

## Women creating Machinima

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### Abstract

We interviewed 13 female machinima artists to investigate the appeal of machinima for women. Are there any specific qualities of this game-based production that speak to those women? The research looked at engine use, personal situation of artists and motivation, production processes, and dominant themes in female produced machinima. Our findings indicate that machinima as a form of emergent play opens up promising possibilities for women to engage in game and animation production. Traditional social roles of women are present and remain relevant for machinima production but the accessibility of the tools provides a playground for these filmmakers to explore new genres and technologies and it supports the interest in meaningful engagement and artistic expression stated by participants in the study. We conclude that machinima can serve as a useful tool to explore and improve women's position in digital media development.

### Keywords

women, machinima, storytelling, media production

## Women in Machinima

### Introduction

Women comprise only a small fraction of the technical, design, and concept stages of game development. Women constitute approximately 8% for the areas of art, design, and audio. They make up less than 3% in programming (Duffy 2008). Not only are fewer women making decisions about game design, but they also earn substantially less (nearly \$10,000) than male colleagues (Duff 2008).

While women remain heavily underrepresented in key areas of the game industry workforce, the percentage of female gamers has grown significantly. In 2008, the Entertainment Software Association (ESA) reported that women amount to 40% of the gaming population (ESA 2008). This increase in female gamers has been mostly through casual games. The Casual Games Association (CGA) reported in 2007, that women comprise 74% of all online casual game players (Casual Gamers Association 2007). In contrast, other genres such as Massively Multiplayer Online Role Playing Games (MMORPG) continue to be dominated by a male population. According to a 2008 report, males accounted for 85.4% of MMO players (Yee 2008). In a previous study from 2006, Nick Yee, a researcher at the Palo Alto Research Center, reported that MMO users under the age of 18 are 96.8% male (Yee 2006). So while the sheer number of female participation has increased, it remains a minority in this core gaming sector.

Even with increasing player numbers the problem remains: how to improve the situation of women in the game industry? There are a range of different approaches that try to achieve this task. In a 2000 report the American Association of University Women (AAUW) recommends, "Educators, parents, and others should help girls imagine themselves early in life as designers and producers of software and games, rather than as consumers or end users of games" (American Association of University Women 2000). The AAUW also point out "girl friendly" features such as "software that has realistic as well as fantastical content and games that function as simulations of authentic contexts and situations" (ibid.). Accordingly, practice-based research projects like the *Alice* environment at CMU have shown female engagement through simulations in 3D virtual worlds as one successful method for teaching object oriented programming (Kelleher 2007).

We suggest to look at a bottom up approach that is not driven by the industry nor by academia, but by the much more diverse community of players itself. We propose machinima as an indicator for women's interest in game development and a possible gateway into the gaming industry.

### Machinima and emergent game play

Machinima is a form of emergent game play using 3D game engines, such as video games, to construct moving images. In machinima, the 'player' turns into a 'producer' who masters the game world and the game technology to create derivative videos. Machinima production often requires a tech-savvy use of complicated game engines, 3D modeling software, and other graphics packages. Over time, the creation of user-friendly tools and software for machinima has made the medium more accessible to users but expertise is still needed in the mastery of a game engine and its scripting/coding environments, the creative use of machinima creation software, expertise in storytelling and film-making – all valuable elements in game design. Machinima communities have been established for multiple game engines and within these communities machinima is continuously developing and maturing technically and artistically. That is why we suggest to look at machinima as an emerging educational tool as well as artistic practice (Lowood 2006).

Machinima fits many of the points suggested by the AAUW as it engages players to become media producers, express themselves creatively in the digital media format, and allows an enormous artistic freedom that can be exercised with improving technical mastery of the rather complex underlying game engine. At the same time, machinima is not driven or controlled by the gaming industry or limited by its structures. Instead, it grows from a bottom up community of independent creatives. Women in these communities spend a great deal of time not only playing the game but also utilizing the underlying engines. Their engagement with the technology reveals emergent forms of game play that may reshape our understanding of what motivates women to use game engines as producers and whether we can trace particularly female traits in their approaches to make machinima. This article focuses on the motivations of why women make machinima, along with the resulting themes and production practices. It is not a comparative study to male machinima production and certainly does not try to open a gender gap. Many practices and motivations for making machinima overlap across genders.

However, the focus is to better understand those properties appealing to women regardless of similarities or differences to male preferences.

