

**Seeing Through the Screen: The Influence of Sexist Attitudes, Creator Identity, and Skin  
Colour on Avatar Perception**

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## Abstract

With the rapid growth of the gaming industry, the representation of gender and its implications for social perceptions has gained significant attention. While research on sexism in gaming has largely focused on narratives and characters, less is known about the perception of sexualised avatars. This thesis addresses that gap by exploring how individual sexist attitudes, the skin colour of avatars, and the gender of the avatar's creator influence perceptions of sexism.

The study employed a two-phase design. In the first study, 47 participants rated 110 World of Warcraft avatars on dimensions of sexism, objectification, femininity, and masculinity to select the most sexist avatars for Study 2. The second study utilized a 2 (Gender) x 2 (Skin Colour) experimental design in which participants evaluated 16 avatars based on these dimensions.

A multiple regression analysis showed that hostile sexist attitudes are associated with a higher likelihood of perceiving female avatars as embodying hostile sexism ( $B = .46$ ,  $SE = .12$ ,  $p < .001$ ). A repeated measures ANOVA revealed that hostile skin colour had a significant effect on the association of avatars with hostile sexism, Pillai's Trace = .133,  $F(1, 93) = 14.309$ ,  $p < .001$ . Additionally, skin colour had a significant effect on the association of avatars with benevolent sexism, Pillai's Trace = .105,  $F(1, 93) = 10.929$ ,  $p = .001$ . Hostile sexist attitudes were more commonly expressed when evaluating white female avatars, while benevolent sexist attitudes were more frequently expressed toward black female avatars. A Wilcoxon signed-rank test showed that male avatars, where creator and observer gender matched, were perceived as more hostile sexist ( $Z = -2.47$ ,  $p = 0.14$ ). With a mismatch, male avatars were rated higher in benevolent sexism ( $Z = -2.2$ ,  $p = .027$ ).

These findings contribute to understanding how biases influence virtual representations and perceptions in gaming environments. The study underscores the importance of examining digital media through the lens of social biases and offers insights into the broader implications for representation in virtual worlds. Future research could explore how other factors, such as facial phenotypes or avatar agency, affect perceptions of sexism in digital spaces.

*Keywords: avatars, sexism, sexist attitudes, creator gender, skin colour, perception*

## Introduction

In 2023, around 3.22 billion people played video games worldwide, which translates to 41% of the world's population (GilPress, 2024). Since 2016, the number of gamers has increased by at least 0.1 billion each year (GilPress, 2024). The trend shows that this number will rise in the coming years (Howarth, 2024). As a result, the gaming industry represents a huge market with substantial revenue and broad reach across the globe. For example, in 2022 the gaming industry generated \$406 billion in revenue, while the music and movie industry together generated only \$338 billion (Morton, 2023). Despite this growth, the gaming industry struggles with issues of representation and equality, particularly when it comes to female gamers and characters.

Gender inequality, an important topic in many scientific disciplines (Kasumovic & Kuznekoff, 2015), is also present in the gaming world. Gender inequality refers to the unequal treatment based on their gender, resulting in restricted opportunities, representation, or respect for women compared to men. Despite male and female gamers being close to equal in numbers (Fox & Tang, 2016), the term “gamer” is defined as masculine (Dewinter & Kocurek, 2018) and women continue to face significant obstacles to full participation in the gaming world. These obstacles stem from sexist elements present in game narratives, gaming communities, and the broader gaming industry (Cote, 2020; Lopez-Fernandez et al., 2019). For example, women are often perceived as intruders in “the last male space”, may even receive rape threats, while their abilities might be dismissed based on factors such as weight or age (Dewinter & Kocurek, 2018). In response to these issues, male and female feminists are condemning the gaming industry for creating games tailored to the audience of straight male players and call for diversity in games (Sarkessian, 2014; Zecher, 2018). This gender imbalance is not only evident in gaming communities but also in the portrayal of male and female characters.

Despite the diversity of games, male and female characters are often portrayed in a stereotypical way. Female characters are often underrepresented, hyper-sexualized, or portrayed as needing help (Ivory, 2006; Dill & Thill, 2007; Bowey et al., 2017). According to Kennedy (2002), even protagonist female characters like Lara Croft are often sexualized, despite being presented as capable and competent within their narratives. It is important to note that sexualisation does not always equate to sexist game content, as characters can still be depicted

counter-stereotypical ways, such as skilled and powerful (Kennedy, 2002). On the contrary, male characters are often depicted in a hypermasculine light, highlighting exaggerated aggression, strength and muscles. This is evident by characters in games like *Gears of War* and *Duke Nukem* (Bowey et al., 2017; Tompkins & Lynch, 2018). Therefore, the representation of male and female characters reinforces traditional stereotypes and contributes to gender inequality in the gaming world.

Further, the interaction with sexualised depictions can affect behaviour and attitudes of gamers. Research has shown that playing games with sexualised content increases the likelihood of harassment towards women in games (Fox & Tang, 2016), but also after playing the game (Dill et al.; 2008; Yao et al., 2009). Furthermore, women playing as sexualized female characters experience diminished self-efficacy, even when the character has counter-stereotypical characteristics (Behm-Morawitz & Mastro, 2009). Similarly, Ratan & Sah (2015) found that creating and playing as avatars with specific characteristics can trigger stereotype threat. Participants who customized and played as male avatars outperformed those with female avatars on a subsequent math test. This suggests that the avatar gender may influence behaviour outside the gaming context. The implications of sexualized content on attitudes, self-perception, and the perception of women call for further investigation. Understanding the impacts is crucial for addressing gender inequality in gaming.

One way to explore this issue further is by exploring cognitive processes that underlie how individuals perceive and react to oversexualized and gender stereotypical portrayals in games. When gamers encounter avatars in a virtual environment, they often use the same mental shortcuts they rely on in real life to categorize others (Nowak et al., 2015). They naturally classify others into social categories like gender, age or even skin colour (Crisp & Hewstone, 2007; Allport, 1954). The categorization helps to quickly assess information like others' emotions, intentionality, personality to simplify processes. However, this mental shortcut can activate and reinforce existing biases and stereotypes. Investigating the perception of sexist avatars could give insights into the sexist attribution of these categories and resulting stigmatization.

Despite a burgeoning body of literature that examines sexist representations in various forms of media, there remains a significant lack of comprehensive research focusing specifically

on avatars. There is a research gap concerning the influence of individual biases, as well as characteristics of avatars and their creators, on perception of sexist avatars. Existing studies often explore sexism in video games, social media, and advertising, but few delve deeply into how avatars are perceived in terms of sexism (Tompkins & Lynch, 2018, Bègue et al., 2017).

### **1.1 Sexism definitions**

Sexism in general can be classified as prejudice and discrimination that targets individuals based on their biological sex (Bill Pelz, n.d.). These attitudes and behaviours align with traditional sex-role stereotypes. Sexism can occur on various levels of society, as defined by Nelson (2009) "...individuals' attitudes, beliefs, and behaviours, and organizational, institutional, and cultural practices that either reflect negative evaluations of individuals based on their gender or support unequal status of women and men.". Sexism manifests in various ways, ranging from overt and confrontational to subtle and indirect forms (Swim et al., 1995).

Psychologists categorize sexism into two main forms: hostile and benevolent. Hostile sexism refers to aspects of sexism that align with Allport's classic definition of prejudice (Glick & Fiske, 1996). It involves negative attitudes and behaviours towards openly hostile and derogatory individuals. Benevolent sexism refers to attitudes that are still sexist and based on stereotypical views, but these attitudes are perceived as subjectively positive by the person holding them. Benevolent sexism views women and men in restricted traditional roles. For example, women are viewed as nurturing or in need of protection, while men are viewed as protectors (Glick & Fiske, 1996; Glick & Fiske, 1999). Benevolent sexism comes with a superficially positive feeling tone for the person expressing it but does not have to be positive for the receiver (Glick & Fiske, 1996). Broadly speaking sexism can be defined as any attitude or behaviour that promotes gender inequality.

### **1.2 Sexist attitudes in gaming**

The impact of exposure to sexist content in video games on attitudes has been studied, particularly in terms of short-term effects. Research indicates that short-term exposure to sexist game content can increase benevolent sexism (Yao et al., 2009; Stermer & Burkley, 2015; Bègue et al., 2017) and tolerance for sexually harassing women (Dill et al., 2008), even during gameplay (Fox & Tang, 2016). However, most studies have focussed on the short-term effects, raising the question whether these effects persist over time.

In contrast, the long-term effects of exposure to sexualised content remain less clear. For example, Breuer et al. (2015) found no significant long-term effects of sexist content on attitudes, suggesting that the relationship between exposure and attitudes may involve more complex mechanisms that require further exploration. The lack of longitudinal and experimental studies limits the ability to draw causal conclusions. It remains unclear whether exposure to sexist content leads to increased sexist attitudes or it is just a short-lasting priming effect. It is also an open question whether individuals with pre-existing sexist attitudes are more likely to enjoy and engage with such content. Furthermore, individuals with higher levels of sexist attitudes could perceive game content as more sexist than others do, complicating the interpretation of these findings. This state of research highlights the need for a deeper investigation into long-term effects of sexist game content.

To understand how long-term media usage influences attitudes and behaviour, cultivation theory offers a useful framework. “A sociological and communication framework which holds that regular and long-term exposure to media influences how media consumers perceive the world and behave in real life” (Virhia et al., 2024). First-order effects occur when perceptions of social reality become more aligned with the representation of media, while the second-order effects pertain to how these altered perceptions of reality impact an individual's personal beliefs and attitudes (Breuer et al., 2015). As mentioned above, current research shows mixed evidence for second-order effects related to the cultivation of sexist attitudes. Moreover, there is a notable gap in research on first-order effects concerning how the consumption of sexist media influences perceptions of the world or views of sexist avatars. Given that media first influences perceptions of the world and then, in turn, shapes beliefs and attitudes, it can be argued that if sexist game content affects attitudes and beliefs, it also alters sexist perceptions.

In the broader context of mass media, attitudes have been shown to shape perception. For instance, Liao (2023) found that social influence, shaped by attitudes, norms, and behaviour, significantly affects how people perceive the effectiveness of mass media. In Liao's observational study, exposure to mass media was identified as the most significant factor influencing social realities and attitudes. Importantly, while media exposure shapes attitudes, these attitudes, in turn, influence how media content is perceived. This reciprocal relationship is particularly relevant to gaming, where previous research has shown that exposure to sexist game

content can influence sexist attitudes. Therefore, it is plausible that individuals with pre-existing sexist attitudes may associate avatars in games with more benevolent and hostile sexism, reinforcing their beliefs and potentially influencing their gaming experiences.

The experience of sexist game content appears to be influenced by sexist attitudes. Bowey et al. (2017) conducted an experimental study demonstrating that individuals with higher levels of sexism were more likely to enjoy games featuring sexist content, with this enjoyment being facilitated by avatar identification. One explanation for this phenomenon could be that familiarity with an avatar enhances identification, thereby making the sexist content more enjoyable for those with pre-existing sexist attitudes. This identification process may also heighten sensitivity to associate avatars with more benevolent and hostile sexism, leading these individuals to interpret avatars through a more biased lens.

Finally, sexist attitudes not only appear to affect how individuals perceive people and avatars but extends to the broader environment. Meagher (2017) found that individuals high in benevolent sexism were more likely to assign gender to inanimate objects, even when those objects were viewed as neutral by others. This suggests that people with high levels of benevolent sexism perceive the world, including physical objects differently. This underscores the broader impact of sexist attitudes on perception. These attitudes could shape how individuals interpret both human and non-human elements of their environment.

### **1.3 Skin colour and sexism**

Black women and white women differ in their perception of prototypicality. Ghavani and Peplau (2013) found in their cross-sectional study that black women have different stereotypes than white women. They have found that of 15 attributes for a prototypical woman six attributes overlapped with the white women, while there was no overlap with black women. This suggests that stereotypes for prototypical femininity vary across ethnic groups.

