All in a Day's Work: A study of World of Warcraft NPCs Comparing Gender to Professions

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Abstract

Extending Corneliussen's [2008] study of the gender disparity of *World of Warcraft* Non-Player Characters (NPCs), this paper examines the relationship between sex and profession of NPCs in in the same game. Because NPCs are understudied to date, we attempt to show where and how normative frameworks are, even if unintended, working very much to marginalize women. Our primary focus is to determine if stereotypical associations between types of jobs and the bodies that are depicted performing these jobs are being reinforced.

Our findings show that while there are male and female NPCs for all professions, they are not equally represented. There is no statistically significant pattern linking gender and profession, however, males still make up approximately two thirds of the NPCs associated with a 'job' within this particular gameworld. There seems to be subtle hierarchies at work within the distribution of professions within *World of Warcraft*. For example, ideas of gender in the field of medicine have been transposed into the gameworld through the use of some male first aid NPCs having the title 'Doctor', and yet the title given to a female trainer of the same profession is 'Nurse'. Ultimately, we argue that there are other forces, influences and processes to consider when examining a sociotechnical system like *World of Warcraft*, including player preferences and conditioning, the fantasy lore upon which the game draws (as well as produces) and the general presentation of gender roles in the larger sociotechnical context.

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Blizzard Entertainment's *World of Warcraft* (WoW) is currently the most popular game of the Massively Multiplayer Online Role-Playing Game (MMORPG) genre, with more than 12 million active players [Woodcock n. d.]. Because of its overwhelming popularity, WoW has been the focus of a growing body of academic work [Ducheneaut et al. 2006; Miller and Crowcroft 2009]. Researchers have used WoW to explore a variety of topics including design choices [McArthur et al. 2010; Pace et al. 2009]; social play configurations [Chen 2009; Williams et al. 2006]; and issues of

race, gender, and economics [Higgin 2009; Tronstad 2008]. In this paper, we work to uncover the imposition of frameworks like the sex of NPCs and their profession in the game on players, situating Blizzard's design choices within a larger discussion of gendered deptictions of work and labour within WoW.

0.1 Motivation

Our work is an extension of Corneliussen's "*World of Warcraft* as a playground for feminism" [2008], which looked at the distribution of male and female NPCs in the starting zones of WoW. We interrogate the approach of her study and show the ways in which an understanding of WoW as a sociotechnical system both extends her reading and analysis, and arrives at a very different conclusion. In her chapter, Corneliussen traces how gender is constructed, and in turn embodied, in WoW. The crux of her argument is that while we can look for "parity"[1] between male and female NPCs visible within the gameworld, the construction of WoW's "male-female dualism is clearly wasting the fantasy world's potential for playing with alternative gender labels" [2008, p. 81].

One of Corneliussen's findings is that there are not equal numbers of male and female NPCs present within WoW, and indeed, our study shows a similar distribution of NPCs by sex. However, we recognize that merely adding more female NPCs to the game will not 'solve' the problems identified by Corneliussen. Just because there might be equal numbers of NPCs in game does not mean that they are equitably represented. This paper seeks to address the question: how are males and females represented by profession, and what might that mean for better understanding the kind of 'hard wired' gender-encoding at play in WoW?

Our primary focus is to determine if gender is being used to reinforce stereotypical associations between types of jobs and the bodies that are depicted performing those jobs (c.f. Woodfield [2008]). Interrogating and expanding Corneliussen's study, which highlighted the unequal sex ratio of NPCs in WoW, we wish to move beyond a simple counting exercise to determine what NPCs can be observed doing. Quite simply, we are interested in whether or not patterns of 'male jobs' and 'female jobs' can be observed within Azeroth, and argue that the gameworld is not a neutral backdrop or map upon which players move about. Decisions about design and construction resonate through the game and shape the ways in which interactions, ideas, and identities are formed.