### General Methodology

For our study, we conducted thirteen interviews with female machinima makers based on a core questionnaire. Female machinima communities were located by parsing through video uploads and forum postings from popular communities supporting machinima work such as YouTube and Machinima.com. The general search pointed to *Second Life*, *World of Warcraft (WoW)*, and *The Sims 2* as the targeted environments for our study. Female players were recruited from community sites such as YouTube, the mFem Facebook group, Sims99.com, and WarcraftMovies.com. Individual players were selected based on their production activity and presence in the machinima community. Participants interested in the study reviewed the goals and intentions of the research and provided informed consent prior to a scheduled interview time. In total we conducted thirteen interviews between May and August 2008. Ten of the thirteen interviews were conducted through Skype conference calls, which lasted approximately sixty minutes each. Three interviews were conducted through e-mail and written response. While the names and identity of our participants will remain anonymous, we will identify and provide examples of work from established females machinima makers to provide better context of the state of machinima produced by women.

### WHO ARE THESE WOMEN?

Our interview group consisted of machinima makers from a diverse background from education, dance, film, and theater to history and electrical engineering. The participants interviewed were from the United States, Canada, United Kingdom, and the Netherlands. The median age of our participants is thirty-three years old, with a range from twelve to sixty-five years. Thus, it almost matched the average game player's age, which the ESA locates for women in the United States at 35 years (ESA 2008). Overall, even though the selection of interviewees had to be limited, we note that it seems to reflect the current status quo.

Game engines influence production style, techniques, interests, and themes portrayed in the machinima they can generate. The participants' choice of game engines included: five

from the *Sims 2*, five from *WoW*, two from *Second Life*, and one from *Moviestorm*. Several participants were experienced machinima makers in at least one other game engine.

### *The Sims 2*

In a 2005 BBC-report 38% of female UK gamers between 25 and 50 reported playing simulation games (Pratchett 2005). *The Sims* was the most successful game in the simulation genre and amongst female gamers. In 2004, *Sims Online* producer Jessica Lewis reported *The Sims* franchise to have around a 53% female population base (Krotoski 2004). A 2004 report by the Entertainment & Leisure Software Publishers Association (ELSPA) claimed *The Sims* and its' spin-offs to have a 60% female population in online and offline versions (Krotoski 2004).

### *World of Warcraft*

*WoW* was released in 2004, and is currently the largest MMORPG with over 11.5 million worldwide monthly subscribers (Blizzard Entertainment) with portals such as *WarcraftMovies.com* supporting machinima. A significant difference between machinima production in *The Sims* and *WoW* is the role of the guild and its importance to the female machinima producer in *WoW*. Many of the collaborations and motivations revolve around the relationships developed in these social networks. As a general trend, again differing from the *Sims*, *WoW* players often create fantasy-themed pieces because of the genre of the game engine.

The average age of the *WoW* participants interviewed was 27 and thus younger than the average age of the overall group. They additionally were newer to machinima production than the overall interview group with an average of 2.8 years of experience compared to 3.38 years for the entire interview group and 4 years for the *Sims 2* participants.

### *Second Life*

*Second Life* is a user-generated virtual world and a dynamic emerging platform for machinima. In *Second Life*, users can buy and create content as well as interact with other players in an open-ended multiplayer 3D space, which makes it an ideal environment for

machinima production. Two of our thirteen participants worked primarily in *Second Life* touting this feature.

*One of the big advantages was we were able to create sets in real time. We could have that level. We could talk and build at the same time. There is so much custom content in Second Life, which means it's very time saving. You can buy something for small amounts of money that would take you weeks and weeks to make, which is brilliant although there is a cost involved. (Participant 2, Sims 2)*

### *Moviestorm*

*Moviestorm* is a real time 3D animation software program developed by the UK-based company *Short Fuze*. It does not have a substantial game-based female user base like the first three game engines, but is one of the first in a line of tools specifically marketed for machinima production; others include *iClone* and *Antics*. Several female machinima artists were recruited by *Short Fuze* to create demos for the new software program. Most of the participants who use *Moviestorm* are gamers who have transitioned into primarily machinima creation or mainly interested in machinima and do not come from a gaming background. For example, they might be interested in digital animation/filmmaking much more than in video games. The female participants of our study who used *Moviestorm* tended to be more experienced producers in years practicing and number of productions.

### *Customization*

All of the game engines have a high degree of customization options from modeling tools inside of *Second Life*, avatar customization features in both *WoW* and *The Sims 2*, and custom content communities. The importance of custom content was brought up in interviews across all of the game engines. The availability of customization options and custom content makes sense as an important factor for the machinima artist whose themes, as will be discussed later, are primarily personal life stories and fantasy narratives rather than recordings of pure gameplay that resides in the give content. It also is a sign of mastery not only of game play but extra game content and engine use. Despite differences stemmed from using a particular game engine, we found several trends in motivations, themes, and production practices of the female machinima artists across different game platforms.