Furthermore, white women are perceived as more feminine than black women. Johnson et al. (2012) conducted an experimental study with undergraduate students using the Implicit-Association-Test to examine the relationship between skin colour and gender. The results suggest that skin colour biases influence gender categorization. The association between the face of a black woman and “female” is much weaker compared to an Asian face. Additionally, black faces in general were more strongly associated with masculinity. Therefore, it was concluded

that perceptions of gender are influenced by skin colour (Johnson et al., 2012). Fitting the findings of Ghavani and Peplau (2013), Johnson et al. (2012) argues that there is more overlap between black and male faces, and more between white, Asian and female faces.

The association between stereotypical femininity and skin colour not only affects gender categorization but could also influence sexism directed at ethnic groups. McMahon and Kahn (2016) conducted an experimental study that found a statistically significant but small effect showing that white women are targeted with more benevolent sexism than black females. McMahon and Kahn (2016) argue that historically and systemically white women are more closely associated with the benevolent ideals of purity, need for protection and fragility and receive therefore more benevolent sexism. In contrast, historically black women were not linked to these ideals. For example, in the time of slavery, black women were stereotyped with the images of the “Jezebel” and “sapphire”. The Jezebel is the depiction of a hypersexual and sexually available black woman, while the sapphire represents an aggressive, angry and dominating black woman (Davis & Cross, 1979; Rosenthal & Lobel, 2016; Weitz & Gordon, 1993). This finding was further supported by the legal system in the US, where white female offenders were given less serious sentences compared to male offender because of protective paternalism. However, this phenomenon did not extend to minority groups (Visher, 1983; Young, 1986).

While media depictions of black women evolve, the issue of negative stereotypes persist in modern times. These negative depictions of a black women still hold true in modern media, with current stereotypes closely aligned with historical images (Littlefield, 2008; Rosenthal & Lobel, 2016). However, nowadays media also challenges the old views and shows more realistic representations of black women for example in shows like “Chewing Gum” and “Insecure” (Sobande, 2019). These representations offer a counter-narrative to the historical negative portrayals of black women.

Nevertheless, McMahon and Kahn (2016) found that when adding behaviour (adhering to or violating the traditional gender roles) to skin colour as a sexual subtype, black women were targeted with more benevolent sexism compared to white women. This could be due to the general expectation of black women to be sexually available and aggressive. When being chaste and conforming with the traditional gender roles, black women surpass these negative



expectations and are “rewarded” with benevolent sexism (McMahon & Kahn, 2016). This pattern can be explained by the shifting standard theory. The shifting standard theory suggests that individuals from stereotyped groups are judged based on different expectations for their group rather than against a universal standard (Biernat, 2003; Manis et al., 1991). When a group is expected to lack competence in a certain domain and a member exceeds those expectations, they are often rewarded with nonzero-sum behaviours (Biernat, 2003), like praise, cheers, or benevolent sexism (McMahon & Kahn, 2016).

#### **1.4 Impact of the avatar creator**

The impact of a creator’s gender on audience perception and evaluation of their work is shaped by societal stereotypes and biases. Digital media plays a significant role in shaping how gender is represented and perceived (Popa & Gavriliu, 2015). Research indicates that gender constructs and societal norms significantly influence how artistic work and digital avatars are perceived. For instance, studies reveal that audiences often make gender assumptions based on perceived characteristics of the work (Fatima & Sultana, 2022). Female artists are frequently associated with emotive or domestic themes, while male artists are linked to themes of power and authority (Fatima & Sultana, 2022). A study by Tian (2022) found that characteristics like colour intensity are used to infer the creator’s gender. Interestingly, the same study emphasized that the creator’s explicit gender did not impact the ratings of an art piece; rather, masculine cues were more influential. The combination of a male creator and masculine cues was particularly effective in achieving high ratings and auction prices.

Just as societal norms influence the perception of artistic work, these biases extend to digital media, particularly in the creation and perception of avatars. Male avatars and creators tend to be viewed more positively. In media environments, inferences about a creator’s gender and personality are often made based on avatar attributes such as clothing, gender, and attractiveness (Bélisle & Bodur, 2010). Male gamers, for example, are perceived as more competent, especially when they are presented at an expert level (Kelly et al., 2022). Consistent with the findings on artwork, masculine cues in avatars also lead to higher competence ratings (Kaye et al., 2017). Additionally, women who play as male avatars are perceived as more competent than when they use female avatars (Kaye et al., 2017).

This preference for masculine avatars reflects broader societal stereotypes that contribute to the perception that men are more capable and competent in gaming, while women often face biases that undervalue their skills (Morgenroth et al., 2020; Kuss et al., 2022). This gender bias may also affect how audiences evaluate avatars with creators of different genders, with masculine cues or male creators being viewed more favourably.

Despite the research on societal biases towards gender and competence in media, there has been little investigation into how the gender of an avatar's creator influences perceptions of the avatar's sexist content. Social Identity Theory (Tajfel & Turner, 1979) may offer a framework for understanding this. The theory suggests that people define their self-concept partly by their membership in social groups, such as those based on gender. Individuals tend to favour their in-group and discriminate against out-groups to maintain a positive social identity. This bias could influence how a sexist avatar is perceived, depending on whether the viewer identifies with the avatar's creator. While many factors influence these perceptions, it can be expected that participants who share the same gender as the avatars creator may associate less sexism with this avatar.

### **1.5 Present study**

This study addresses the research gap concerning the relationship between sexist attitudes and the perception of sexist game content, particularly avatars. The current study investigates whether individuals with high levels of sexist attitudes associate game avatars with more benevolent or hostile sexism than those with lower levels of sexism. Furthermore, this study tries to bridge the gap between the real world and the virtual world by examining whether black women, compared to white women, also receive more benevolent sexism in the virtual world. Lastly, this study addresses a significant gap concerning the effects of the creator gender on avatar perception. It investigates whether people who share the same gender as the avatar creator perceive the creator's avatar as more favourable and therefore associate it with less benevolent and hostile sexism. In sum, this study aims to fill the research gaps by unveiling individual, avatar and creator characteristics that influence the perception of sexist avatars.

To assess this, two quantitative survey studies were conducted. The first study was carried out to select highly sexist and objectifying avatars based on their appearance. In other words, the first study served as a pilot study laying the foundation for the second study by

selecting relevant stimuli. In total, 110 avatars were evaluated from which 16 were selected for the main study. The main study consists of a 2 (Gender) x 2 (Skin colour) design. The main study examined the variables of interest, measuring participants' sexist attitudes and assess their perception of the chosen avatars.

### **1.5.1 Research Question and Hypotheses**

Based on the identified research gap in the literature review the following research questions and hypotheses guide this study:

Q1: To what extent do sexist attitudes influence the perception of sexism in avatars?

**Hypothesis 1** People with highly sexist attitudes associate avatars with more sexism

Q2: To what extent does the skin colour of an avatar influence its perceived level of sexism?

**Hypothesis 2** White female avatars are associated with higher levels of benevolent and hostile sexism.

Q3: To what extent does the avatar's creator influence the perception of its sexism?

**Hypothesis 3** Participants whose gender differs from the avatar's creator associate the avatar with more benevolent and hostile sexism.

## **Study 1**

### **Method**

#### **2.1 Participants**

In this study 50 participants were recruited with convenient sampling with the majority of participants stemming from Sona system, a university internal recruitment platform, and some relatives and friends of the researcher. Sona system is used by the University of Twente to facilitate participation and recruitment for studies of students using a credit program. Because of incomplete answers the sample had to be reduced to 47. On average participants age was 21.8 years old ( $SD = 2.9$ ). The sample in the end had a strongly skewed gender distribution with 7 males (14.9%), 39 females (83.0%), and only one non-binary person (2.1%).

#### **2.2 Materials and measures**

The questionnaire asked participants for their age and gender. In total 110 avatars were created in the "World of Warcraft (WoW) head-dressing room and presented to the participants via a questionnaire. These avatars were created with different gender, skin colour, and outfits. To assess perceptions of the avatars four items were created. The aim of these four questions was to

measure the association of avatars and traits like masculinity, femininity, objectification, and sexualisation. Therefore, these items were created “This avatar is masculine”, “This avatar is feminine”, “This avatar is objectifying”, and “This avatar is sexist”, respectively. These four items were measured with a 5 point-Likert scale (1 = Strongly disagree, 5 = Strongly agree). These questions have no validated and reliable scale as basis, they were used to categorize and select the most relevant avatars for the main study.

### 2.3 Procedure

The study was approved by the ethics committee of the University of Twente (request number: 240112). Then, the questionnaire, using Qualtrics (Qualtrics.com), was uploaded to Sona systems and sent via E-mail to a small number of relatives and friends. Inclusion criteria for this study were people above the age of 16 and fluent English proficiency. First, participants provided their demographics, followed by the informed consent. Afterwards participants had to rate the WoW avatars.

### 2.4 Data analysis

IBM SPSS Statistics (29.0.1) was used to clean and analyse the dataset. Incomplete answers were deleted from the sample. When two avatars were similar but had a different skin colour or different haircut, they were marked by the same colour. To decide for the 16 most sexist avatars the mean scores of each item was calculated. The avatars with the highest mean scores of the variables “Sexist”, “Objectification” and “Masculinity” were chosen for the Study 2. For the selection of female avatars “Sexist Perception” and “Objectification” were most important, while for male avatars “Objectification” and “Masculinity” were more relevant.

### 2.5 Results

The mean and standard deviation of ratings for female and male avatars on the dimensions of sexist perception, objectification, masculinity and femininity are displayed in Table 1. Table 1 was shortened to include only avatars that scored relatively high in at least one of the dimensions, compared to the other avatars.

Overall female avatars were rated highest in both sexist and objectifying, with Avatar 77 (A77) ( $M = 4.1$ ,  $SD = 1.3$ ;  $M = 4.3$ ,  $SD = 1.2$ ) and A27 ( $M = 4.1$ ,  $SD = 1.2$ ;  $M = 4.3$ ,  $SD = 1.2$ ) receiving the highest ranks in each dimension. While only female avatars were rated as *sexist*, a few male avatars were also rated in the objectification dimension. However, male avatars mean

ratings were lower than those of the females. The highest mean rating in objectification for a male avatar was 3.7 ( $SD = 1.4$ ), ranked 14th (A39). In the masculinity dimension, most male avatars scored similar high ranging from a mean score of 4.5 to 4.9.

