expression can be found in the world of outfit items. Outfit items, despite being purely visual enhancements of the avatar, also come in tiers. Most outfit items, including all items created by players using the Maple Workshop, belong to the common tier. Event outfits may belong to a higher tier, and notably many items in Style Crates, lootbox-type items purchasable for merets, belong to the exceptional tier.[15] Furthermore, a few outfit items, such as the Gold Ribbon outfit only available in special paid editions of the game (specifically in a pack with a price tag of 59.99USD), are Epic. Once again, players are given incentive to attempt to obtain higher tier items, in this case often for real money, because skilled players know what odds must have been beaten for them to have it, thus increasing avatar capital.[16] In a game that prides itself on giving players the right to create much of its content, it seems counterintuitive that players are also implicitly discouraged from purchasing one another's content. This contradiction stems from the need to generate revenue demanded by the free-to-play monetization model.

[15] According to the official website (http://maplestory2.nexon.net/en/game/stylecrate), 27 out of the hundred items available in Style Crates from June 27th to July 25th, 2019, are Exceptional.
[16] Note that outfit items cannot be traded between accounts, so that an avatar could not have been simply gifted a specific item, or bought it for soft currency.

5.5 Alternatives

Having discussed the limitations of *MapleStory 2*'s avatar customization system, an opportunity presents itself to offer alternatives which would enhance the user experience at minimal cost to development. After all, games are playful experiences, and as such could benefit from a multiplicity of avenues for play. For example, since the avatar's gender has no impact on gameplay, besides minor changes in quest dialogue, and major limiting impact on customization options, there is potential for improvement of the extent of player-avatar identification in removing the feature. Instead of by gender, outfit items could be meaningfully classified based on their physical traits such as cut (T-shirt, hoodie, etc.) or style (cute, adventurous, casual, etc.). Thus, the same number of outfits would remain available to all avatars with few negative effects on navigability. In order to solve the conundrum of pronouns used by NPCs to refer to the avatar, the player could pick their preferred pronouns instead of avatar sex. Alternatively, the choice of sex (either binary, or split into more options) would still determine the pronouns, but the availability of outfit items would change as described above.

In regard to the encoded immutability – and innateness – of sex, a case can be made for implementing an avatar sex change mechanism. If a player decides to experiment with a new look (assuming that the outfit items remain separated by gender), they might be discouraged from doing so if acquisition of new items is dependent on them creating a brand new avatar of the corresponding sex. This is highly probable, given that high-ranking players spend hundreds of hours developing the skills of a single avatar and amassing avatar capital. A sex change enchantment or scroll, for example, would offer an additional option to the player without the need to sacrifice progress. Implementation of such an item would require all gender-dependent avatar parts (in the case of *MapleStory 2*, the hairstyles) to be mapped to items belonging to the opposite sex, so that when the item is used, the avatar can safely "transition" to the new look. This also means that there would have to be an equal number of options for the sexes, or that a default or random option would have to be assigned to transitioning characters, sacrificing the item or feature currently equipped. Similar features are already present in many games, such as FromSoftware's *Dark Souls II*, where an avatar can enter a specific coffin and emerge transformed into the opposite sex with physical features maintained as close to their original look as possible. A more familiar approach is used in Volition's *Saints Row: The Third*, where the avatar can visit a plastic surgeon to change their gender for a fee. Both

Dark Souls II and *Saints Row: The Third* are primarily action games focusing on combat, where customization is not emphasized as strongly as it is in *MapleStory 2*. The presence of a sex change mechanic in both indicates that such a feature is not only possible, tried, and tested, but also that it is a core element of avatar customization. It points to the developers' understanding that the feature should not be overlooked in games where players are expected to invest significant amounts of time and resources into the avatar.