## Homemakers to Filmmakers

One trend found across the female machinima makers was the occupation of the homemaker. This trend resonates with demographics and motivations of users in massive multi-player online environments. In Yee's study 13% of female players were homemakers (n = 438); 12.8% full-time students; 11.4% part time students or working; 48% full-time employed; 12.1% unemployed; 2.5% retired (2006). Out of thirteen machinima makers interviewed for this study, five participants conveyed they were stay-at home mothers currently or had been at one point during their gaming and machinima history. Two additional participants mentioned they were mothers, but did not indicate their current work status. Of the participants interviewed, two indicated they were full-time employed, two were students, two were unemployed, four were homemakers. Other occupations included performer and work in fashion.

The homemaker occupation sets the stage for many of the similarities found among the women interviewed. For one, it situates them in the context of the home and personal computer where gamers traditionally play and create machinima. This is unlike, for example, the arcade or the LAN parties of other player communities. In addition, some of the women's machinima reflect on the role of the homemaker, as will be outlined below. For several, this role both encouraged their entrance into machinima production but could also cause a hiatus.

*I felt I was ramping up on a runway, I was going fast on that runway but hadn't quite taken off just yet, then got pregnant and it all came to a screeching halt. I feel like the possibilities that I could do that again [is small]. It's just a lot harder when you have a kid. You just don't have as much time. (Participant 3, Sims 2)*

According to a Forrester study of online women and their media habits, online women are "more family-focused and pressed for time" than online men (Li 2004). Comparable family motivations were apparent in the females interviewed for our study on multiple levels. Several participants explained how playing games with family members first attracted them to the world of gaming.

*When the boys were little, from little to teenagers, I got into consoles. We played as a family thing. We would play Mario Kart Racing. [It was] playing as a family rather than by myself. (Participant 4, Sims 2)*

Three participants began gaming when they started dating a gamer. According to Yee, 27% of female players were introduced to gaming by a romantic partner, while only one percent of male players were introduced in the same way (Yee 2008).

*Then my fiancé bought me a new PC on my birthday 2 years ago. He also lent me his copy of The Sims 2 and then made me play World of Warcraft (even though I wasn't initially interested in it). Now I think I'm more into it than he is. (Participant 4, Sims 2)*

Male partners can also be helpful in the initial set up for machinima production.

*Well actually my boyfriend is also a computer crack. He is very good at technical things. He installed all the programs I needed and bought them and helped me a lot learning about technical things I didn't know before. (Participant 5, WoW)*

Thus, male partners play some role in the introduction not only of games as media but also as technology. In addition, the influence of partners extends into machinima collaborations and particularly in the writing process.

*I don't think I particularly excel in the actually story writing. I use my husband for a lot of that. I wish I was a better storyteller so I could make more, but I have to wait on him to continue. (Participant 3, Sims 2)*

Whether homemaker, mother, or partner - the ties to friends and family play an important part in the participants' machinima practice.

#### Not Hardcore Gamers by own Definition

Forrester defined players into casual, moderate, and hardcore gamers (Jackson 2006). Most of the women interviewed tended to fall into the moderate gamer category, while a few fell into the hardcore segment. More importantly, female machinima makers, for the most part do not consider themselves a 'gamer' as much as a 'Sims 2 player' or a 'Warcraft player.' The 'player' term itself becomes questionable as the participants spent twice as much time producing machinima than in traditional play. Even though most of the participants became serious gamers around the same time they started creating machinima, they tend to see themselves as machinima artists rather than hardcore gamers. In particular the *Second Life* artists did not consider themselves gamers, but inhabitants of a virtual world.

On average, MMO players spend twenty-two hours each week in-game (Yee 2008). For our study, the average number of hours spent in traditional game play is thirteen hours; the median is fourteen with a range from zero (persons who do not play games) to thirty hours a week or more. While the number of hours in traditional game play is lower than that of Yee's average online gamer, the number of hours each week creating machinima matches closely. The average number of hours spent creating machinima was 22 hours; the median was 25; with a range from 5 to 40 plus hours a week. Coupling the hours spent in traditional game play with that of machinima creation adds up to an above average amount of time in their game environment. At least two participants said they spent forty hours or more a week creating machinima. Not surprisingly, a couple participants described machinima as a part-time or full-time job. Notably this does not only mean work in the game engine alone but also with other tools needed for a machinima production.