**Table 1**

	Sexist Perception	Objectification	Femininity	Masculinity
	<i>M (SD)</i>	<i>M (SD)</i>	<i>M (SD)</i>	<i>M (SD)</i>
A8	2.2 (1.3)	2.3 (1.3)	1.2 (0.5)	4.8 (0.5)
A12	3.9 (1.4)	4.1 (1.2)	4.7 (0.5)	1.2 (0.4)
A14	3.3 (1.3)	3.4 (1.4)	4.4 (0.8)	1.6 (0.8)
A15	3.2 (1.2)	3.4 (1.1)	4.6 (0.8)	1.5 (0.8)
A16	3.7 (1.3)	3.8 (1.3)	4.6 (0.6)	1.5 (0.7)
A17	2.6 (1.2)	2.9 (1.3)	1.5 (0.7)	4.8 (0.5)
A18	2.9 (1.2)	3.4 (1.3)	1.9 (1.0)	4.4 (0.8)
A19	3.1 (1.3)	3.4 (1.3)	4.4 (0.8)	1.7 (0.9)
A22	2.2 (1.2)	2.3 (1.2)	4.7 (0.6)	1.3 (0.6)
A23	3.4 (1.3)	3.7 (1.2)	4.8 (0.5)	1.4 (0.6)
A26	2.0 (1.2)	2.0 (1.2)	4.4 (0.7)	1.9 (1.0)
A27	4.1 (1.2)	4.3 (1.2)	4.8 (0.5)	1.2 (0.5)
A28	4.1 (1.2)	4.3 (1.2)	4.8 (0.4)	1.2 (0.5)
A29	3.7 (1.3)	3.9 (1.3)	4.7 (0.7)	1.3 (0.8)
A33	2.8 (1.4)	3.4 (1.6)	1.2 (0.7)	4.8 (0.7)
A34	2.5 (1.4)	2.9 (1.4)	1.1 (0.4)	4.9 (0.5)
A35	2.3 (1.2)	2.6 (1.3)	1.4 (0.8)	4.7 (0.5)
A39	3.0 (1.5)	3.7 (1.4)	1.6 (0.9)	4.6 (0.6)
A41	2.9 (1.3)	3.0 (1.3)	4.5 (0.8)	1.6 (0.8)
A42	3.1 (1.3)	3.4 (1.3)	4.5 (0.8)	1.4 (6.7)
A43	3.2 (1.3)	3.5 (1.3)	4.6 (0.7)	1.4 (0.6)
A45	4.0 (1.4)	4.2 (1.3)	4.8 (0.7)	1.3 (0.8)
A46	2.5 (1.5)	2.7 (1.5)	1.3 (0.8)	4.7 (0.8)
A47	4.0 (1.3)	4.3 (1.2)	4.8 (0.5)	1.3 (0.7)

A48	2.9 (1.5)	3.4 (1.5)	1.2 (0.5)	4.9 (0.4)
A52	3.0 (1.3)	3.2 (1.4)	4.6 (0.6)	1.3 (0.5)
A55	2.0 (1.1)	2.3 (1.3)	1.3 (0.7)	4.8 (0.7)
A62	2.4 (1.4)	2.9 (1.4)	1.3 (0.7)	4.7 (0.5)
A66	2.2 (1.3)	2.4 (1.4)	1.2 (0.5)	4.8 (0.7)
A67	3.3 (1.4)	3.5 (1.4)	4.7 (0.5)	1.4 (0.8)
A68	2.2 (1.3)	2.2 (1.3)	4.4 (0.7)	1.5 (0.8)
A70	2.5 (1.4)	2.9 (1.6)	1.5 (0.9)	4.5 (0.8)
A73	2.5 (1.3)	2.7 (1.4)	1.9 (1.2)	4.5 (0.6)
A74	3.3 (1.4)	3.6 (1.3)	4.4 (0.8)	1.9 (1.1)
A77	4.1 (1.3)	4.3 (1.2)	4.8 (0.6)	1.3 (0.6)
A78	3.5 (1.4)	3.7 (1.3)	4.8 (0.5)	1.2 (0.6)
A79	3.9 (1.3)	4.0 (1.3)	4.6 (0.6)	1.5 (0.8)
A81	2.2 (1.3)	2.3 (1.4)	1.2 (0.4)	4.7 (0.7)
A82	2.4 (1.4)	2.6 (1.4)	1.1 (0.4)	4.8 (0.7)
A83	2.3 (1.3)	2.4 (1.4)	4.3 (1.0)	1.6 (1.0)
A85	3.3 (1.4)	3.5 (1.4)	4.3 (0.8)	1.8 (1.0)
A87	2.2 (1.2)	2.6 (1.3)	1.6 (0.9)	4.3 (1.0)
A89	2.4 (1.3)	2.8 (1.4)	1.3 (0.6)	4.7 (0.7)
A91	3.8 (1.2)	3.8 (1.4)	4.6 (0.6)	1.5 (0.8)
A93	3.9 (1.3)	4.2 (1.3)	4.6 (0.8)	1.5 (0.8)
A99	2.5 (1.4)	2.8 (1.4)	1.3 (0.6)	4.7 (0.6)
A100	2.9 (1.3)	3.2 (1.4)	4.6 (0.6)	1.6 (0.8)
A102	3.1 (1.4)	3.6 (1.3)	4.7 (0.6)	1.4 (0.7)
A103	3.9 (1.3)	4.2 (1.2)	4.6 (0.8)	1.7 (1.1)
A104	2.0 (1.2)	2.1 (1.3)	4.7 (0.6)	1.4 (0.6)
A106	3.0 (1.3)	3.3 (1.3)	4.6 (0.6)	1.5 (0.8)
A110	2.5 (1.4)	2.7 (1.5)	1.4 (0.9)	4.7 (0.7)
A111	1.9 (1.3)	2.0 (1.3)	1.2 (0.4)	4.8 (0.5)
A113	2.6 (1.4)	3.0 (1.4)	1.7 (1.0)	4.5 (0.7)

---

*Note.* Avatars marked by the same colour had the same basic model only with slight changes like haircut, or skin colour.

The male avatars scoring highest in masculinity were often very muscular, had a beard or were wearing an armor. However, a lot of highly masculine avatars were not rated as sexist or objectified. Male avatars with a higher mean ranking in masculinity above 4.3 and a relatively higher rating in sexist perception and objectification were most often showing a lot of skin. The same accounted for female avatars. The ones that were almost naked were rated as most sexist and objectified. The chosen avatars for the main study can be seen in Figure 1 and Figure 2.

### Figure 1

*Chosen Male Avatars for Study 2*



**Figure 2***Chosen Female Avatars for Study 2***Discussion**

The pilot study aimed to find 16 avatars, eight female and eight male avatars, which are highly sexist. The issue with the avatars was that “sexist” was not properly defined, thus participants did not associate the concept with male avatars. Therefore, only female avatars were



perceived as sexist. It is important to mention that many of avatars were similar differing only in skin colour, hair cut or clothing. Thus, the avatars scoring high in the rankings were quite often more or less similar.

For the female avatars A77, A47, A93, A103, A91, A16, A7, and A28 were chosen for the main study. These avatars were perceived as the most sexist among all avatars with the highest scores in objectification. Avatar A77 and A28 were chosen, even though they are quite similar, they differ in skin colour and haircut. This avatar was wearing a revealing swimwear outfit, thus for the main study, the outfit of the avatar was changed to have a different outfit.

For the male avatars, there had to be a new way of selecting the most sexist avatars. Since no male avatar was rated as sexist, the avatars scoring higher in objectification and masculinity were chosen for the main study. All female avatars were humanlike, whereas a lot of avatars scoring high in masculinity did have animal or inhumane features. To maintain consistency between male and female avatars only human-like avatars were chosen. For each avatar the researcher tried to find another avatar high in masculinity that matches the outfit but looks different, to compare across conditions. A18 was chosen because this avatar was one of the few males scoring high in objectification even though this avatar did not score high in masculinity. Comparable to A18 was A39 being similar and high in objectification and masculinity. A35 and A113 are humanlike, comparable, and still score quite high in masculinity. A48 scores high in objectification and highest in masculinity and is comparable to A81. A82 can be compared with A89, and both score high in masculinity. The final avatars can be seen in (Appendix A).

### **3.1 Limitations and future research**

One limitation of this study was that participants simply had to agree/disagree with the statement “This Avatar is sexist”. As mentioned earlier, this concept was mostly applied to female avatars and did not extend to male avatars. That male avatars are not rated as sexist may be due to the traditional focus on the objectification and sexualization often associated with female avatars (Ivory, 2006; Dill & Thill, 2007; Bowey et al., 2017). Expanding the concept to include male avatars in future studies could provide a more comprehensive understanding of gender representations and the potential biases that exist across all avatars. In order to include men in the construct, it is better to measure this construct as a latent variable for the main study. Another aspect that needs to be addressed for the main study is the background and picture

quality. Some avatars were not greatly visible with a dark background, also the quality of pictures was lacking details. Setting a white background could improve visibility of all avatars drastically.

## **Study 2**

### **Methods**

#### **4.1 Study Design**

The study is a cross-sectional quantitative study using an online questionnaire. A 2(Gender) x 2 (Skin colour) design was chosen, for each avatar creator information like name and gender was provided (Appendix A) to investigate the research questions.

#### **4.2 Participants**

Initially, a total of 362 took part in this study, which was reduced to 94 participants because of incomplete responses of the main questionnaire, insults to the researcher, answering scheme (patterns), finishing the study in under seven minutes, or not agreeing to the informed consent. Of the remaining participants, 56 (59,6%) were male, 36 (38,3%) were female, and two (2.1 %) preferred not to mention their gender. The mean age of this sample was 27.6 ( $SD=7.6$ ) with people from across the globe but mainly the sample consists of people from the Netherlands, Germany, and the United States of America (see Appendix B). In total, 26 participants (27.7%) regularly played WoW, and most of the sample (43.6%) had never played WoW but knew the game. Participants were recruited in different ways using the convenience sampling method. First, participants were recruited through the online platform SONA Systems, like the pilot study. To facilitate this process, researchers listed on SONA were asked for a trade-off in participation, and flyers were hung up at the University of Twente (Appendix C). In addition, this study was posted in many Reddit threads like r/SurveyExchange, r/WoW, r/classicwow and r/CompetitiveWoW. Friends and family members of the researcher were sent a link to the survey to participate. Furthermore, Participants were recruited through Prolific (Prolific.com), a British company for providing survey participants. Exclusion criteria were participation in the first study and being under the age of 18.

#### **4.3 Materials and Measures**

The questionnaire collected background information from participants including age, gender, education level, country of residence and experience with WoW. In the questionnaire,

participants were shown the 16 avatars chosen from the pilot study including creator information (Appendix A). For each of these avatars, sexist scores and objectification levels were assessed.

#### ***4.3.1 Ambivalent Sexism Inventory (ASI)***

The ASI, developed by Glick and Fiske (1996), measures benevolent and hostile sexism targeting women. In total, the ASI is a 22-item questionnaire measured with a 6-point Likert scale with 1 = Strongly Disagree and 6 = Strongly Agree<sup>1</sup> (Appendix D). Nevertheless, higher scores on the ASI indicate greater levels of sexism towards women. The two latent variables benevolent and hostile sexism are both measured with 11 items. Benevolent sexism has three subparts: “Protective Paternalism”, “Complementary Gender Differentiation”, and “Heterosexual Intimacy”. One example item assessing benevolent sexism is “No matter how accomplished he is, a man is not truly complete as a person unless he has the love of a woman.” (Glick & Fiske, 1996). One example item of hostile sexism is “Women are too easily offended.”. In the original study from Glick and Fiske (1996) the ASI scale had high reliability throughout the six studies conducted with a Cronbach’s alpha of .87. The subscales BS and HS had a Cronbach’s alpha of .79 and .88, respectively.

#### ***4.3.2 Ambivalence towards Male Inventory (AMI)***

The AMI was also developed by Glick and Fiske (1999) and measures benevolence and hostility towards men. This questionnaire consists of 20 items measured with a 6-point Likert scale ranging from 1 = Strongly Disagree to 6 = Strongly Agree<sup>1</sup> (Appendix E). When people score higher in the AMI it predicts more sexism towards men. The two subscales are both measured with 11 items. Also in this scale, benevolence towards men was further divided into “Maternalism”, “Complementary Gender Differentiation” and “Heterosexual Intimacy”. However, for the AMI, also hostility towards men was further split into “Resentment of Paternalism”, “Compensatory Gender Differentiation” and lastly “Heterosexual Hostility”. One example item of benevolent sexism is “Men are more willing to take risks”. Overall, in the original study from Glick and Fiske (1999) the AMI showed high reliability throughout three

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<sup>1</sup> Usually measured with a 5-point Likert scale with 1 = Strongly Disagree and 5 = Strongly Agree

studies conducted with a Cronbach's alpha of .85. For the subscales benevolence and hostility towards men, the coefficients were .81 and .83, respectively.

### 4.3.3 Avatar questionnaire

The researchers learned from the pilot study that simply asking people whether they agree or disagree that an avatar is sexist is not sufficient or predictive of how sexist the avatars are perceived to be. Thus, for the main study participants are still asked whether the avatars are masculine or feminine, adhere to gender norms or are reduced to looks. For measuring the sexist perception of avatars AMI and ASI items are reformulated for male (Table 2) and female avatars (Table 3), respectively. These questions were assessed with a 5-point Likert scale ranging from 1 = Strongly Disagree to 5 = Strongly Agree.