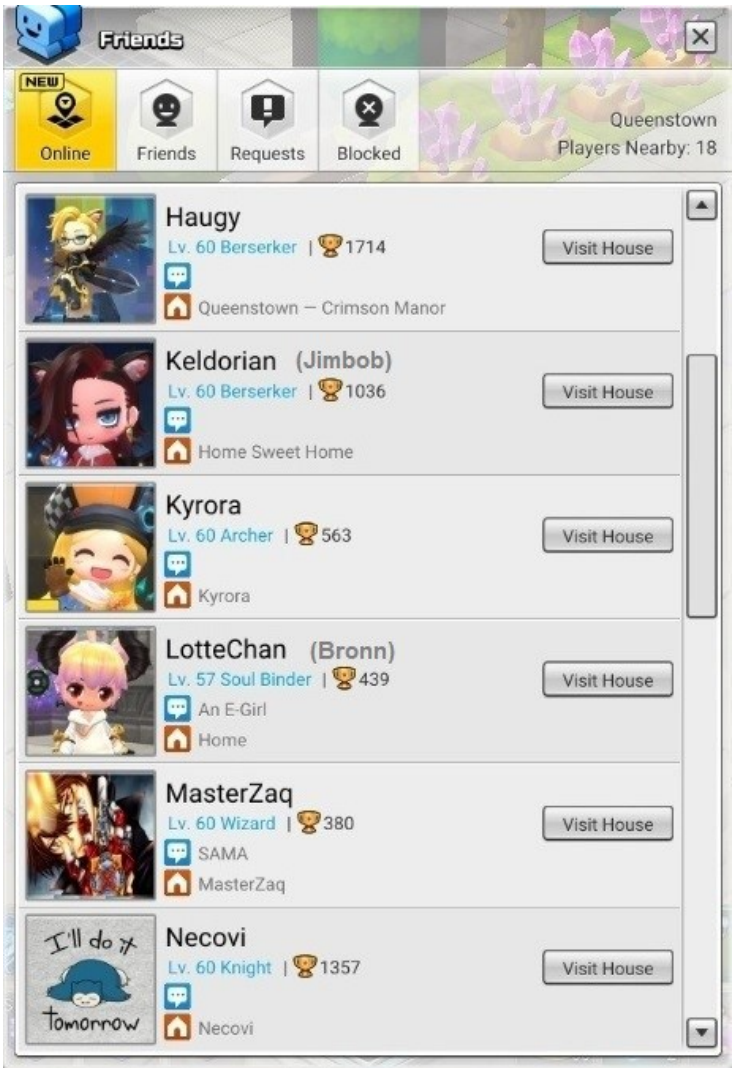

Figure 8. Modified Figure 6 showing avatars' former names.

Should a name change mechanism be implemented – a feature especially valuable for avatars transitioning from one sex to another – several ideas for its implementation can be suggested. As highlighted previously, a name change could not be instantaneous due to the nature of the game. However, new names could be implemented during routine maintenance patches, which occur roughly once every two weeks in *MapleStory 2*, causing the servers to remain offline for several hours. Upon logging in after the maintenance, the player would see their avatar renamed. In order for friends and

guildmates to be made aware of the change and to avoid confusion, the former name could appear in parentheses following the new name in the game's UI, where applicable, for a set period of time (see Figure 8). In addition, a message notifying the player of a friend avatar or guildmate changing their name could be shown in the chat window upon logging in along with announcements and guild notices. The message would read, for example: "Your friend Jimbob now goes by Keldorian."

6 LIMITATIONS AND FUTURE RESEARCH

This chapter elaborates on some of the limitations of this study. As these are addressed, suggestions for future research are presented in tandem. This work is by no means a comprehensive overview of avatar customization in videogames, and conclusions reached herein offer themselves for comparison with findings in research on other MMORPG titles.

As highlighted before in the chapter 3, one of the challenges this research faces is the volatile nature of the subject material. Due to gameplay characteristics of *MapleStory 2* and massively multiplayer online gaming in general, it is nearly impossible to gather quantitative data without using generally inaccessible server-side activity logs, as the elements under scrutiny transform in real time. It was therefore not possible to perform empirical analyses of emote or avatar title usage, for example. Furthermore, any conclusions reached in this thesis may prove inconsequential or even invalid in the future as changes continue to be made to the game overtime, often reflecting the desires of a dynamic player base.