Jackson argues that "hardcore gamers are typically technically minded, have the tools at hand, and are passionate about the emotive topic of gaming" (Jackson 2006). Males still primarily dominate this area. In parallel, Jones describes the origin of machinima as being born out of first person shooters (FPS) like *DOOM* and *Quake*, which had a fan-base of primarily young men (Jones). Jones attempts to create a historical trajectory of how male dominance in machinima created a gendered play space mostly appealing to males. According to Jones, this space undermined the early access of machinima technology to women. However, women in machinima do not come exclusively from a competitive or even gaming background and do not necessarily subscribe to the idea of competition. Their differing motivations for creating machinima reveal insight onto their understanding and perception of video games.

## MOTIVATIONS

The interviews confirmed other research findings on female game play concerning their motivations to engage in video games. These motivations include a focus on storytelling and socializing. However, the study revealed variations on these traditional motives as well as new ones particular to machinima production.

In a study on gender and play in online games, Yee grouped play motivations into achievement, social, and immersion components (Yee 2008). His results showed that male players scored higher in the sub categories advancement, mechanics, and competition

motivations. Female players scored higher in relationship and customization motivations. There was very small or no gender difference in socializing, teamwork, discovery, role-playing, and escapism motivations. Across the listed motivations, the average gender overlap was 87 percent. Yee concludes that the overwhelming majority of men and women like to do the same kinds of things in online games (Yee 2008). While we use Yee's findings as useful guidelines, some key game worlds of our study's participants were not covered by Yee's research.

### Creative Outlet

Making machinima is a creative and artistic practice. Not surprisingly, a commonality shared between the female participants in the interviews was an interest in expressing oneself through various artistic media. Many grew up practicing creative writing, painting, or drawing. Several had a passion for music and theater. Personal expression was a huge part of the participant's self-identity and motivation for creating machinima. For some of the participants, machinima was a way of extending their artistic work and experience into new fields. For one participant, machinima was a way of extending her background in theater performance into the digital realm. Another participant used her musical talents to create original music for her productions and tailored it to the game world. Often machinima is seen as an artistic outlet but one that demands re-adjustments:

*I would have gone to Art College. This [machinima] kind of replaced that. I stopped really painting. It was a way to be creative [by] combining two things I loved, gaming and the creative side I tucked away a bit. (Participant 4, Sims 2)*

Many saw machinima as vehicle of expression of their already existing interests as well as a method for exploring new ideas. For many this creative outlet stems from a previous art background. This background is paired with interests in gaming and technology and leads to a concept of machinima as a new creative outlet to fulfill often pre-existent artistic ambitions. This is particularly true of participants who had to compromise their artistic endeavors for other responsibilities such as caretaking and careers.

*Machinima gave me another outlet to get the story out. I also like that I can open up a creative side in me that often is suppressed by other things in my life. Through*

*machinima, I can explore ideas that I probably wouldn't have otherwise. (Participant 1, Sims 2)*

Interest in machinima – and by extension into a creative involvement with game technology – is especially powerful due to the artistic (and not the competitive) elements that feed an already existing creative interest.

Storytelling stood out as a key element of expression in machinima. Many of the participants said that as young children, they enjoyed writing and machinima is a way of building on their passion for story creation. Kelleher identified narrative as draw to girls and points to three key elements: it gives girls an opportunity for self-expression, it gives girls an opportunity to think through issues they encounter in their own lives, and it allows them to share stories with meaningful people in their lives (Kelleher 2007). These key points seem to be reflected in the community of female machinima producers.

### Control

Compared to creative expression, control over this process was a motivation that was not vocalized as much, but remained often apparent or implied. All of the women interviewed practiced as writers, camera operators, editors, performers, and directors in their machinima productions. The majority also did not collaborate at any great rate. Most worked on machinima projects by themselves controlling every aspect of production. One participant described her role as “I am the engine and steering wheel and the brains behind the operation.” This high level of control includes control of the underlying software.

A unique machinima piece often demands work on virtual sets, characters, in video editing programs, and other graphics packages. Many expressed that they spent a great deal of time building the sets and environments using extra packages (see below) to create graphics, textures, and props for their machinima. The artists actively research not only new artistic but also new technological options and often create highly customized production pipelines. Spurred by their artistic ambition these machinima makers are often eager to learn and adapt new software that supports their machinima production.

Levels of control are also relevant in the use of avatars as digital puppets. This type of control can be reminiscent to a type of doll playing some participants expressed doing as young children.