Design choices for the gendering of player characters and NPCs in WoW are not simply informed by fantasy lore and technical implementation. Visual cues for avatar choices and overall content and visual design will always reflect the larger sociocultural context of gamers [Rubenstein 2007], though possibly drawing more heavily on the subset of those who play the alpha and beta pre-release versions and who provide their feedback. Claiming that Blizzard is solely responsible for the design choices ignores the history and context of both WoW's gameworld and the larger canon of fantasy lore (often associated with Tolkien). By putting all the 'blame' on

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[1]Corneliussen's use of parity references the recent French Parité movement seeking equal representation of men and women in elected political positions [pg. 63].

to Blizzard, it also avoids discussions of the way that WoW is part of a larger sociocultural context, and this context works to shape the expectations and preferences voiced by MMORPG players.

0.2 World of Warcraft professions

In addition to combat, exploration and (collaborative or solo) play, WoW allows for players to choose from a variety of professions. The professions are divided between gathering and crafting: the gathering professions involve the acquisition of raw materials and crafting professions take these materials and turn them into other items (armor, weapons, potions, etc). In addition to being able to choose two professions, players are able to train in four secondary skills (cooking, first aid, fishing, and archeology[2]). While not explicitly required for gameplay, professions and secondary skills add an extra augmentation to one's play, by providing enhancement, armor, weapons, or materials that players can sell for a profit to NPCs or other players.

Corneliussen touches on professions in her chapter. As part of her larger discussion of "activities with feminine associations", she briefly examines the significance behind the naming of many professions. She notes professions that involve picking flowers or sewing clothes, activities often associated with femininity, have been given more gender-neutral labels like herbalism and tailoring. The use of the term 'tailoring' not only de-feminizes the profession, but in fact masculinizes it instead [pg. 79]. Corneliussen is optimistic, that while the binary of 'men's work' and 'women's work' is still perpetuated in the offline world, there is room for play and experimentation with gender roles in a gameworld such as WoW. Recognizing that this is an area largely unexplored, this study looks at what sorts of relationships (if any) can be observed between the distribution of sex and profession among WoW NPCs.

1 Theoretical Framework

It would be unfair to characterize WoW as being solely constructed by Blizzard and consumed in a non-critical manner by players. Informed and challenged by players themselves, via alpha and beta testing, and later through feedback given in forum posts and elsewhere, the larger sociocultural context in which Blizzard makes its choices cannot be ignored [Rubenstein 2007]. However, while players frequently voice their approval or disapproval of changes that might alter what they can do (e.g. changes to spells they can cast) and how they can play the game (e.g. changes to PVP or dungeon encounters), it seems that they do not tend to challenge the larger backdrop (e.g. lore) of the game.

In their 2008 characterization of gender and video games, Henry Jenkins and Justine Cassell identified the key 'gender issues' which have largely remained unchanged in the intervening two decades. These issues are: "(a) the debate about whether girls do and can and should play video games and (b) the concern that women are still vastly underrepresented in the fields that design digital technology" [2008, pg. 5]. Jenson and de Castell [2010] note that of the growing body of research that has documented girls/women playing and (sometimes) making games, much of it continues to reproduce gender-stereotyped accounts of what women/girls want, what they prefer, what they like, how they play and what choices they make when they play.

In some sense, the work highlighted by Jenson and de Castell [2010] has paralleled the research on gender and technology gen-

Occupation	Males	Females	P-Value
Alchemy	21	12	1.0000
Blacksmithing	30	9	0.0958
Cooking	24	12	0.7317
Enchanting	15	11	0.6852
Engineering	25	7	0.0982
First Aid	**14**	**18**	**0.0281**
Fishing	23	8	0.2641
Herbalism	**12**	**21**	**0.0032**
Inscription	10	8	0.6263
Jewelcrafting	9	6	0.7949
Leatherworking	24	16	0.7440
Mining	**24**	**2**	**0.0016**
Skinning	16	11	0.6937
Tailoring	18	15	0.3677