Keeping in mind the fact that MMORPG's are a heavily social genre, it is vital to keep the attitudes and behavior of players in mind when conducting research. Including surveys or interviews with the players of *MapleStory 2* would not have fit within the time constraints of this thesis. However, future research could address this gap by utilizing questionnaires to assess players' motivations for avatar customization and content creation, for example. Possible discrepancies between player desires and behavior could only be pinpointed using such a method.

Avoiding bias was a separate struggle during the writing process. This is because in order to do such a close reading of the game, the author had to spend considerable amounts of time within the world of *MapleStory 2*. Because of this the author assumed a dual role – that of a researcher and that of a player simultaneously. Interactions with the game were mediated by the demands of this role, which contradicted itself at times; every step of the process had to be calculated to an extent, as opposed to the traditionally looser nature of play. This issue has been discussed extensively by researchers, for example by Sundén and Sveningsson (2012), who conducted ethnographic research of *World of Warcraft* using analytical gameplay as a data-gathering method. Despite all efforts to minimize the resulting bias, it should be kept in mind that gameplay elements suitable for analysis may

have been overlooked. However, the author believes that a qualitative assessment of an issue such as the affordances and boundaries of customization would have been otherwise exceedingly difficult to conceive.

Future research could examine the relationship between customization and the free-to-play model in contrast with pay-to-play models, such as the monthly subscription model used by games like *World of Warcraft* or *Final Fantasy XIV*. Furthermore, a diachronic analysis of the development of affordances in customization overtime could explore the depth of the influence of current societal topics on game design. For example, the 2002 MMORPG *Ragnarok Online* would serve as an interesting basis for comparison with recent titles. The findings of the present work could also themselves be used in game design in order to enhance the gameplay experience and, in some cases, lessen programming workload by dismissing needlessly constraining features.

7 CONCLUSION

A prominent issue in Nexon's *MapleStory 2* is that gender is embedded in the choice of sex. This choice must be made during the avatar creation process and has implications for the rest of the game experience, which stem from socio-cultural concepts and are not made immediately clear to the player. Instead, players are steered towards choices that align with a limited view on gender identity by means of a rigid binary system.

The forced presence of avatar sex dictates future customization options. This is useful for players who seek to achieve a look that corresponds to the conventional image of the male or female gender. However, it also prevents access from half of the appearance-altering items in the game. The in-game translation of the socio-cultural notion of gender identity does not correspond to the functions of gender identity in the offline world. In the game, avatar gender serves merely as a set of arbitrary constraints without being relevant to the gameplay in any other way.

Although customization plays a key role in *MapleStory 2*'s gameplay and is advertised as a selling point by the developer, features such as name or sex change are unavailable. These features are, contrastingly, often present in games where avatars do not need to be graphically distinguished from others, and where customization is not a means of communicating identities to other players. Lack of these mechanics despite the opportunity for their inclusion, which would correspond to the customization-oriented game design, indicates the presence of separate political perspectives. These perspectives have a negative impact on user experience, as players need to sacrifice progress in order to achieve certain ends in self-expression.

This thesis provides insight into how norms from offline society are encoded in videogames. They can be present for the sake of bridging the gap between the player and the fantastic virtual environment, compressing gameplay into chunks of related elements, or unconsciously reproduced as the default. However, research has shown that players who are offered a greater degree of avatar customization feel more connected to the avatar both during play and after. The connection between avatar and user can be used to enhance the game experience and/or foster healthy habits in the player. Furthermore, marginalized players are more likely to feel at ease and represent their real identities in their avatars if they are exposed to avatars customized in a variety of identity-affirming

ways beforehand. A diverse virtual world elicits a sense of trust in players, who are thus more likely to enjoy interacting with it.

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