**Table 2**

*Reformulated Items measuring Sexist Scores for Male Avatars*

Avatar Gender	Latent Variable	Original Item	Reformulated Item
Male	Benevolent Sexism	Men are more willing to take risks than women.	This Avatar would be willing to take risks.
		Men are more willing to put themselves in danger to protect others.	This Avatar would put themselves in danger to protect others.
	Hostile Sexism	Men are less likely to fall apart in emergencies than women are.	This Avatar would fall apart during an emergency. *
		Men will always fight to have greater control in society than women.	This Avatar would fight to have a greater control over others.
		Most men sexually harass women, even if only in subtle ways, once they are in a position of power over them.	This Avatar would harass others, also in subtle ways.
		When it comes down to it, most man are really like children.	This Avatar would behave like a child.

*Note.* \*Negatively phrased item

**Table 3**

*Reformulated Items measuring Sexist Scores for Female Avatars*

Avatar	Latent Variable	Original Item	Reformulated Item
Female	Benevolent Sexism	Women, as compared to men, tend to have a more refined sense of culture and good taste.	This avatar would have a refined sense of culture and good taste.
		Women should be cherished and protected by men	This avatar would deserve to be cherished and protected by others
		In a disaster, women ought not necessarily to be rescued before men. *	This avatar would need to be rescued first in a disaster
	Hostile Sexism	Women are too easily offended.	This avatar would be too easy offended.
		Many women are actually seeking special favours, such as hiring policies that favour them over men, under the guise of asking for "equality."	This avatar would be looking for special favours from others.
		Women seek to gain power by getting control over men.	This avatar would seek power by getting control over men.

*Note.* \*Negatively phrased item

#### 4.4 Procedure

Ethical approval was obtained from the ethics committee of the University of Twente (request number: 240229). As mentioned in 4.2, participants were recruited and provided with an anonymous link or QR code to access the survey measured with Qualtrics. Participants were told that the study would take around 20 minutes.

The study starts with study information, about what the participant can expect in the study (procedure). The participants are deceived. They are told that they have to examine avatars created by players. After agreeing to the informed consent participants had to indicate their demographics like age, gender, and WoW experience. The next stage of the survey is to view a picture of a creator's avatar, answer the statements, and have the opportunity to add any further remarks. The order in which the 16 avatars paired with the creator were shown to the participants was randomized within Qualtrics. The last step in the survey was filling in the AMI and ASI questionnaire to assess participants' sexist attitudes and to indicate any criticism or thoughts about the study.

#### **4.5 Data analysis**

The collected data was retrieved from Qualtrics as a SAV file and analysed with IBM SPSS Statistics (29.0.1). The first step was to create a mother data set. Participants were deleted from the dataset that fulfilled the criteria mentioned above, for example, screening out participants who did not finish the survey. The dataset was further cleaned by removing confidential and irrelevant information like IP addresses. Negative formulated items were reversed, and new variables were calculated to compare across groups rather than individual avatars. To calculate a new variable the relevant items are added and divided by the number of items. For all statistical analyses a statistical significance level of .05 was chosen.

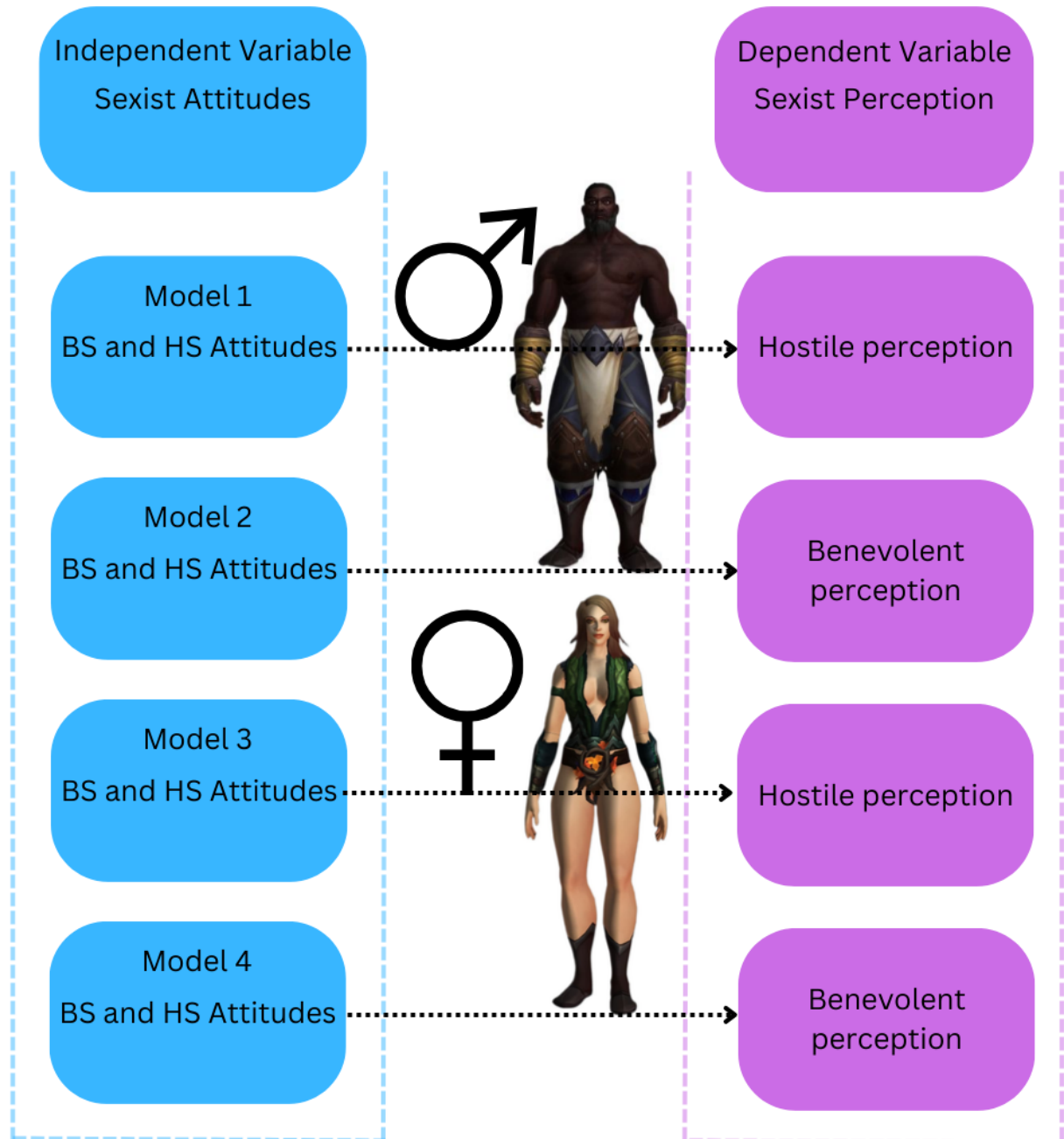
Firstly, before conducting the analysis for each hypothesis assumptions were tested. To assess the normality of the variables or residuals, the Shapiro-Wilk test was used. A Levene's test was conducted to investigate the equal variance across groups. If applicable, homoscedasticity and linearity are tested by inspecting scatter plots of standardized predicted values versus standardized residuals. As the last assumption that needs to be tested, multicollinearity was tested using Spearman's rank correlation with the cutoff value of 0.7.

For the analysis of the first hypothesis, dealing with the influence of sexist attitudes on sexist perception, a Spearman's rank correlation was conducted to inspect the relationship between sexist attitudes and sexist perception. A scatterplot was created for visual inspection of the correlation. Afterwards, four multiple linear regression analyses using the simple bootstrapping method, with a sample of 2000, were conducted to examine the relationship between sexist attitudes (predictor variables) and sexist perceptions (outcome variables). Four

models, two for male avatars and two for female avatars, will be tested that are shown in Figure 3.

**Figure 3**

*Four Linear Models Assessing the First Hypothesis*



The next analysis assessed the skin colour of an avatar and its perception. First, boxplots for avatars both genders and skin colours are presented, in terms of benevolence, hostile sexism,

adherence to gender norms, and objectification. It was not expected that the data is normally distributed because the avatars were not chosen randomly but were picked based on certain characteristics making the avatars one-sided. Thus, a 2 (White, Black) x 2 (Male, Female) repeated measures ANOVA was carried out for hostile, benevolent sexist perception, adherence to gender norms, and objectification. Pillai's Trace was utilized to enhance the robustness of the model.

To investigate the impact of the participant-creator gender relationship on sexist perceptions (Research Question 2), 2 participants were excluded from the sample indicating the gender “prefer not to say”. The Wilcoxon signed-rank test was used to compare the groups ranks between a match and mismatch of participant-creator gender. This was calculated for both male and female avatars in terms of hostile and benevolent perception.

## Results

### 5.1 Sexist attitudes

#### 5.1.1 Assumptions checks the effect of sexist attitudes

The assumptions of linearity and homoscedasticity were assessed using a scatter plot of standardized predicted values versus standardized residuals. For all models, the scattered plots seem to be randomly allocated around 0, except for Model 4 having some clustering around 0. Regarding homoscedasticity, all models show deviation at higher or lower levels of predicted values. Next, the unstandardized residuals were tested with the Shapiro-Wilk test, Model 1  $W(94) = .95, p < .001$ , Model 2  $W(94) = .96, p = .003$ , Model 3  $W(94) = .98, p = .06$  Model 4  $W(94) = .91, p < .001$ . Thus, only the residuals of Model 3 were normally distributed. There was no multicollinearity between the predictor variables, all scores were below 0.7 (Table 5). Even though, the data of model 4 did not meet the assumption of linearity, a multiple linear regression was conducted. Since the data violates the assumption of normality and homoscedasticity, the bootstrapping method was used. Moreover, because the normality assumption was violated (Table 4), a Spearman correlation was calculated instead of a Pearson correlation.

**Table 4**

*Shapiro-Wilk Test*

Sexist Attitudes	<i>W</i>	<i>DF</i>	<i>p</i> -value
AMI HS	.98	94	.304



AMI BS	.97	94	.041*
ASI HS	.99	94	.357
ASI BS	.99	94	.338
<hr/>			
Avatar Gender/Sexist Perception Type			
<hr/>			
Male HS	.94	94	<.001*
Male BS	.96	94	<.001*
Female HS	.93	94	.003*
Female BS	.90	94	<.001*

*Note.* B = Black skin colour, W = White skin colour, HS = Hostile Sexism, BS = Benevolent Sexism, G = Gender norm, RtL = Reduced to looks. \*  $p < .05$  \*\*  $p < .001$ .

### **5.1.2 Hypothesis 1: People with highly sexist attitudes perceive avatars as more sexist.**

To test the hypothesis that sexist perception is predicted by sexist attitudes, first a correlation between these variables is calculated followed by multiple regression analyses using the bootstrapping method. In this analysis, sexist attitudes are the predictor variables whereas sexist perceptions are the outcome variables.

Looking at the correlations (Table 5, Figure 4) benevolent and hostile attitudes towards males ( $r = .23, p < .05$ ) and females ( $r = .31, p < .001$ ) are significantly correlated. The benevolent perception was also significantly correlated with hostile attitudes towards males ( $r = .23, p < .05$ ), but had a non-significant relationship with benevolent attitudes ( $r = -.03, p = \text{n.s.}$ ).

Model 1 examined the effects of benevolent and hostile sexist attitudes on hostile perceptions of male avatars. This model was not statistically significant,  $F(2, 91) = 1.38, p = .26$ . The analysis revealed that hostile and benevolent sexist attitudes explained 2.9% of the variance in the hostile perception  $R^2 = .03$ . Hostile attitudes ( $B = .05, SE = .05, p = .342$ ) and Benevolent attitudes ( $B = .60, SE = .06, p = .259$ ) were both insignificant associated with the hostile perception of male avatars.