Table 1: *Summary of the breakdown of NPC sexes by occupation. The binomial p-values are also included, and the bolded rows indicated statistical significance on the 5% level.*

erally, continuing to focus primarily on the documentation of "choice," "lack of interest," and "differing ability" from their generalized and technologically able male counterparts. What remains in most of this work is a predominant, indeed, an almost intuitive reflex to crudely attribute difference as demarcated by male/female sex binaries. This reflex is present in even the most current work on gender and digital game play and presents itself no less persistently in research that sees itself as assiduously attempting not to re-invoke gender-/sex-based stereotypes [Walkerdine 2007; Williams et al. 2009; Winn and Heeter 2009]. For researchers whose interest is in explaining the status quo rather than challenging it, it is easy to find theoretical frameworks – most notoriously 'gender role theories' [Chodorow 1994; Williams et al. 2009] – which tell us that people do what they do because of 'gender role expectations'. It takes no intellectual effort (or political will) to simply describe stereotypical patterns and choices, and then to explain them by reference to stereotypes. Invariably, when observations are made about differences in play styles, for instance, or in representation and games, gender-normative reasons for these observed differences are advanced and widely accepted. But there is a major flaw in that approach, and it is this: just because girls and women are not represented as often in games or in non-stereotypical roles, does not mean that things *have* to be that way.

What we are not trying to do here is to reinforce stereotypes. Instead, we are attempting to show where and how there might be something more to it than just the norm. Also, because NPCs are understudied in most game studies research to date (for work that has engaged with this subject see for example [Klastrup 2009; Krzywinska 2008; Langer 2008]), we also want to show where and how those normative frameworks are working to marginalize women, even if this is done through unequal and stereotypical representation.

2 Methods & Data

Using the *World of Warcraft Wiki*, a community-generated database for game-related knowledge, we compiled a list of NPCs, focusing on sex and occupation. In existence since 2004, the wiki contains over 80,000 WoW related articles and is a one of a handful of major online sources for WoW knowledge. Data was collected about all NPCs currently active in the game and listed as being involved in training of a profession, including the NPC's name, sex, occupation, faction (Horde, Alliance, or neutral), their location in the game, and (if relevant) the highest level of training they provide.

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[2]We have chosen to exclude Archeology (and the rest of the Cataclysm expansion data about profession trainers) from this study as the expansion was still in the final stages of beta testing during the writing of this paper.

This list was then sorted according to profession and the data set was cleaned by removing invalid and duplicate NPCs. This resulted in a database of World of Warcraft NPCs whom players can visit to purchase profession training for their character. In total, the dataset contains 421 NPCs, representing 18 races and 14 professions.

Table 1 gives the breakdown of NPCs with respect to occupation and sex. In our dataset, there are 265 male and 156 female NPCs for an overall ratio of 63:37. In Figure 1, both sexes are presented as percentages. These percentages are broken down by profession, and compared to the overall sex ratio. Finally, a binomial test was performed on each occupation, and the resulting p-value is included in Table 1. Here, the p-value represents the probability of obtaining the stated number of males and females, or numbers even further from the expected 63:37 split, solely due to chance. That is, a small p-value represents a statistically significant divergence from the expected ratio.

3 Discussion

We found an overall binary sex breakdown comparable to that reported by Corneliussen. Consistently across all professions (except for first aid and herbalism) we found more male NPCs than female. Whereas Corneliussen reported that, on average, one third of the NPCs in her sample are female (the total sample size is unstated and only referred to in percentages throughout her chapter) [pg. 75], our sample showed that 37% of profession training NPCs are female.

Assuming a 5% confidence level, only three professions are statistically significant, that is, unlikely to be solely the result of chance: mining (reporting more male NPCs than would be expected), first aid, and herbalism (both reporting more female NPCs than would be expected). While our analysis does not seem to indicate a larger trend between professions and sex, it does indicate that two of these three outliers[3] may possibly be explained by gender patterns set by game lore.

