Exploring story-based Avatar Customization in Virtual Environments: The Influence of Sexist Beliefs and Gender

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Abstract

The present study investigated how the level of sexist beliefs and gender identity can influence the creation of story-based avatars in virtual environments. In this mixed-method study, 33 participants designed two avatars using the avatar creation tool Sims4, based on two different narratives: one sexist narrative (Emily) and one neutral narrative (Sophie). After the completion of the avatar creation the level of sexist beliefs was measured using the Ambivalent sexism Inventory (ASI).

The quantitative analysis of this study showed that male and female participants' ASI ratings did not differ significantly. Gender did not affect the ASI scores and the level of sexist beliefs (ASI scores) did not show a significant effect on the extent to how sexist the avatars were created. Only talking about the influence gender itself has on avatar creation, no significant difference neither could be found. Nevertheless, qualitative analysis revealed clear distinctions between the avatar creation in Emily and Sophie's representations. Emily, on the one hand, was frequently portrayed as embracing more sexist stereotypes with her bright cosmetics, styled hair, and revealing clothes. Sophie, on the other hand, had a more effortless and understated image, dressed comfortably but sporty and traits got picked which emphasised intelligence and kindness. The results demonstrate that there is a significant effect of narratives on avatar creation, therefore the widespread impact of sexist ideas and narratives on the creation of virtual avatars point to the necessity of interventions to support more inclusive and well-rounded avatar designs.

Introduction

In today's digital world, creating and customizing avatars has become popular in online games and social media. It might seem simple and fun to do, but it brings up some interesting questions. What are the reasons for selecting certain avatars, especially when it comes to body types, facial traits, and fashion preferences?

In many popular games (e.g, GTA and Red Dead Redemption) one can spot several avatars of different genders and different design. The game business has long been under criticism from feminist game critics for appealing to the assumed heterosexual male gamer (Bowey et al., 2017). Avatars seem often to be created using stereotypes and sexist features based on different storylines, such as female avatars displaying passive or submissive roles, which causes that especially female gamers feel offended by highly sexualized avatars and sometimes even refuse to play such games (Bowey et al., 2017). According to Dill and Thill (2007b) an examination of the visual content of popular video game characters in American game publications stated that Characters that are female are more likely than those that are male to be sexualized (60% vs. 1%).

"Sexualizing" is the act of giving something or someone a sexual characteristic or character, frequently in an undesirable way. This can include focusing someone's sexual qualities in a way that minimises or ignores their other qualities or worth, or it can entail attributing sexual qualities to non-sexual objects, circumstances, or behaviours. This phrase is widely used in the media and in culture to describe how people are portrayed, particularly women, in a way that highlights their sexual availability or appeal. This can occasionally result in objectification and reinforce negative stereotypes (Fredrickson & Roberts, 1997). A group of primarily male gamers even responded violently, threatening to rape, harm, or even kill women who spoke out against

sexism in video games and the gaming business (Bowey et al., 2017). Often times in traditional media, including children's books, magazines, and television, women are portrayed and valued with traditional gender norms or are hypersexualized (Bègue et al., 2017). New digital media does not appear to be any different. Some studies even stated that modern video games contain some of the most obviously sexist representations of women (for review see Bègue et al., 2017).

Gender and Stereotypes in society

Societal norms and expectations often impose strict gender roles and stereotypes, influencing how individuals perceive and express their gender (Swim & Hyers, 1999). The term "gender" or “gender identity” describes a person's firmly held perception of their own gender, which can either coincide (cisgender) with the sex given to them at birth or diverge (transgender). People's understanding and expression of their gender are shaped by a complex interaction of social, psychological, and internal aspects that make up their gender identity. This internal gender identity could be non-binary, flexible, or consistent with stereotypical male or female identities. (Roselli, 2018). The societal constructs not only shape personal identities but also reinforce discriminatory attitudes, behaviors and prejudice based on gender or sexual orientation, which is known as sexism (Swim & Hyers, 1999).

One theoretical framework that is supporting this claim is the identity theory, where people develop their ideas of who they are by their social interactions and the roles they play, which are frequently shaped by gender norms in society (Carr, 2006; Moncelsi, 2021). Similarly, the self-categorization theory describes how people assign themselves and other people to social groupings, including gender, and then modify their behaviour and perceptions in accordance with these categories (Nowak & Fox, 2018). The named theories illustrate the maintenance of gender-

based disparities and the upholding of conventional gender norms and expectations (Swim & Hyers, 1999).

It is important to note, that all genders can become a victim of sexism. Nevertheless, especially females have to deal with inequalities and hyper sexualisation, due to the traditional gender roles that are rooted in our society (Glick&Fiske, 1996). A few common examples for sexism in women would be that women should have youth, thinness but hourglass figure, long hair, flawless skin, and symmetrical facial features. Hourglass figures are defined as having a small waist but fuller bust and hips (Fredrickson & Roberts, 1997). Women are seen as objects of lust, highlighting the significance of physical beauty in determining a woman's value. It is expected of women to display themselves in a way that pleases the male gaze, which normalizes objectification and turns women's bodies into commodities. These views are usually rooted in old stereotypes and an outdated picture of women, leading to a pressure to conform to these standards resulting in excessive dieting or excising and undergoing beauty surgeries (Fredrickson & Roberts, 1997).