The second model examined the effects on the benevolent perception of male avatars. This model was not significant and explained 5.6% of the benevolent perception,  $R^2 = .06, F(2, 91) = 2.69, p = .073$ . Hostile attitudes were significant in predicting benevolent perceptions ( $B = .11, SE = .05, p = .024$ ), but Benevolent attitudes were insignificant ( $B = -.04, SE = .05, p = .412$ ).

Model 3 assessed the effects of benevolent and hostile attitudes on hostile perceptions of female avatars. The model was statistically significant explaining 20.9% of the variance in the hostile perception,  $R^2 = .21$ ,  $F(2, 91) = 12.00$ ,  $p < .001$ . Hostile attitudes significantly predicted hostile perception ( $B = .46$ ,  $SE = .12$ ,  $p < .001$ ), whereas benevolent attitudes were insignificant ( $B = -.05$ ,  $SE = .18$ ,  $p = .80$ ).

The last model looked at the benevolent perception of female avatars. The model was insignificant and explained 4.2% of the variance in benevolent perception,  $R^2 = .04$ ,  $F(2, 91) = 1.99$ ,  $p = .143$ . Both predictor variable hostile attitudes ( $B = .17$ ,  $SE = .09$ ,  $p = .062$ ) and benevolent attitudes ( $B = -.02$ ,  $SE = .16$ ,  $p = .908$ ) were insignificant.

Overall, the results indicate that stronger hostile attitudes towards men are associated with a higher likelihood of perceiving male avatars as benevolently sexist. Additionally, higher hostile sexist attitudes towards women correspond to a greater hostile perception of female avatars, whereas stronger benevolent sexist attitudes correlate with a lower hostile perception.

**Table 5**

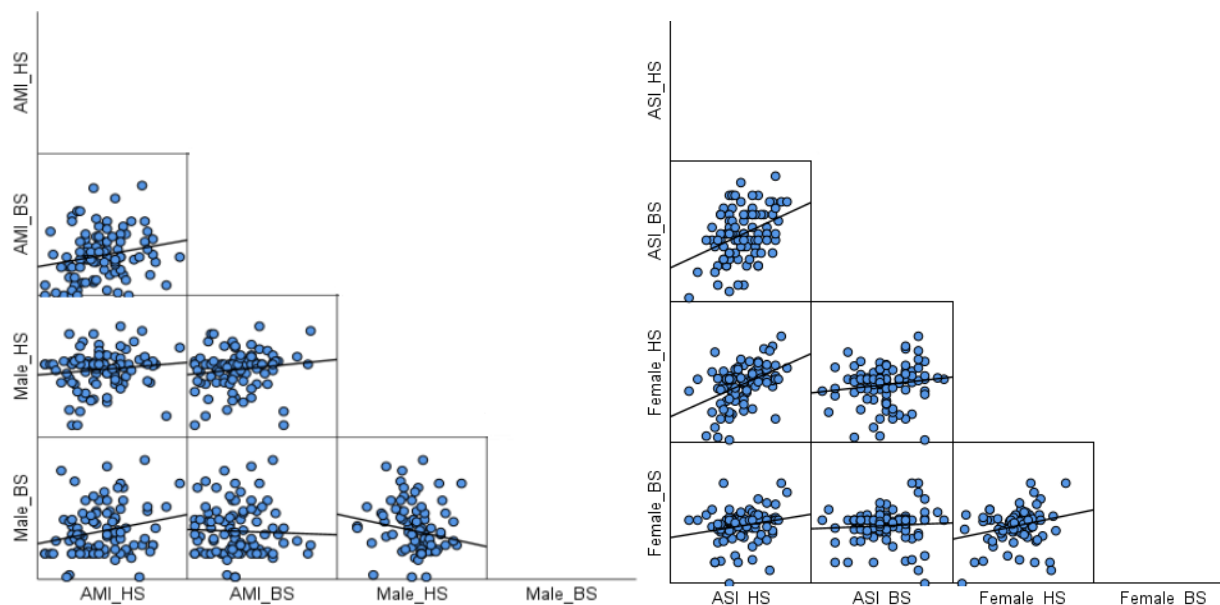
*Spearman's Correlation Between Sexist Attitudes and Sexist Perception of Male and Female Avatars*

Measure	1. AMI HS	2. AMI BS	3. Male HS	4. Male BS
1. AMI HS	--			
2. AMI BS	,23*	--		
3. Male HS	,10	,19	--	
4. Male BS	,23*	-,03	-,26*	--
Measure	1. ASI HS	2. ASI BS	3. Female HS	4. Female BS
1. ASI HS	--			
2. ASI BS	,31**	--		
3. Female HS	,46**	,17	--	
4. Female BS	,22*	,09	,19	--

*Note.* HS = Hostile Sexism, BS = Benevolent Sexism. \*\* $p < .001$ , \* $p < .05$

**Figure 4**

*Scatterplot of Sexist Attitudes and Perception of Male and Female Avatars*



## 5.2 Skin colour

### 5.2.1 Assumptions checks skin colour

Across all the variables of interest, only five variables were normally distributed with an insignificant Shapiro-Wilk test (Table 6). Sexist attitudes were mostly normally distributed except AMI BS, moreover, the reduced to looks variable was normally distributed. Therefore, most data were abnormally distributed. Nevertheless, a repeated measures ANOVA using Pillai's Trace was utilized. Pillai's trace was used because it provides a more robust model that can better account for deviations of normality.

**Table 6**

*Shapiro-Wilk Test*

Skin Colour/Gender/ Variable	<i>W</i>	<i>DF</i>	<i>p</i> -value
B Male HS	.94	94	< .001*
W Male HS	.95	94	.002*
B Female HS	.96	94	.004*
W Female HS	.95	94	.002*
B Male BS	.90	94	<.001*
W Male BS	.95	94	<.001*
B Female BS	.93	94	<.001*
W Female BS	.92	94	<.001*

B Male G	.97	94	.022*
W Male G	.97	94	.031*
B Female G	.96	94	.007*
W Female G	.93	94	<.001*
B Male RtL	.98	94	.072
W Male RtL	.98	94	.072
B Female RtL	.95	94	.001*
W Female RtL	.92	94	<.001*

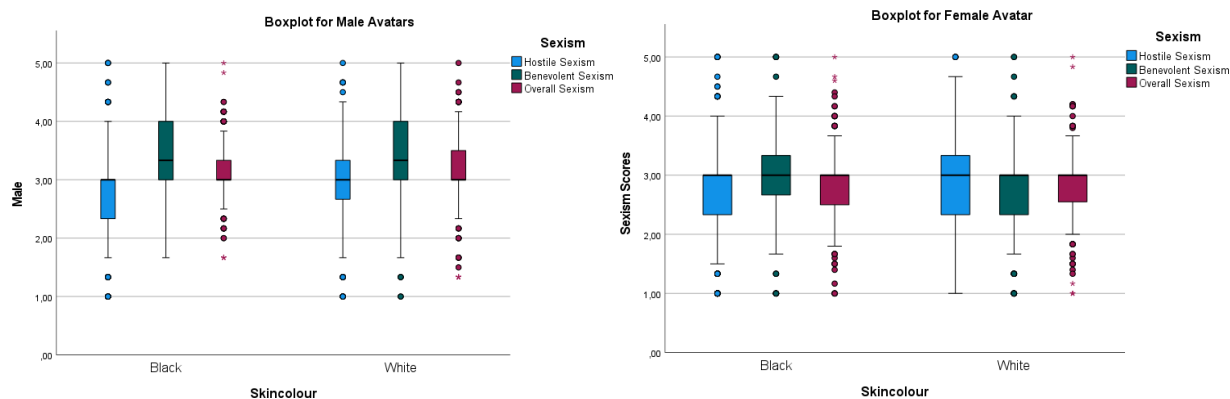
*Note.* B = Black skin colour, W = White skin colour, HS = Hostile Sexism, BS = Benevolent Sexism, G = Gender norm, RtL = Reduced to looks. \*  $p < .05$  \*\*  $p < .001$ .

### 5.2.2 H<sub>2</sub>: White female avatars are perceived as more sexist.

Looking at the avatars individually, there are a bunch of outliers across sexist scores and masculinity/femininity (Appendix F). The boxplots seen in Figure 5-6 display the sexism scores, adherence to gender norms, objectification (reduced to looks), and the masculinity/femininity for groups of avatars with differing skin colour. At the group level, most ratings seem to be very similar across the different skin colours of the avatars. Looking at the male adherence to gender norms, white male avatars appear to score higher compared to black male avatars. In addition, white female avatars seem to be rated as more reduced to their looks compared to their dark-skinned counterparts.

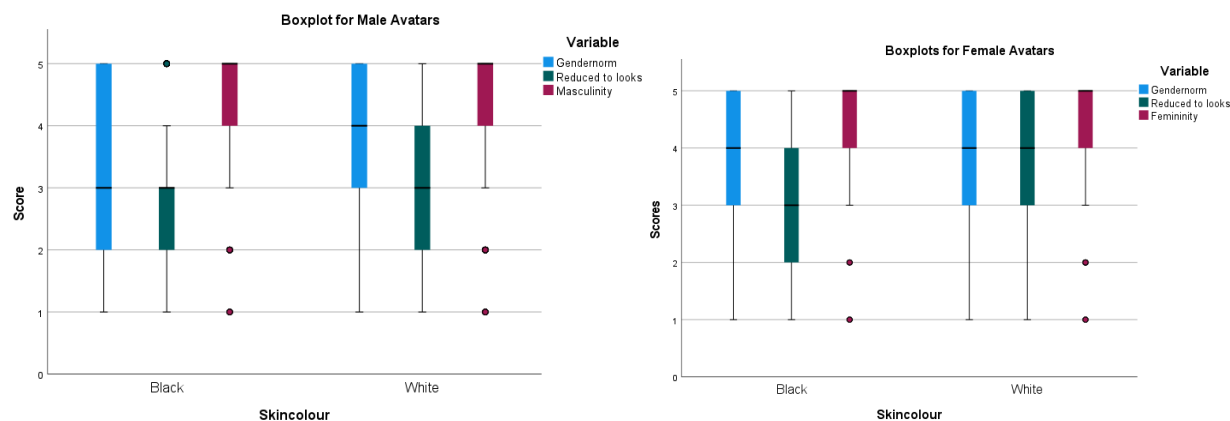
**Figure 5**

*Grouped Boxplot of Male and Female Avatars with Sexism Scores*



**Figure 6**

*Grouped Boxplot of Male and Female Avatars with Gender norm, Reduced to looks, and Masculinity*



A repeated measures ANOVA was performed to examine how skin colour (White vs. Black) and gender (Male vs. Female) influence hostile sexist views towards avatars (Figure 7a). The findings revealed a significant influence of skin colour on these perceptions, Pillai's Trace = .133,  $F(1, 93) = 14.309$ ,  $p < .001$ , demonstrating that participants' hostile sexist views varied significantly depending on the skin colour of the avatars. Conversely, the impact of gender was not significant, Pillai's Trace = .002,  $F(1, 93) = .210$ ,  $p = .648$ , indicating that gender did not play a substantial role in shaping these perceptions. Additionally, the interaction between skin colour and gender was also not significant, Pillai's Trace = .006,  $F(1, 93) = .514$ ,  $p = .475$ , suggesting that the combination of these factors did not significantly affect hostile sexist perceptions.