When looking at the sex ratios of NPCs, mining trainers present considerably more male NPC trainers than would be expected statistically. While falling outside the 5% confidence level, we also noted that blacksmithing had 30 male NPCs and only 9 females. Dwarves are the majority of WoW NPCs associated with both of these professions. A part of gaming lore and fantasy literature long before WoW, Dwarves are commonly associated with the treasure-seeking Dwarves found in the writing of J. R. R. Tolkien. While the WoW Dwarves have an origin story that fits with the overarching narratives of the game, the stature, behaviour, and societal structure seem to stay fairly consistent with prior fantasy genre conventions that paint Dwarven societies as being primarily, if not completely male. When this larger fantasy lore allows for female Dwarves, they are often described as being bearded and having very masculine features [WoWWiki 2011a]. In WoW, Dwarves have physical attributes that differentiate between male and female bodies, but the overall tone of Dwarven fantasy lore remains, with males making up a larger portion of city guards and mining trainers.

In the case of herbalism trainers, we observed a higher number of female NPCs than expected. Over a third of these NPCs were Night Elves. Like male Dwarves, larger numbers of female Night Elves can be expected due to the lore of the game. The *World of Warcraft Wiki* entry for Night Elf lore explains:

> Prior to the conclusion of the Third War, Night Elf society was sharply divided by gender, with the vast majority

of men being druids and most women serving as warriors, priestesses, or a combination thereof. These gender roles more or less defined the culture of the Kaldorei for ten thousand years. In the years since the end of the Third War, this gender division appears to have eased in favor of more practical concerns, setting aside its historical strictures on membership [WoWWiki 2011b].

This seems contrary to Corneliussen's claim that the larger number of male Dwarves and female Night Elves appears to be linked to aesthetics. However, using game lore as part of our explanation for two out of the three outliers should not be read as an excuse for any and all design decisions made by Blizzard. Instead, if this break from the larger distribution of gender amongst professions can be accounted for by lore of the Dwarves and the Night Elves, why was a larger lore not constructed for *all* professions?

While we have observed that both male and females are represented for all WoW professions (albeit, not equally) we would like to suggest two examples that further complicate the idea of the existence of male and female NPCs being simply enough to represent "equality". The first involves the level of expertise assigned to NPCs within WoW. Just as there are novices and experts among players, there are NPC trainers who are labeled as apprentices, and NPCs who are labeled as being highly skilled (otherwise known as Grand Masters). For example, while both women and men can teach a player the skill of herbalism, 4 out of 5 Grand Master herbalism trainers are women. A similar trend is noted at the Grand Master level for mining, where 3 out of 4 trainers at this level are male. This might be viewed as supporting a sociocultural norm of expertise surrounding 'men's work' and 'women's work', represented here by the level of 'Grand Master'.

Additionally, there are interesting semantic differences in the titles given to many of the NPC profession trainers. For example, within the first aid profession there are five NPCs with titles: two males with the title 'Doctor', one female with the title 'Nurse', and two others with the title 'Anchorite' (one male and one female). Nurse Neela can train a player in the early levels of first aid, and yet both doctors teach first aid at the artisan level, one level above Nurse Neela's instructional capabilities. There are several female healers included within this profession, but a distinction between women's work and men's work within the field of medicine has been transcribed to the world of Azeroth through the use of the titles of doctor and nurse.

In some cases, female NPCs received feminized versions of a title, such as a female tailoring trainer labeled as a Sempstress or enchanting trainers as Enchantress (female), rather than Enchanter or High Enchanter (male). In the stereotypically feminine pursuit of cooking, WoW has more male trainers (24) than female (12). However, male trainers were given titles such as Cook or Master Chef, and none of the females are given a special title. The lack of female NPC titles also exists among inscription trainers: none of the female trainers have titles, while male NPCs are given titles such as Recorder, Scribe, Booker, or Professor. Finally, we wish to draw attention to the engineering profession, which is not statistically significant at the 5% level, yet it still has considerably more males (25) than females (7). The male engineer trainers have titles such as Artificer, Chief Engineer, or Tinkmaster, while only one female NPC is given a title (which in fact, reads more like a nickname). "Didi the Wrench" could be an indicator of Didi's particular adeptness with this tool, or it could be a play on "the wench". A similar sort of naming convention is used for two male fishing trainers: "Old Man Robert" and "Fishy Ser'ji". Much like the multiple ways "the Wrench" can be interpreted, so too are we left to wonder if "Fishy" is suspicious, or merely adept at his profession.