As stated by Swim et al. (2004), sexism can take on various forms, such as overt, covert, and subtle. Overt sexism is described as openly discriminating against another gender without really intending to do so, such as making openly sexist remarks or jokes in workplaces or social settings. Covert sexism is like overt sexism in many aspects, but it differs in that an effort is made to hide the discrimination against another gender (e.g, rejecting qualified candidates based on gender without explicitly stating it). Often, subtle sexism is harder to spot (e.g, making offhand comments that imply one gender is less capable, such as "You’re really good at this for a woman."). Many people do not recognize this sort of sexism because they believe it to be normal, even if it is not always intended to be hurtful.

Influence of sexist narratives in video games

An interesting platform for investigating systematic forms of sexism are Video games. The practice of giving a virtual character, or avatar, a unique appearance, clothes, and even character traits is known as avatar customization. Through this participatory process, people can express their creativity, identity, and preferences in virtual settings like social media, video games, and virtual reality simulations. (Yee & Bailenson, 2007). Owing to the intense kind of contact that video games frequently involve; it presents a chance to investigate the ways in which customization of avatars in video games support sexism and the potential for future advancements (Dill & Thill, 2007).

Research has demonstrated that those who harbour sexist views may have specific attitudes and ideas about gender roles, behaviour, and appearance. Consequently, it makes sense to speculate that people who hold more sexist ideas could be more inclined to alter their avatars in ways that support or mirror conventional gender stereotypes (Fox & Tang, 2014). They also found that those who do not even play video games have preconceived notions about male characters as violent and female characters as physically attractive sexual specimens, according to a poll conducted among teenagers (Dill & Thill, 2007b).

It becomes necessary to look into the elements that encourage or maintain sexism in video games. In an article Glick and Fiske (1996b) discussed the psychometric properties of the Ambivalent Sexism Inventory (ASI) and its utility in understanding the nuanced nature of sexism toward women. The article also reflects on the implications of ambivalent sexism for gender relations and provides evidence for the prevalence and impact of both hostile and benevolent sexism in society. They introduce the ASI and provide insights into the conceptualization and measurement of hostile and benevolent sexism. This theory offers a framework that could aid in

a deeper comprehension of the evidential sexism found video games. Despite not focusing on any particular media, this theory can be applied to quantify sexism in video games more accurately by employing the ambivalent sexism inventory (Glick & Fiske, 1996). The research by Stermer and Burkley (2015), who conducted a similar study on video games while utilising the ASI, provided evidence for the suitability of the ASI to measure sexism in video games.

In line with the theory of ambivalent sexism, there are two types of sexism: hostile sexism and benevolent sexism. Glick and Fiske (1997) defined hostile sexism as intentionally and openly offend a gender. This definition aligns with Swim et al. (2004)'s descriptions of covert and blatant sexism. For women, for instance, this may equate to objectification. Conversely, benevolent sexism frequently takes no malicious purpose (Glick & Fiske, 1997). This type of sexism is comparable to Swim et al.'s (2004) earlier discussion of subtle sexism. Even though it frequently comes off as something good, such as women should be rescued first, it ultimately implies that one gender is superior to the other. Another example is the clinging to old prejudices, such as the idea that women are better in the kitchen than men. Both types of sexism are present in the world of video games (Cross et al., 2022). This may be due to the video game's plot or the created avatars. Hostile sexism in the context of video games could take several forms, such as purposefully demeaning women as objects or dressing them too short. A scenario where a male hero rescues the weaker lady is an example of benevolent sexism (Stermer & Burkley, 2015).

Every video game follows an individual storyline that is intended to catch and maintain the player 's interest. Video game narratives and tales are an effective way for developers to communicate their message (Toh, 2022) and can also be utilised to teach the player traditional and stereotyped norms and values, this can have negative effects, particularly in video games

where sexism is present (Bowey et al., 2017). Some prejudices and biases related to sexism can be communicated to the player through a game's narrative, character development, and themes (Bowey et al., 2017). It is feasible to investigate how gender stereotypes contribute to the creation and maintenance of sexism by looking at how they are portrayed in video game narratives. This study intends to offer more light on the occurrence and perpetuation of sexism in video games by utilising concepts from media studies and psychology.

According to Social Cognitive Theory (SCT), people pick up attitudes, behaviours, and emotional reactions from observing other people in social situations (Bandura, 1986). Video games are an effective medium for this kind of observational learning because of their detailed narratives and character interactions (Fox & Ralston, 2015). Gamers are likely to internalise and reproduce the gender stereotypes portrayed in video games when they are exposed to sexist narratives. Players build avatars that mirror these prejudices as a result of this observational learning process, which reinforces traditional gender norms (Nowak & Fox, 2018).