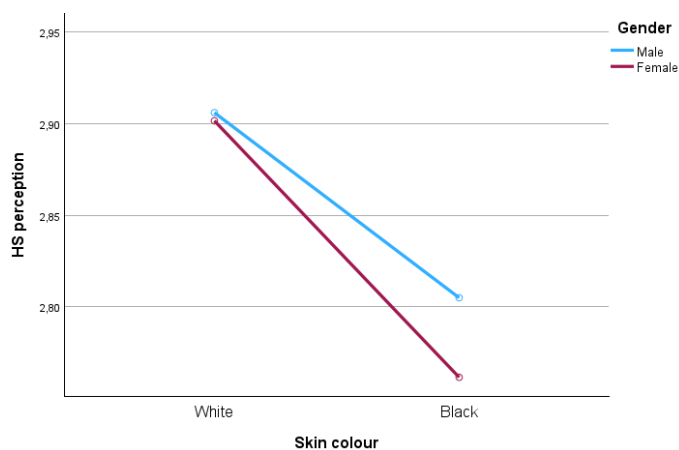
The analysis examining benevolent sexist perceptions (Figure 7b) revealed a significant effect of skin colour, Pillai's Trace = .105,  $F(1, 93) = 10.929$ ,  $p = .001$ . This suggests that participants' views on benevolent sexism differed significantly based on the avatars' skin colour. A strong effect of gender was also observed, Pillai's Trace = .517,  $F(1, 93) = 99.674$ ,  $p < .001$ , indicating that gender significantly influenced benevolent sexist perceptions. However, there was no significant interaction between skin colour and gender, Pillai's Trace = .001,  $F(1, 93) = .056$ ,  $p = .814$ , meaning that the combination of these two factors did not have a significant impact on benevolent sexist views.

Regarding gender norm perceptions, the ANOVA (Figure 7c) indicated that the main effect of skin colour was not statistically significant, Pillai's Trace = .032,  $F(1, 93) = 3.026$ ,  $p = .085$ , suggesting that participants' perceptions were not significantly influenced by the skin colour of the avatars. However, gender had a significant effect, Pillai's Trace = .062,  $F(1, 93) = 6.191$ ,  $p = .015$ , meaning that gender did play a significant role in shaping these perceptions. Furthermore, the interaction between skin colour and gender was significant, Pillai's Trace = .190,  $F(1, 93) = 21.791$ ,  $p < .001$ , showing that the combined effects of skin colour and gender significantly influenced participants' views.

Finally, the ANOVA on perceptions of reduced looks (Figure 7d) showed a significant effect of skin colour, Pillai's Trace = .259,  $F(1, 93) = 32.472$ ,  $p < .001$ , indicating that participants' views varied significantly based on the skin colour associated with the avatars. Gender also had a significant impact, Pillai's Trace = .556,  $F(1, 93) = 116.433$ ,  $p < .001$ , underscoring the importance of gender in these perceptions. Additionally, a significant interaction between skin colour and gender was found, Pillai's Trace = .168,  $F(1, 93) = 18.819$ ,  $p < .001$ , indicating that these two factors combined significantly affected how participants perceived the reduced looks of avatars.

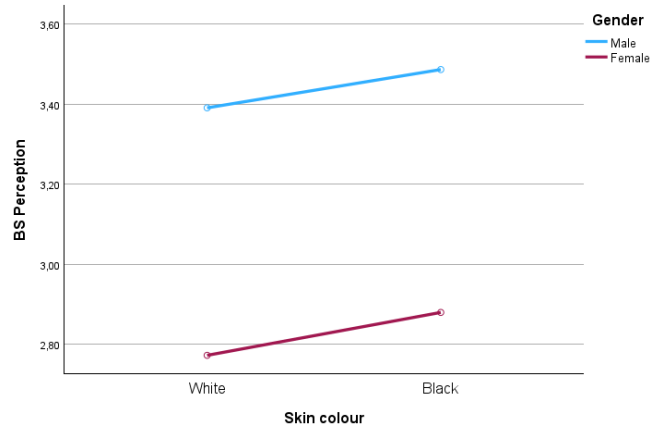
**Figure 7a**

*ANOVA of Skin colour x Gender on Hostile Perception of Avatars*



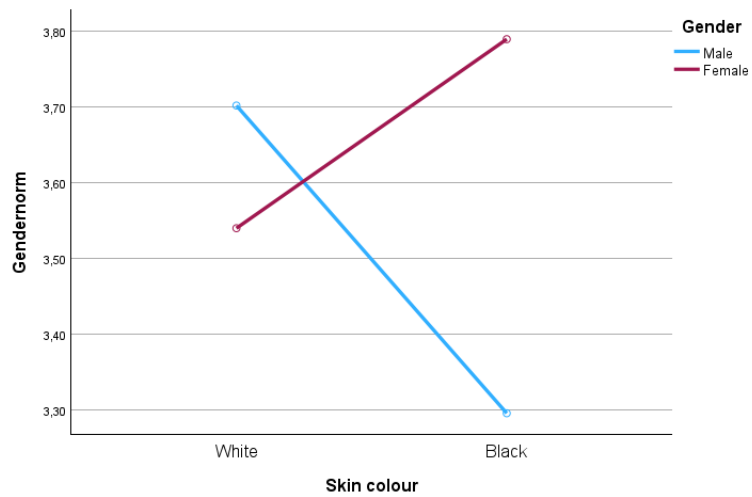
**Figure 7b**

*ANOVA of Skin colour x Gender on Benevolent Perception of Avatars*



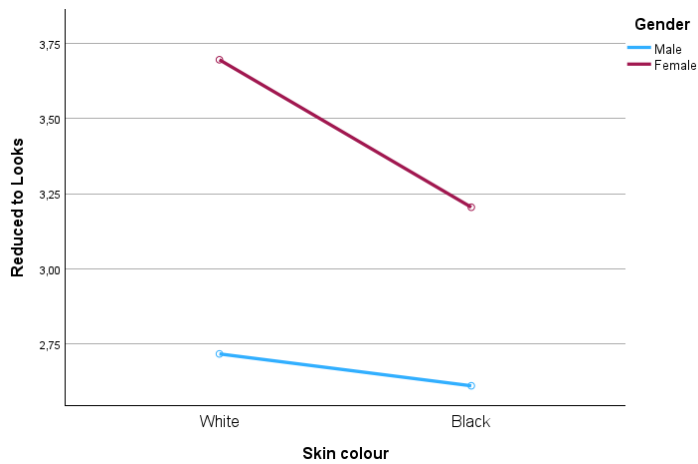
**Figure 7c**

*ANOVA of Skin colour x Gender on The Perception of Avatars Gendernorm*



**Figure 7d**

*ANOVA of Skin colour x Gender on The Perception of Avatars Objectification*



## 5.3 Creator Gender

### 5.3.1 Assumptions checks

The match and mismatch variables were all significantly abnormal distributed (Table 7). The Levene's was significant for all comparisons ( $p < .05$ ). Therefore, the Wilcoxon signed rank test will be used to compare the groups instead of a T-test.

**Table 7**

*Shapiro-Wilk Test*

Avatar Gender/ Gendermatch/-mismatch	<i>W</i>	<i>DF</i>	<i>p</i> -value
Male Avatar Match HS	.95	92	<.001**
Male Avatar Mismatch HS	.96	92	.005*
M Avatar Match BS	.94	92	<.001**
M Avatar Mismatch BS	.92	92	<.001**
F Avatar Match HS	.97	92	.015*
F Avatar Mismatch HS	.97	92	.016*
F Avatar Match BS	.94	92	<.001**
F Avatar Mismatch BS	.93	92	<.001**

*Note.* HS = Hostile Sexism, BS = Benevolent Sexism \*  $p < .05$  \*\*  $p < .001$ .

### 5.3.2 H<sub>3</sub>: Participants who differ in terms of gender with the creator gender of the avatar perceive the avatar as more sexist.

To test the hypothesis that a mismatch between participant and creator gender increases the sexist perception a Wilcoxon Test was run for each comparison of gender match and mismatch analysis (Table 8).

Examining the effect between gender mismatch and match for the hostile sexist perception of male avatars, the match condition was rated significantly higher than the mismatch condition ( $Z = -2.47, p = 0.14$ ). For benevolence, the effect was reversed with participants not sharing the gender of the creator rating the male avatars as more sexist ( $Z = -2.2, p = .027$ ). For female avatars, no significant effect was found.

In other words, for male avatars, matching gender with the creator made participants see them as more hostile sexist, while mismatching genders led to seeing them as more benevolent sexist. Gender match had no effect on the perception of female avatars.



**Table 8***Wilcoxon Signed-Rank Test for Mismatch – Match Comparison*

	<i>Z</i>	<i>p</i> -value
Comparison Male Avatars		
Mismatch – Match HS	-2.47 <sup>b</sup>	.014
Mismatch – Match BS	-2.21 <sup>c</sup>	.027
Comparison Female Avatars		
Mismatch – Match HS	-.202 <sup>b</sup>	.840
Mismatch – Match BS	-.554 <sup>b</sup>	.580

*Note.* b = based on negative ranks, c = based on positive ranks

## Discussion

### 6.1 Summary of Findings

The aim of this study was to investigate how individual sexist attitudes, the skin colour of avatars, and the gender of their creators influenced the perception of sexist avatars. Through the analysis, several key findings emerged, each addressing the research questions posed.

First, benevolent perception of female avatars and hostile perception of male avatars could not be predicted by sexist attitudes. Still, it was found that individuals with higher levels of sexist attitudes were more likely to perceive avatars as sexist. This was particularly true for female avatars, where stronger hostile sexist attitudes were associated with a greater tendency to view these avatars as embodying hostile sexism. Interestingly, hostile sexist attitudes were predictive of the benevolent sexist perception of male avatars. This finding supports the idea that pre-existing biases like sexist attitudes play a role in shaping how individuals interpret and interact with visual representations (Bowey et al., 2017; Meagher, 2017).

The study found that avatar skin colour significantly influenced perceptions of sexism. White female avatars were generally seen as more objectified and associated with hostile sexism compared to black female avatars. Conversely, in contrast to the findings of McMahon and Kahn (2016), black female avatars were associated with more benevolent sexism than white female avatars. While similar patterns emerged for male avatars, the effects were a bit weaker. Even though the difference was not significant, black female avatars were perceived as adhering more to the gender norm than their white counterparts.

Lastly, the gender of the avatar's creator also influenced perceptions of male avatars. Interestingly, participants who shared the same gender as the creator tended to rate the avatars as more hostile sexist, while those with a gender mismatch (i.e., different gender from the creator) perceived the avatars as more benevolent sexist. For female avatars, gender miss-/match did not predict their sexist perception.

In sum, these findings suggest that perceptions of sexism in avatars are not solely influenced by the avatars themselves but are deeply intertwined with the viewers' biases, the avatars' physical characteristics, and the social context of their creation.

## **6.2 Theoretical Implications**

### **6.2.1 Sexist Attitudes**

The first hypothesis, proposing that individuals with highly sexist attitudes would perceive game avatars as more sexist, was partially supported. The data revealed that hostile sexist attitudes towards women significantly predicted the perception of hostile sexism in female avatars. This aligns with previous research demonstrating that pre-existing biases can shape how individuals interpret visual representations (Liao, 2023). Further this finding is consistent with previous work (Bowey et al., 2017), which suggests that sexist attitudes not only influence the enjoyment of sexist content, while implying that it also affects how individuals perceive characters. The stronger the hostile sexist attitudes, the more likely participants were to see female avatars through a lens of hostility and negativity. The unexpected finding that hostile sexist attitudes towards women were negatively associated with the perception of benevolent sexism in female avatars but for male avatars these attitudes were positively associated warrants further exploration. It is possible that individuals with high levels of hostile sexism may be less inclined to attribute positive, albeit stereotypical, traits to female avatars. This could reflect a deeper resistance to acknowledging any positive aspects of female representation, even within traditional gender roles.

The hypothesis was not supported for benevolent sexism in female avatars and hostile sexism in male avatars. This supports the findings of past studies where exposure to sexist game content increased benevolent sexism (Yao et al., 2009; Sterner & Burkley, 2015; Bégué et al., 2017) by ruling out the alternative explanation that individuals with pre-existing sexist attitudes are more likely to engage with and enjoy such content. Further, this lack of significance,

particularly for benevolent sexist attitudes, might indicate that benevolent sexism is less easily triggered by female avatars in the context of video games. Given that benevolent sexism often presents as a protective, paternalistic attitude (Glick & Fiske, 1996), its influence may not extend as readily to the virtual portrayal of women, especially when these avatars do not fit the stereotypical roles typically associated with benevolent sexism (e.g., nurturer, protector).