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[3] First aid trainers were split mostly between three races: humans, followed by undead, and then Draenei. This does not seem to have a relationship to lore, according to our research to date.
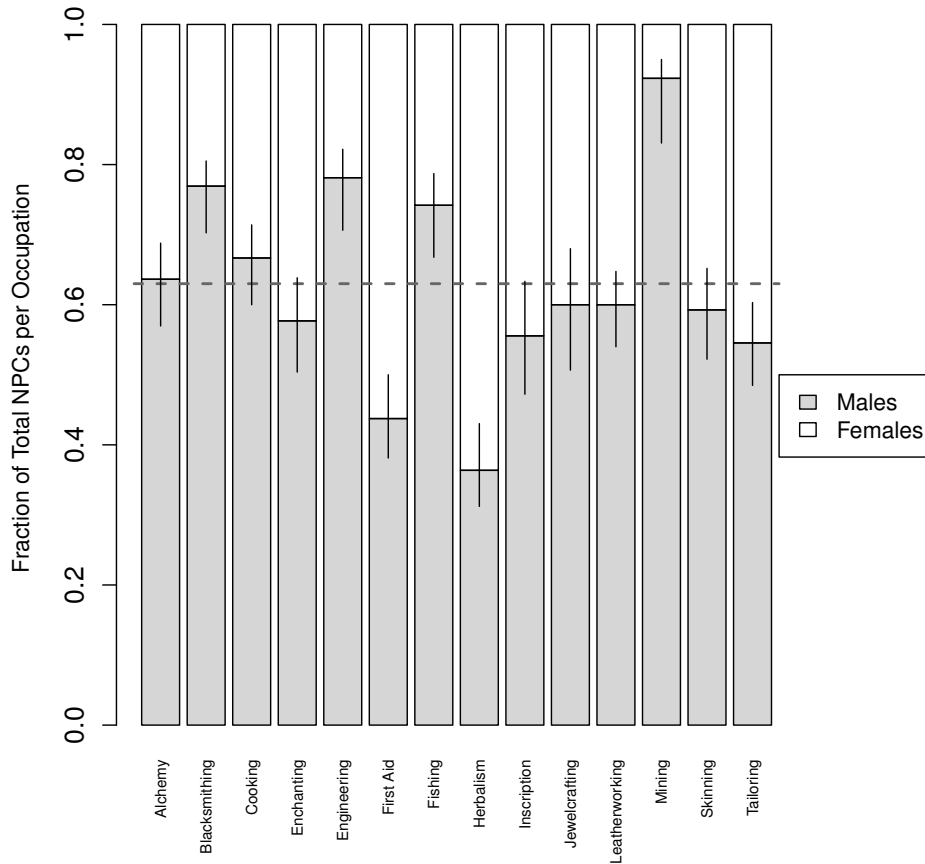
Figure 1: *Fraction of male and female NPCs, separated into occupation. The overall sex ratio (63:37) is shown as the grey dashed line. The upper error bars indicate the 1 sigma normal approximate error in the fraction of female NPCs, which the lower error bars indicate the normal approximate error in the fraction of male NPCs.*

Corneliussen theorizes that the overall ratio of male to female NPCs may have been chosen to reflect the real world demographics of WoW players [pp. 75 – 76]. While the data we present here cannot support or disprove this claim, we note that it does highlight the fact that male and female bodies are not equally represented within the world of Azeroth. Despite these divisions of labour seeming to have their roots in the lore of the gameworld, it is important to remember that just as the ratio of male to female NPCs was decided by the game's developers, so too has the lore been created by Blizzard. These may be tropes that are popular amongst other fantasy role-play games, but how have these conventions become so normalized? WoW is a fictional fantasy-themed MMORPG, yet it seems unfortunate that the stereotypes surrounding gendered labour have been encoded into the game. Rather than challenging gendered assumptions that persist in the lore from which they draw, perhaps by creating a matriarchal Dwarven society, Blizzard simply maintains the status quo.