*It is hard to explain it really. There is something incredibly satisfying about creating a 3D world and having it come alive- a satisfaction from dollhouses and model making- having things come alive with animation. (Participant 2, Sims 2)*

This type of analogy has often been used to describe the type of play done inside of simulation games such as the *Sims* (Vosmeer 2008). Control, thus, remains an underlying factor but also one that leads to intense involvement with the production tools.

### Community

While many participants in this study found the social aspect of machinima highly motivating, it was not typically met through collaboration during production, but more through spectatorship and discussions of the final piece. These artists are involved in digital communities and contribute to relevant sites but communicate more about the result of their work, then about the production itself. Participants in interviews did mention "community" as another motivation for their involvement in machinima and collaborations are no exception for these producers. But the women interviewed tended to collaborate with only one other individual. At the same time, many appreciated their relationships with other members of the international machinima community even though several participants stated that they were not an overly active part of any particular community or only nascent members of the machinima community at large. The larger part of the participants tends to be concentrated within tight knit but more specialized communities that form around their game engine.

A significant number of younger women post machinima on *YouTube* and have successful channels but they barely use it for reasons beyond distribution. The participants perceives also a decline in community participation in some of the groups they participate in, like the *mFem* Facebook group and *Sims99.com*. One participant stated, "Women don't post messages." Many of the participants expressed a need for women in machinima to be more vocal and to provide support to their colleagues. This does not indicate reduced social engagement of the machinima artists in general but it might be a result of how the communities in machinima are currently structured. For example, especially the *WoW* machinima makers displayed a great sense of community inside of their guilds. Overall, *WoW* machinima artists tended to remain the closest inside of their gaming channel and the least likely to have collaborated with other machinima artists across different game engines.

On the distribution side, things look different. All participants felt it was important to have others view and appreciate their work. One of the aspects they enjoyed most about machinima was the ability to have something tangible to share with friends and family both online and offline. While collaboration is not a big part of the production process for these participants, they did partake in out-game socializing sharing machinima with friends and family (Taylor 2003).

Overall, the community aspect remains an attraction for female machinima makers but while their in-game communications and socializing (e.g. in their guild) are often thriving, the machinima forums and especially those that are not game-engine-specific seem to be less relevant.

## THEMES

According to a study on the role of women in the film industry “women were most likely to work on romantic comedies, romantic dramas, and documentaries and least likely to work on science fiction, action-adventure, and horror features” (Lauzen 2007). These working tendencies might be driven by the roles established in the industry. In machinima, where such given traditions do not exist, women did relate to these genres but also stepped outside this frame. For example, they showed a preference to science fiction and other themes.

### Meaningful Games

Female machinima artists are attracted to activity and play which they deem as meaningful. The construction of meaningful stories, thus, is a theme portrayed in the work of many female machinima artists interviewed for this study. Some of these themes cross into political, feminist, or other socially relevant themes.



Image 1. The Snow Witch (2006), Michelle Petit-Mee

A recurring theme in machinima filmmaker Michelle Petit-Mee's work is the use of folktales and fairy tales, as seen in her award-winning piece the *Snow Witch* (2006). The film is based on the Japanese ghost story Lafcadio Hearn that tells of a Japanese spirit named Yuki-onna who appears as a tall and beautiful woman with pale inhuman skin. On snowy nights she preys on unsuspecting mortals by using her icy breath to leave them as frozen corpses. In Petit-Mee's *Snow Witch* Yuki-onna spares a young boy's life under the premise that he never speaks of their encounter. The boy eventually grows up and marries a woman to whom he reveals his secret. His young wife turns out to be Yuki-onna, the snow witch. She spares his life again because of their children but is never seen again. These types of tales have an underlying moral story and lesson. Other participants also employ folktales in their work:

*I like to have stories that draw out of the viewer more than something that is just fun or for no reason. I want to write something that has meaning and makes people think of bigger issues. (Participant 3, Sims 2)*

*My machinima deals with real life issues and I hope to cause others to challenge their thinking. My machinima is aimed at a younger crowd. I hope to be a guidance in morality in a world full of misguided directions. I hope to use my machinima to help and inspire others. (Participant 1, Sims 2)*

Machinima like these might deal with relationships, love, and loss as opposed to a piece “that was cool, shiny, and pretty” as one participant put it. Accordingly, some participants conveyed an interest in politically themed machinima.