### ***6.2.2 The Role of Skin Colour***

The data revealed that white female avatars were indeed associated with more objectification and hostile sexism compared to black female avatars. This aligns with the notion that white women are often more closely associated with traditional beauty standards and objectification in media (Johnson et al., 2012; McMahon & Kahn, 2016). However, the hypothesis was not fully supported, as the study found that white female avatars were perceived as more hostile sexist, while black female avatars were perceived as more benevolent sexist. This contrasts with the findings of McMahon & Kahn (2016), who reported that white women experience more benevolent sexism and do not differ in the extent they receive hostile sexism.

The discrepancy between the current study's findings and those of McMahon & Kahn (2016) might be explained by the role of behaviour in shaping sexism perceptions. McMahon & Kahn (2016) observed that when behaviour that is not in line with traditional gender roles is introduced, the amount of sexism directed towards a group can shift. In their study, black women who adhered to traditional gender roles received more benevolent sexism than white women, potentially because they defied negative expectations associated with their group. The current study's findings are in line with this observation and the shifting standards theory (Biernat, 2003; Manis et al., 1991), which posits that individuals from stereotyped groups are judged based on different expectations.

In the current study, all female avatars were presented in revealing attire, which could be interpreted as a sign of sexual availability. As black women are stereotyped as being sexually available (Davis & Cross, 1979; Littlefield, 2008; Rosenthal & Lobel, 2016), the avatars in this study may not have violated expectations for this group. In contrast, white women are often stereotyped as pure and chaste (McMahon & Kahn, 2016), and the revealing attire of the avatars might have been seen as a violation of these expectations, leading to higher hostile sexism ratings. The finding that white female avatars were perceived as adhering less to gender norms

than black female avatars further support this interpretation. The higher objectification ratings for white women, indicating their perceived sexual availability, could also contribute to the increased hostile sexism directed towards them. In essence, the white female avatars, are "punished" with hostile sexism for violating expectations of purity and chastity, they might receive less benevolent sexism in return.

The higher benevolent sexism ratings for black female avatars may be explained by this reasoning. White female avatars are "punished" by receiving less benevolent sexism when they violate expectations. In contrast, black female avatars, by conforming to stereotypes, are viewed as sexist in line with those expectations. Therefore, the difference lies in the reduced amount of benevolent sexism received by white avatars, rather than an increase in benevolent sexism towards black avatars. The finding that black female avatars were perceived as adhering more to gender norms than white female avatars further support this interpretation.

In conclusion, while the current study's findings partially support the second hypothesis, they also highlight the complex interplay between skin colour, gender stereotypes, and the perception of sexism in avatars. The results suggest that defying expectations can lead to increased hostile sexism and decreased benevolent sexism.

### ***6.2.3 Creator Gender***

The results showed an unexpected pattern for male avatars. Participants who shared the same gender as the creator rated the avatars as more hostile sexist, while those with a gender mismatch perceived them as more benevolent sexist. This finding challenges the hypothesised straightforward in-group favouritism derived from the Social Identity Theory (Tajfel & Turner, 1979), which suggests that individuals tend to favour members of their own social group and discriminate against those from out-groups.

The specific characteristics of the male avatars might have played a role. The avatars used in the study were designed to embody varying degrees of sexism and objectification, and it's possible that certain masculine traits or behaviours were perceived differently depending on the viewer's gender and their alignment with the creator's gender. For instance, a male avatar exhibiting traditionally masculine traits like aggression or dominance might be viewed as more hostile sexist by male participants who identify with the male creator, as it reinforces societal expectations of masculinity.

The lack of a significant effect of creator gender on the perception of female avatars is noteworthy. The observation that the explicit gender of the creator did not influence perceptions of the avatar aligns with research in the context of artwork, where Tian (2022) found that the explicit gender of the artist had no impact on the ratings of their work. It was suggested that cues were more important to derive the creator gender than the explicit gender (Tian, 2022). In this study the presentation of creator information solely in textual form might have limited its salience, potentially leading participants to focus primarily on other visual characteristics of the avatar. This suggests that the gender of the creator might not be a primary factor in shaping how audiences perceive and evaluate creative output, whether it's a piece of art or a digital avatar.

In conclusion, the impact of creator gender on sexism perception is complex and multifaceted. The study's findings challenge the third hypothesis for male avatars, they also reveal a more nuanced picture than predicted by Social Identity Theory.

### **6.3 Practical Implications**

The study demonstrates that the perception of avatars, especially female characters, is influenced by both the avatars' skin colour and gender, as well as the sexist attitudes of the observers. This finding has significant implications for game designers, developers, and artists in the gaming industry. Game developers must recognize that the physical appearance of avatars, particularly in terms of skin colour and gender representation, can either reinforce or challenge harmful stereotypes related to sexism and race. By adopting more diverse and inclusive designs, especially for female avatars and those representing different racial identities, game creators can reduce both objectification and the perpetuation of sexist and racially biased norms. This could contribute to more positive gaming environments and help decrease the normalization of sexism and racial biases in virtual spaces. It is known that people tend to enjoy content that aligns with their attitudes (Bowey et al., 2017). However, research based on cultivation theory shows that attitudes can change over time when people are exposed to sexist content (Yao et al., 2009; Stermer & Burkley, 2015; Bègue et al., 2017). This suggests that being exposed to content that challenges these biases could also lead to a shift in attitudes. Therefore, as games with more inclusive and non-sexist content become more prevalent, players may adapt their preferences and find enjoyment in more inclusive games, just as they did with previous, more sexist and racially biased content.

## 6.4 Strength and Limitations

Overall, this study faced several limitations. For instance, in the skin colour condition, some female avatars did not fit neatly into the "white" category. For example, the grey-skinned avatar (W grey skin) and the Crown avatar (W Crown) fell somewhere between light and dark skin tones, making it difficult to categorize them clearly. This ambiguity could have distorted the findings when comparing the skin colour groups. However, a strength of this condition was that the World of Warcraft (WoW) head dressing room did not allow the creation of avatars with prototypical facial features. Johnson et al. (2012) found that Japanese faces, regardless of gender, are often perceived as more feminine, while darker-skinned faces are more likely to be seen as masculine. This could be due to facial phenotypes, and the absence of these features in the WoW avatars may have reduced the impact of skin colour on sexist perceptions. Despite this, the study still found an effect of skin colour on perceived sexism in avatars, emphasizing the significance of the results.

Regarding the avatar creator, the issue lay in the low salience of the information provided to participants. Although participants were given details about the creator, the information may not have been prominent enough for them to form in-group or out-group associations. As a result, this could have weakened the validity of the findings, increasing the likelihood of random effects rather than effects driven by in-group favouritism or out-group derogation. On the other hand, if the creator information had been more salient, the effects might have been even stronger. While the results cannot be fully explained by Social Identity Theory, the fact that any effects were found despite the low salience can be seen as a positive outcome.

Another limitation was the reformulation of the Ambivalent Sexism Inventory (ASI) and Ambivalence Toward Men Inventory (AMI) questions for the avatars. The wording of these questions was altered, raising concerns about the reliability and validity of the measures. It is unclear whether the reformulated scales truly captured the intended constructs. This issue was also evident in the pilot study, where participants did not perceive male avatars as sexist.

Nevertheless, the study succeeded in selecting highly sexist and objectifying female avatars for the main study, which was essential for assessing sexist perceptions. To address the limitation that male avatars were not perceived as sexist, the study carefully chose male avatars that were highly objectifying, with strong masculine traits, to ensure comparability.

## 6.5 Future Research

Before discussing the recommendations for future research, it is important to include a disclaimer. During the data collection phase of this study, the survey was shared across various Reddit threads. Due to the sensitive nature of the topic, the survey post received a significant amount of negative feedback, where some participants only completed the demographic section and left derogatory comments directed at the researchers. As a result, caution should be exercised when distributing similar surveys in the future.

Based on the findings and limitations of this study, one recommendation is to conduct a follow-up study that presents actual images of the avatar creators to enhance the saliency of the information. This could help participants relate more to the creators and allow for a deeper investigation into whether the findings of Tian (2020), suggesting that explicit gender has no impact on the rating of artwork, can be applied in the context of avatars.

Additionally, Bowey et al. (2017) introduced the concept of agency and explored how player agency affects user experience. In the current study, participants were told that the avatar had been created by someone else. A future study could examine what happens when each participant creates their own avatar, which is then rated by other participants. This would provide insights into how avatar agency influences avatar perception.

Moreover, future studies should establish clear criteria for grouping avatars by skin colour. In this study, only World of Warcraft avatars without any facial expression differences were used. Previous research has highlighted that race can play a role in assigning gender to faces through similar facial phenotypes (Johnson et al., 2012). Thus, it would be valuable for future studies to investigate how stereotypical facial features influence avatar perception. It is hypothesized that these effects may become more pronounced when facial cues are included.

Finally, future research should employ validated instruments to assess avatar perception, and these measures should be piloted beforehand. Ideally, the questions designed to evaluate avatar perception should not be adapted from scales assessing sexist attitudes. Since many questionnaires rely on self-reported data, future research could benefit from using implicit measures of sexist attitudes to increase the validity of the measure, as demonstrated in the study by Johnson et al. (2012).

## 6.6 Conclusion

This study investigated the relationship between personal attitudes and characteristics, avatar attributes, and the perception of sexism in avatars. Contrary to initial expectations, mostly hostile attitudes predicted the perception of hostility in female avatars and were negatively associated with benevolent perceptions. For male avatars only hostile attitudes were predictive of benevolent sexist perceptions. Further, the findings suggest that a mismatch or match between participant and avatar creator gender does not consistently influence perceptions of sexism. For male, avatars a mismatch led to higher perceived hostile sexism and a match led to stronger perceived benevolent sexism. Furthermore, while white female avatars were perceived as more objectified and hostile, black female avatars were viewed as more adhering to gender norms and benevolently sexist. This finding can be explained through shifting hypothesis theory. In general, these results challenge straightforward explanations and emphasize the complex interplay of factors influencing avatar perception. This study highlights that the sexist perception of avatars is multifaceted and influenced by different factors that still need to be further examined. Future studies with improved methods and new perspectives are crucial for a more comprehensive understanding.



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## APPENDICES

### Appendix A: Avatars and Creator information

**Figure 8**

W Gray skin



Gamertag: Killswitch  
Creator Gender: Male  
Realm: Silvermoon

**Figure 9**

B Red Bikini



Gamertag: DizzyDolly  
Creator Gender: Female  
Realm: Eredar



**Figure 10**

B Blonde



Gamertag: TabulaRasa  
Creator Gender: Female  
Realm: Antonidas

**Figure 11**

B Gold



Gamertag: FallenGod  
Creator Gender: Male  
Realm: Outland

**Figure 12**

W Bikini



Gamertag: RedHusky  
Creator Gender: Male  
Realm: Argent Dawn

**Figure 13**

W Crown



Gamertag: Heligoland  
Creator Gender: Male  
Realm: Well of Eternity

**Figure 14**

B Headband



Gamertag: WhiteRabbit

Creator Gender: Female

Realm: Archimonde

**Figure 15**

W Green



Gamertag: FrenchFry

Creator Gender: Female

Realm: Hyjal

**Figure 16**

W Spiky



Gamertag: FrostbiteKnight

Creator Gender: Male

Realm: Frostmourne

**Figure 17**

B Leather



Gamertag: FevreDream

Creator Gender: Female

Realm: Emerald Dream

**Figure 18**

B Redarmor



Gamertag: Twisted Sister

Creator Gender: Female

Realm: Nemesis

**Figure 19**

W Prince



Gamertag: GemFinder

Creator Gender: Female

Realm: Hakkar

**Figure 20**

B Fighter



Gamertag: CountingSheep

Creator Gender: Male

Realm: Garona

**Figure 21**

W Fighter



Gamertag: GhastlyKing

Creator Gender: Male

Realm: Eonar

**Figure 22**

B Chain



Gamertag: PhantomQueen  
Creator Gender: Female  
Realm: Ravencrest

**Figure 23**

W Chain



Gamertag: TheLoyalest  
Creator Gender: Male  
Realm: Frostwolf

## Appendix B: Sample Characteristics

**Table 9**

*Descriptive statistics of all demographic variables*

	M	SD	N	%
Age in years	27.6	7.6	94	
Gender				
Male			56	59.6
Female			36	38.3
Prefer not to say			2	2.1
Sexuality				
Heterosexual				
Homosexual				
Bisexual				
Asexual				
Pansexual				
Prefer not to say				
Country of Residence				
Australia			1	1.1
Belgium			2	2.1
Canada			1	1.1
Chile			1	1.1
Czech Republic			1	1.1
Finland			1	1.1
France			4	4.3
Germany			13	13.8
Indonesia			1	1.1
Italy			1	1.1
Latvia			1	1.1
Netherlands			24	25.5
Poland			3	3.2
Portugal			3	3.2
Romania			1	1.1
Slovakia			1	1.1
South Africa			7	7.4
Spain			3	3.2
Sweden			3	3.2
Switzerland			1	1.1
Ukraine			1	1.1
United Kingdom of Great Britain and Northern Ireland			4	4.3
United States of America			13	13.8
Education				