4 Conclusion & Future Research

Corneliussen has laid the groundwork for studies like this one to build upon. However, we stress the importance for further research to take into account both the ways in which design choices for WoW are influenced not only by technological factors such as database

and software design, but also by the players' expectations and feedback, and by the larger gender relations of the world of which WoW is a part. As Johnson [2010] argues, when analyzing the impacts of a technology on gender relations, analysts must be conscious of the ways in which technology carries pre-existing notions of gender possibilities, presentations and performances. Rather than looking for equity (or 'parity'), the focus should be on creating and maintaining "technology that favors women" [pg. 42]. Imagining a gameworld that breaks from gendered stereotypes is not something easy to quantify, though Corneliussen does try to do so. This is not something that can be done merely by changing the sexes of NPCs to represent a more equal ratio between males and females. MMORPGs like WoW are sociotechnical systems that will be continually influenced both by their developers *and* their players, which are in turn influenced by the larger world in which both of these actors exist. And yet, at the most basic level, is it really too much to expect at the very least, equal numbers, equal expertise, and equal titling?

In documenting (largely) qualitative research projects that involve both boys/girls and/or men/women, research accounts continue to compress gender based differences into sex-based difference necessarily coded as male or female. As Jenson and de Castell [2010] point out, "this reflex is present in even the most current work on gender and digital game play and presents itself no less persistently

in research that sees itself as assiduously attempting not to rein-voke gender-/sex-based stereotypes" [pg. 63]. While our study did not uncover a systematic bias or overt gender stereotyping, neither equality, nor equity exist within the WoW gameworld.

We hope that this paper has drawn attention to conscious design decisions made by a developer. Specifically, we have argued against the ways in which it is troubling for academics and scientific literature to attempt to identify the gender relations of a gameworld by boiling them down to a strict numbering exercise of head counts of NPCs and ascribing a direct and linear binary relation between the gender distributions in the gameworld and an arbitrary designer choice. This latter sort of approach reinforces a tendency in academic research to "crudely attribute 'difference' as demarcated by male/female sex binaries" [Jenson and de Castell 2010, pg. 63]. We argue that there are a complex array of other forces, influences and processes to consider when examining a sociotechnical system like WoW, including player preferences and conditioning, the fantasy lore upon which the game draws (as well as produces), and how gender is depicted and enacted through professional roles, naming conventions, and the larger sociotechnical culture of the game.

References

CHEN, M. 2009. Communication, coordination, and camaraderie in world of warcraft. *Games & Culture 4*, 47–73.

CHODOROW, N. 1994. *Femininities, Masculinities, Sexualities: Freud and Beyond*. University Press of Kentucky, Lexington, KY.

CORNELIUSSEN, H. G. 2008. World of warcraft as a playground for feminism. In *Digital Culture, Play, and Identity: A World of Warcraft Reader*, MIT Press, Cambridge, MA, H. G. Corneliussen and J. W. Rettberg, Eds., 63–86.

DUCHENEAUT, N., YEE, N., NICKELL, E., AND MOORE, R. J. 2006. "alone together?": exploring the social dynamics of massively multiplayer online games. In *Proceedings of the SIGCHI conference on Human Factors in computing systems*, ACM, ACM, 407–416.

HIGGIN, T. 2009. Blackless fantasy: The disappearance of race in massively multiplayer online role-playing games. *Games and Culture 4*, 1, 3–26.