Even if the films concentrate on entertainment, they often deviate from the “cool” and “shiny” setting of the original game. Jun Falkenstein is a *WoW* machinima artist and a professional animation director, writer, and story artist. Her machinima are stand-alone films and understood by audiences who have never played or heard of the game *WoW*. Her series *Snacky’s Journal* is clearly aimed at light entertainment within a fantasy setting but at the same time applies traditional story telling techniques that focus on believable characters that reflect human behavior and derive their comic value from these references and not solely from a game-based context. *Snacky’s Journal* tells the adventures of gullible gnome Snacky and his best friend Annie in a mixture of slapstick comedy and best-friends movie that reaches audiences of all ages.



Image 2. *Snacky's Journal*, Episode 2 (2006), Jun Falkenstein

Much of the need for consistent stories, meaningful games and activities originates from the role of the caretaker. In a study conducted by Bertozzi and Lee, the authors describe how it was difficult for women to allow themselves to play games because it was an unacceptable use of time unless somehow useful (Bertozzi 2007). Games that do not offer meaning are considered unproductive. While it seems problematic to generalize social engagement with artistic practice and motivation, a parallel to a form of social context for the produced machinima pieces seems at place.

#### Science Fiction & Fantasy

When asked about her interest in science fiction, one participant explained that:

*It was an introduction to ideas I might not be into before. I was interested in science, and interested in the imaginative exploration of science and science fiction. (Participant 2, Sims 2)*

Another participant shared similar aspirations and took her exploration of science fiction to *Second Life*, approaching this world as a laboratory for experimentation.

Like Science Fiction, Fantasy was a consistent interest among female machinima makers across different. For example, most of the women mentioned their interest in fantasy themes as one reason why they started to play *WoW*. But this interest in the fantastic is not purely driven by the underlying game world. Unlike *WoW*, *Second Life* is more neutral in its genre and aesthetic, but still host to many fantasy machinima productions made by women.



Image 3. *The Dumb Man* (2007), Lainey Voom

*Second Life*'s thematic indifference can provide the necessary room for a visually freer form of fantasy, which can border on folktales or the surrealistic instead of the sword and sorcery themes of many game engines. Films like Trace Sanderson's *The Dumb Man* are clearly embracing these possibilities. Trace Sanderson aka Lainey Voom, is an independent artist in the UK and has been creating machinima since 2004. *The Dumb Man* is an experimental machinima piece using symbolic and metaphorical imagery to interpret the short story written by the American author and poet Sherwood Anderson. The machinima piece is experimental both at the aesthetic and technical level. It employs minimal post-production work, with most visual effects being built inside of the *Second Life* engine.

## Archetypes

Other themes portrayed in female-produced machinima directly resonate with the types of game features considered as “girl friendly.” Fashion reports, soap operas, and music videos are often associated with a female audience and are also prominent among female machinima makers. The female presence in *Sims 2* and *Second Life* coupled with almost unlimited custom content provides the tools to produce highly customized machinima of that kind, which some may view as stereotypical or persistence of clichéd gender roles. However, supporting existing interests in these themes can attract girls to digital media production. The increase of women in technological environments cannot be directed to deny pre-existent interests. Fashion reports and music videos still depend on the use of technologically sophisticated tools and engines like *Second Life* or *The Sims 2* are well suited for digital fashion shows. By supporting film production of machinima with themes attractive to female audiences, machinima has an additional potential to draw in female engagement. It is, however, significant that machinima production does not presuppose or enforce a gender specific behavior. It merely allows for one. The widespread focus on science fiction and fantasy in machinima demonstrates that female-produced machinima are indeed free to explore their own themes.

## PRODUCTION PRACTICES

Machinima production usually depends on a number of technological conditions: pre-production, in-game production and capturing, and post-production. The choices to make are the same for all machinima artists but some typical behavior seems to apply to women.

### Focus on Single Engine

Overall, the participants in the study expressed a tendency to focus on a single game engine for their machinima production. Most of the women interviewed felt that their chosen engine was sufficient for what they were trying to create and gave them the best tools for their work. Some participants heavily researched different game engines upfront. Two participants used at least four game engines, and one participant claimed to use close to ten different game engines for machinima. One participant even claims to have lost count of the different game engines she has used for machinima. That is why the average number of game engines used by the participants in the study to create machinima was close to three (2.8). However,

the majority of women used at most two game engines. Typically they tried another similar game engine or stuck to their initial one.

It has been argued that men gravitate toward the latest technology and financial activities in digital media while women tend to communication and problem solving (Nail, 2005). If such a distinction prevails in machinima the format itself adjusts the impact. While machinima is certainly dependent on its underlying technology, early adaptation of the newest game engine does not automatically lead to improved quality of the final result. Instead, early adaptor machinima pieces are often limited in their artistic conception as the producers are not yet familiar with the engine they are using. Insofar, machinima production offers somewhat of a pocket within the ever-evolving gaming technology, one that might be especially attractive to women.