High School	31	33
Bachelor Degree	47	50
Master Degree	9	9.6
PHD	1	1.1
other	5	6.4
World of Warcraft Experience		
I am playing WoW on a regular basis	26	27.7
I sometimes play WoW	6	6.4
I was playing WoW when I was younger	14	14.9
I know WoW but I have never played it	41	43.6
I do not know WoW	7	7.4
World of Warcraft Company		
Strangers	5	5.3
Friends	21	22.3
Online Friends	11	11.7
Alone	10	10.6
With others	3	3.2

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Appendix C: Flyers for Data Collection

Figure 24

Flyer 1



Figure 25

Flyer 2



**🎮 Participate in Our Master Thesis Survey! 📄**

Are you a **gamer**? Your opinion matters! Help us understand the **perception of avatars** in video games by taking part in our survey. It takes 20 minutes and you can earn 0.25 SONA credits.

**What to expect:**  
Rate avatars based on their outfit and appearance

**How to Participate:**  
Simply scan the QR code on the left for the Sona website or on the right for the Qualtrics survey.



### Appendix D: Ambivalent Sexism Inventory (ASI)

**Table 10**

*Ambivalent Sexism Inventory*

Latent Variable	Question
B(I)	5. No matter how accomplished he is, a man is not truly complete as a person unless he has the love of a woman.
H	6. Many women are actually seeking factors, such as hiring policies that favour them over men, under the guise of asking for “equality”.
B(P)*	7. In a disaster, women ought not necessarily to be rescued before men.
H	8. Most women interpret innocent remarks or acts as being sexist.
H	9. Women are too easily offended.
B(I)*	10. People are often truly happy in life without being romantically involved with a member of the other sex.
H	11. Feminists are not seeking for women to have more power than men.
B(G)	12. Many women have a quality of purity that few men possess.
B(P)	13. Women should be cherished and protected by men.
H	14. Most women fail to appreciate fully all that men do for them.
H	15. Women seek to gain power by getting control over men.
B(I)	16. Every man ought to have a woman whom he adores.
B(I)*	17. Men are complete without women.
H	18. Women exaggerate problems they have at work.
H	19. Once a woman gets a man to commit to her, she usually tries to put him on a tighter leash.
H	20. When women lose to men in a fair competition, they typically complain about being discriminated against.
B(P)	21. A good woman should be set on a pedestal by her man.



- |      |                                                                                                                                        |
|------|----------------------------------------------------------------------------------------------------------------------------------------|
| H*   | 22. There are actually very few women who get a kick out of teasing men by seeming sexually available and then refusing male advances. |
| B(G) | 23. Women, compared to men, tend to have a superior moral sensibility.                                                                 |
| B(P) | 24. Men should be willing to sacrifice their own well being in order to provide financially for the women in their lives.              |
| H*   | 25. Feminists are making entirely reasonable demands of men.                                                                           |
| B(G) | 26. Women, as compared to men, tend to have a more refined sense of culture and good taste.                                            |

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*Note.* \* Reversed items. B(P) = Protective Paternalism, B(G) = Complementary Gender

Differentiation, B(I) = Heterosexual Intimacy

## Appendix E: Ambivalence Towards Men Inventory (AMI)

**Table 11**

*Ambivalent Sexism towards Men Inventory*

Latent Variable	Question
B(M)	1. Even if both members of a couple work, the woman ought to be more attentive.
H(S)	2. A man who is sexually attracted to a woman typically has no morals about doing whatever it takes to get her in bed.
B(G)	3. Men are less likely to fall apart in emergencies than women are.
H(S)	4. When men act to “help” women, they are often trying to prove they are better than women.
B(S)	5. Every woman needs a male partner who will cherish her.
H(G)	6. Men would be lost in this world if women weren’t there to guide them.
B(S)	7. A woman will never be truly fulfilled in life if she doesn’t have a committed, long-term relationship with a man.
H(G)	8. Men act like babies when they are sick.
H(P)	9. Men will always fight to have greater control in society than women.
B(M)	10. Men are mainly useful to provide financial security for women.
H(P)	11. Even men who claim to be sensitive to women’s rights really want a traditional relationship at home, with

the woman performing most of the housekeeping and childcare.

- |      |                                                                                                                    |
|------|--------------------------------------------------------------------------------------------------------------------|
| B(S) | 12. Every woman ought to have a man she adores.                                                                    |
| B(G) | 13. Men are more willing to put themselves in danger to protect others.                                            |
| H(S) | 14. Men usually try to dominate conversations when talking to women.                                               |
| H(P) | 15. Most men pay lip service to equality for women, but can't handle having a woman as an equal.                   |
| B(S) | 16. Women are incomplete without men.                                                                              |
| H(G) | 17. When it comes down to it, most men are really like children.                                                   |
| B(G) | 18. Men are more willing to take risks than women.                                                                 |
| H(S) | 19. Most men sexually harass women, even if only in subtle ways, once they are in a position of power over them.   |
| B(M) | 20. Women ought to take care of their men at home, because men would fall apart if they had to fend for themselves |

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*Note.* H(P) = Resentment of Paternalism, H(G) = Compensatory Gender Differentiation, H(S) =

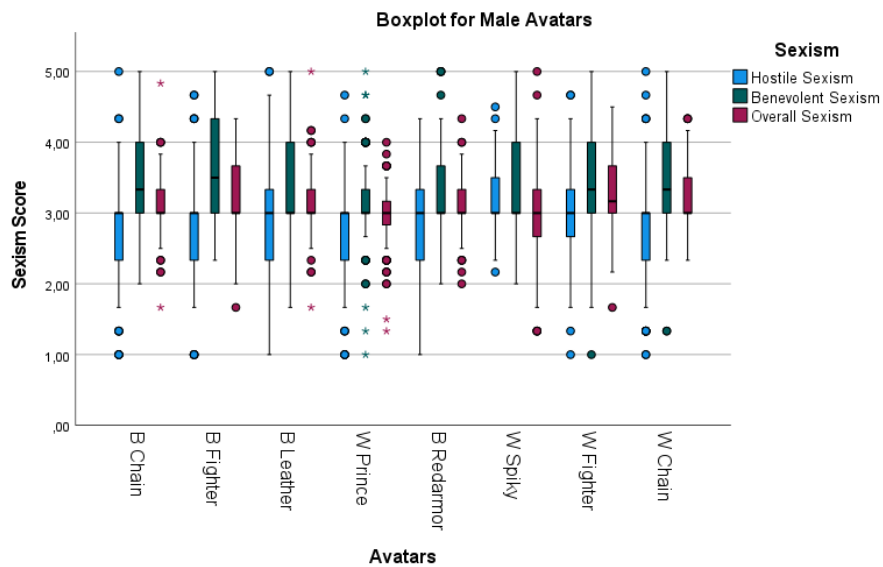
Heterosexual Hostility, B(M) = Maternalism, B(G) = Complementary Gender Differentiation,

BS (S) = Heterosexual Intimacy.

### Appendix F

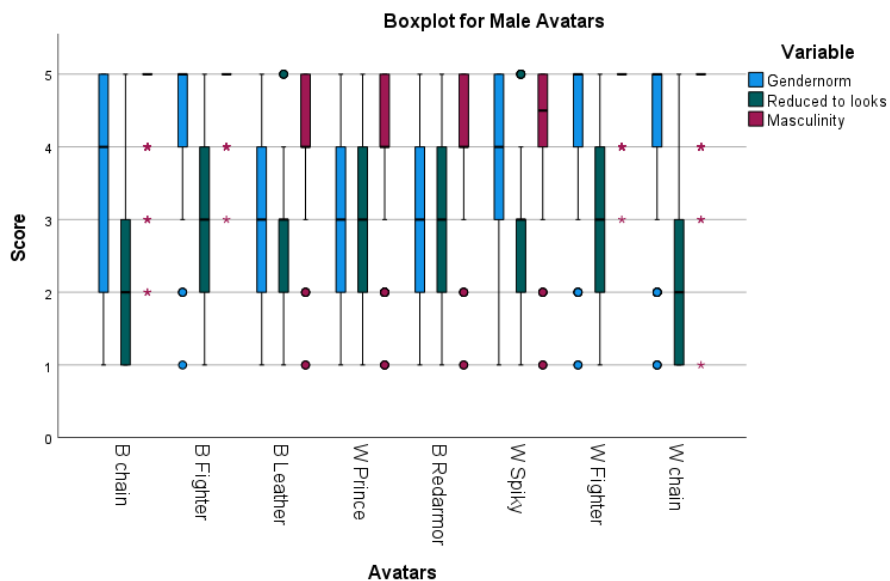
**Figure 26**

*Sexism Scores for All Individual Male Avatars*



**Figure 27**

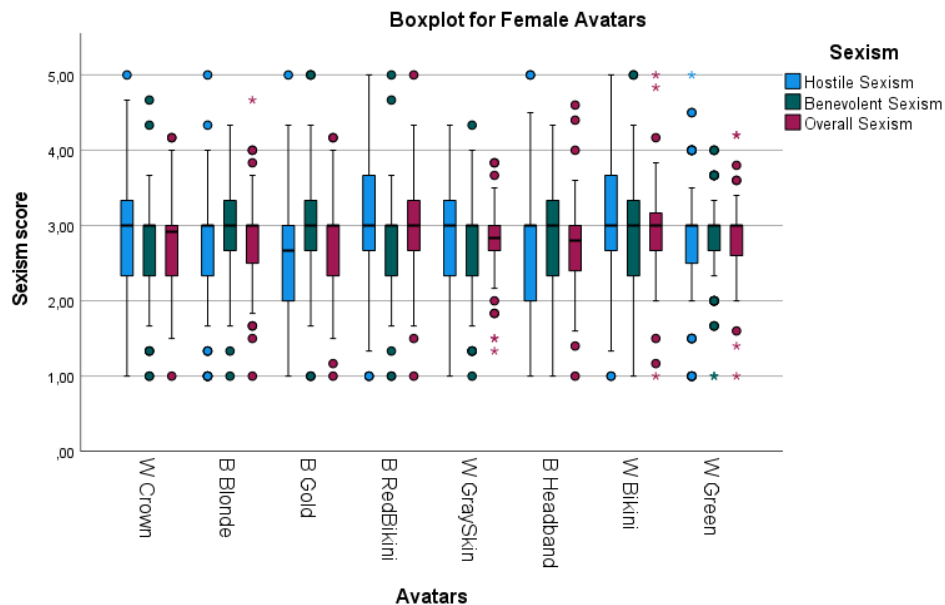
*Gendernorm, Reduced to Looks, Masculinity of All Individual Male Avatars*





**Figure 28**

*Sexism Scores for All Individual Female Avatars*



**Figure 29**

*Gendernorm, Reduced to Looks, Masculinity of All Individual Female Avatars*