JENKINS, H., AND CASSELL, J. 2008. From quake girls to desperate housewives: A decade of gender and computer games. In *Beyond Barbie and Mortal Kombat: New perspectives on gender and gaming*, MIT Press, Cambridge, MA, Y. Kafai, C. Heeter, J. Denner, and J. Sun, Eds., 5–20.

JENSON, J., AND DE CASTELL, S. 2010. Gender, simulation, and gaming: Research review and redirections. *Simulation & Gaming 4*, Feb, 51–71.

JOHNSON, D. G. 2010. Sorting out the question of feminist technology. In *Feminist Technology*, University of Illinois Press, Chicago, IL, L. L. Layne, S. L. Vostral, and K. Boyer, Eds., 36–54.

KLASTRUP, L. 2009. The worldness of *EverQuest*: Exploring a 21st century fiction. *Game Studies 9*, 1, Accessed March 1, 2011 at http://gamestudies.org/0901/articles/klastrup.

KRZYWINSKA, T. 2008. World creation and lore: *World of Warcraft* as rich text. In *Digital Culture, Play, and Identity: A World of Warcraft Reader*, MIT Press, Cambridge, MA, H. G. Corneliussen and J. W. Rettberg, Eds., 123–142.

LANGER, J. 2008. The familiar and the foreign: Playing (post)colonialism in *World of Warcraft*. In *Digital Culture, Play, and Identity: A World of Warcraft Reader*, MIT Press, Cambridge, MA, H. G. Corneliussen and J. W. Rettberg, Eds., 87–108.

McARTHUR, V., TEATHER, R. J., AND STUERZLINGER, W. 2010. Comparing 3d content creation interfaces in two virtual worlds: World of warcraft and second life. *Journal of Virtual Worlds and Gaming 2*, 3, 239–258.

MILLER, J. L., AND CROWCROFT, J. 2009. Avatar movement in world of warcraft battlegrounds. In *Proceedings of the 8th Annual Workshop on Network and Systems Support for Games (NetGames '09)*, IEEE Press, DiGRA.

PACE, T., HOUSSIAN, A., AND McARTHUR, V. 2009. Are socially exclusive values embedded in the avatar creation interfaces of mmorpgs? *Journal of Information, Communication and Ethics in Society 7*, 2/3, 192–210.

RUBENSTEIN, A. 2007. Idealizing fantasy bodies. Accessed January 16, 2011 at http://www.theirisnetwork.org/archives/12.

TRONSTAD, R. 2008. Character identification in world of warcraft. the relationship between capacity and appearance. In *Digital Culture, Play, and Identity: A World of Warcraft Reader*, MIT Press, Cambridge, MA, H. G. Corneliussen and J. W. Rettberg, Eds., 249–264.

WALKERDINE, V. 2007. *Children, Gender, video games: Towards a relational approach to multimedia*. Palgrave Macmillan, Basingstroke, UK.

WILLIAMS, D., DUCHENEAUT, N., XIONG, L., ZHANG, Y., YEE, N., AND NICKELL, E. 2006. From tree house to barracks: The social life of guilds in world of warcraft. *Games and Culture 1*, 4, 338–361.

WILLIAMS, D., CONSALVO, M., CAPLAN, S., AND YEE, N. 2009. Looking for gender: Gender roles and behaviors among online gamers. *Journal of Communication 59*, 2009, 700–725.

WINN, J., AND HEETER, C. 2009. Gaming, gender, and time: Who makes time to play? *Sex Roles 61*, 1–13.

WOODCOCK, B. n. d. An analysis of mmog subscription growth. mmogchart.com v23.0. Accessed January 15, 2011 at: http://users.telenet.be/mmodata/Charts/Subs−1.png.

WOODFIELD, R. 2008. *What women want from work: gender and occupational choice in the 21st century*. Palgrave, New York, NY.

WOWWIKI. 2011. Dwarf. Accessed January 10, 2011 at: http://www.wowwiki.com/Dwarf#Female_dwarves.

WOWWIKI. 2011. Night elf. Accessed January 10, 2011 at: http://www.wowwiki.com/Night_elves.