### Exploring Technology

Another part of this technological exploration and exploitation is the use of game hacks that often demand in-depth knowledge of the game engine itself to allow machinima artists to tweak the game engine into a certain performance.

*I use a large amount of cheats for the Sims 2 that allows for possibilities while I'm filming that otherwise are unavailable during normal game play. (Participant 1, Sims 2)*

Finally, game-external software tools used for production and post-production were consistent amongst the women and mirror common trends for machinima production in general. Most used a variance of *Adobe* products for work on visuals, *Fraps* to capture the footage from screen, *Audacity* for sound production, and various engine specific tools such as the map viewer and model viewer for *WoW*.

A common practice among the women was that the longer they had been making machinima, the more they invested in better computers and software programs. Kate Fosc, of Pineapple Productions, is one such practitioner in machinima. Her research into different methods for machinima production has led her to employ the animation technique of 'Anymation' or the use of all available tools for digital expression. In her experimental film *Voices* (2008) she uses iClone, Moviestorm, and ZenCub3D, all of which are nontraditional game engines. *Voices* is an unstructured narrative about one man's battle with insanity.



Image 4. Voices (2008), Kate Fosk

Most of the women interviewed had little to no experience with video production before they began creating machinima and most of the women were successfully self-taught when it came to using tools today. In this regard, machinima seems to indeed operate as an effective gateway for women into digital technologies on a larger scale.

#### CONCLUSION

*I didn't really know I enjoyed editing slash directing at all, I had never explored that. Now that I've done machinima, I wish I could go back in time and go to school for film. I enjoy the filming, directing, and editing aspect of it enough that if I could do it over I might do that as a career. (Participant 3, Sims 2)*

Machinima avoids many pitfalls of traditional media education as it is operating bottom up, driven by the community of players. Although social norms certainly apply to these communities, the unstructured basis of machinima production provides an open entry point into digital production techniques. The women interviewed for this study have embraced this format mainly as a way of artistic expression. They do not necessarily consider themselves to be

hard-core gamers, nor do they blindly follow technical innovations in the industry but they are more focused on single game environments for their machinima production.

Machinima allows them to realize their artistic vision while it also served as an introduction into specific game technology (such as editors, model viewers, 3D modeling packages) and other digital technologies (such as editing, post-production of sound and image, and methods of distribution). Insofar, machinima manages to bring female artists closer to the game technology and the game production pipeline.

Finally, using machinima as a lens for understanding other emergent game behaviors can help to better understand female 'play'. Emergent behaviors of machinima creation such as story telling, role-playing, player expression, and heightened empowerment provide a lens for examining aspects of game play particular to female interests.

## REFERENCES

- American Association of University Women. (2000). *Tech-savvy: educating girls in the new computer age*. Washington, DC, American Association of University Women Educational Foundation.
- Bartle, R.A. Hearts, clubs, diamonds, spades: Players who suit MUDs. *Journal of MUD Research*, 1(1) (June 1996).
- Bertozi, E., & Lee, S. (2007). Not just fun and games: Digital play, gender and attitudes towards technology. *Women's Studies in Communication* 30, 179-204.
- Blizzard Entertainment Inc.. <http://www.blizzard.com/us/press/081121.html>
- Bruckman, A. (1993). Gender swapping on the internet. In Leiner, B. (ed.) Proceedings of INET '93. San Francisco, August 1993.
- Casual Gamers Market Report 2007. (2007). Casual Gamers Association.
- Cumberland, S. (2000). Private uses of cyberspace: Women, desire, and fan culture. MIT Communications Forum. January 25. <http://web.mit.edu/comm-forum/papers/cumberland.html> (accessed June 1, 2006).
- Duffy, J. (2008). Pay check please. Gamer Career Guide. Game Developer.
- Electronic Arts (Firm). (2002). *The Sims*. Redwood City, Calif, Electronic Arts Inc.
- . (2004). *The Sims 2*. Redwood City, Calif, Electronic Arts.
- Entertainment Software Association (Firm), & Ipsos Insight (Firm). (2008) *Essential facts about the computer and video game industry: 2008 sales, demographic and usage data*. Washington, D.C., Entertainment Software Association.
- Flanagan, M. (2006). Making games for social change. *AI & Society* 20(4), 493-505.

- Fron, J., Fullerton, T., Morie, J., and Pearce, C. (2008). Getting girls into the game: Towards a virtuous cycle. In Y. Kafai, C. Heeter, J. Sun and J. Denner (eds.) *Beyond Barbie and Mortal Combat*. Cambridge, Mass, The MIT Press.
- Golvin, C. (2008). The state of consumers and technology: Benchmark 2008. "Consumer Market Research". Retrieved July 5, 2008 from Forrester database.
- Gourdin, A. (2005). Game developer demographics: An exploration of workforce diversity. Mt. Royal, New Jersey: International Game Developers Association.
- Heeter, C. (2004) *Do girls prefer games designed by girls?* Michigan State University
- Jackson, P. (2006). Profiles of North American video gamers. Retrieved July 5, 2008 from Forrester database.
- (2008a). Benchmark 2008: Gen Y defines the traditional video gaming market. "North American Consumer Technographics". Retrieved July 5, 2008 from Forrester database.
- (2008b). Understanding the US video game player. Retrieved July 5, 2008 from Forrester database.
- Jones, R. (TBP). Pink vs. Blue: The emergence of women in machinima.
- Kelleher, C. and R. Pausch (2007). Using storytelling to motivate programming. *Communications ACM*, 50(7): 58-65.
- Kirschner, F., *MovieSandbox Tools*, <http://www.moviesandbox.com/>
- Krotoski, A. (2004). Chicks and joysticks. An exploration of women and gaming. London: ELSPA.
- Lauzen, M. (2007). The celluloid ceiling: behind-the-scenes employment of women on the top 250 films of 2007. San Diego, CA, San Diego State University].

- Li, C. (2004). Online women and their media habits. Retrieved July 5, 2008 from Forrester database.
- Lowood, H. (2006). High-performance play: The making of machinima. *Journal of Media Practice*. 7 (1), 25-42.
- Marino, P. (2004) *3D Game-based filmmaking. The art of machinima*. Paraglyph, Scottsdale.
- Mazalek, A. and Nitsche, M. (2007). Tangible interfaces for real-time 3D virtual environments. In Proceedings of the international conference on advances in computer entertainment technology. Salzburg, Austria June 13-15, 2007, ACM. pp 155-162
- Murray, J. H. (1997). Hamlet on the Holodeck: the future of narrative in cyberspace. New York, Free Press.
- Nail, J. (2005). Men Are From CNET, Women Are From iVillage. "Consumer Technology Profiles". Retrieved July 5, 2008.
- National Center for Women & Information Technology (2008) By The Number.  
Ncwit.org/BytheNumbers09.pdf
- Neumann, K. (2005) "Animation for the Nation" *Scene I*(1): 32-33.
- Newton, L. (2006). "Beyond Barbie and Mortal Kombat: new perspectives on gender, games and computing." *Comput. Entertain.* 4(2): 10.
- Pearce, C., Fullerton, T., Fron, J., and Morie, J. F. (2007) A Game of One's Own: Towards a New Gendered Poetics of Digital Space. In *Digital Experience: Design, Aesthetics, Practice*, Perth, September 2007, proceedings pp. 136-146.
- Pratchett, R. (2005). *Gamers in the UK: Digital play, digital lifestyles*. London: BBC.
- Sweedyk, E. and M. de Laet. (2005). "Women, Games, and Women's Games" *Phi Kapp Phi Forum*. 85(2). Research Library.

Taylor, T. (2003). Multiple Pleasures: Women and Online Gaming. CONVERGENCE - LONDON-. 9, 21-46.

Vosmeer, M., Jansz, J. and Zoonen, L. "'I'd Like to Have a House Like That": A Study of Adult Female Players of The Sims" Paper presented at the annual meeting of the International Communication Association, TBA, San Francisco, CA, May 23, 2007 <Not Available>. 2008-12-11 [http://www.allacademic.com/meta/p171501\\_index.html](http://www.allacademic.com/meta/p171501_index.html)

Yee, N. (2006). The demographics, motivations, and derived experiences of users of massively multi-user online graphical environments. Presence: Teleoper. Virtual Environ. 15, 3 (Jun. 2006), 309-329. DOI= <http://dx.doi.org/10.1162/pres.15.3.309>

--. (2008). Maps of Digital Desires: Exploring the Topography of Gender and Play in Online Games. In Kafai, Y., Heeter, C., Denner, J., & Sun, J. (Eds.), Beyond Barbie and Mortal Kombat: New Perspectives on Gender and Gaming (pp. 83-96). Cambridge, MA: MIT Press

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