If the user is given the option to choose and/or customise their own avatar, these stories may have an impact. More understanding of how narratives impact societal attitudes and prejudices can be gained by looking at their impact (Bowey et al., 2017). Through an analysis of video game narratives, it is possible to gain insights into potential tactics for increasing inclusivity in game culture and to better understand the interactions between users and media like video games (Minson, 2018).

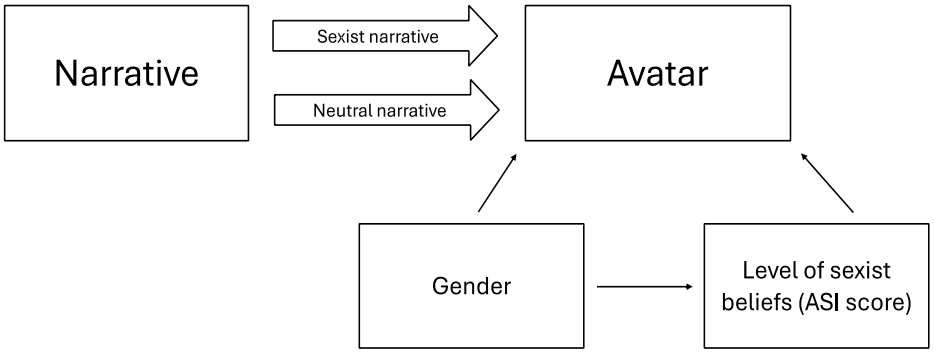
Hypothesis and goals

The study attempts to investigate the relationship between gender identity, sexist beliefs and narratives on avatar customization, examining whether individuals with different gender identities will score different on sexist beliefs and if either gender itself or the level of sexist

beliefs, according to the Ambivalent Sexism Inventory, will have an effect on how sexist an avatar will be created. Another effect, which will be explored in this study, is whether different storylines will lead to different avatar creations (see Figure 1).

Figure 1

Visualization of the tested relationships



Note: This figure demonstrates that "Narratives" indicates one independent variable, followed by two conditions (sexist vs. neutral" narrative) leading to the dependent variable "Avatar". "Gender" represents an independent variable for "level of sexist beliefs" and "Avatar", whereas "Level of sexist beliefs" is another independent variable of "Avatar".

By employing a mixed-methods approach that combines quantitative and qualitative measures, this research attempts to provide a comprehensive understanding of the interplay between gender identity, sexist beliefs, and narrative on avatar customization in virtual environments. The purpose of this thesis is to respond to the following research question by utilizing the insights presented including the ambivalent sexism inventory, the Identity Theory/ Self-Categorization Theory, the Social cognitive theory and other relevant literature: The

Influence of Sexist Beliefs, Gender Identity and narratives on avatar creation. The following hypotheses will be tested:

H1: Gender influences on sexist beliefs:

Participants who identify as male will score higher on the Ambivalent Sexism Inventory (ASI), indicating higher levels of sexist beliefs compared to participants who identify as different genders.

H2: Individual influences on avatar creation:

a) *Participants with higher sexist beliefs will be more likely to design avatars that align with traditional gender stereotypes and norms*

b) *Participants who identify as the gender male will design more sexist or stereotypes avatars.*

H3: Narrative influence on avatar creation:

Participants exposed to a sexist narrative will create avatars that reflect more traditional and stereotypical gender roles compared to those exposed to a neutral narrative.

Methods

Participants

Thirty-three participants completed the questionnaires and created their avatars. The participants completed a consent form to guarantee that the study would adhere to ethical rules and ensure that participation was entirely voluntary. Ethical approval for the survey study was obtained from the Ethics Committee of the Faculty of Behavioral, Management, and Social Sciences of the University of Twente (no.240253). After finishing the study, participants who were University of Twente students were compensated with two SONA points. 37 replies in all

were logged to the questionnaire; however, 4 of those may be disregarded as trial runs to evaluate the surveys' usability. Since one participant did not finish all the activities, they had to be removed.

There was an unequal distribution of gender among the 33 participants: 24 women and 9 men. The participants' ages (M = 24.58, SD = 9.72) ranged from 18 to 52 years old. The participants' educational background is similarly skewed, with 23 of them saying they had finished or are now enrolled in a bachelor's degree at a university. In another question, participants were asked about their gaming experiences. They were given the option to rate their experiences on a Likert scale of 1 to 5, where 1 represented no experience at all and 5 indicated they thought they were experts (see Table 1).

The participants self-reported as having a bit less gaming experience than average, as seen by the mean score of 2.76 with a standard deviation of 0.87. When asked which type of game they like to play, participants revealed that action/adventure, puzzle, and simulation games were the most played genres (see Table 1).

Table 1

Sample Characteristics of Participants

Gender	Age Range	Gaming experience range	Educational level	Times a genre was selected as favourite
9 Male 24 Female	18-52 (M= 24.58, SD=9.72)	1-4 (M = 2.76, SD= 0.87)	Primary School = 0.00% Secondary School = 5.88% Studying University of Applied Science (HBO) = 8.82% University of Applied Sciences (HBO) = 14.71% Studying University = 50.00%	Role-Playing Games = 10 First-Person Shooter = 10 Strategy = 11 Sports = 10 Puzzle = 10 Simulation = 10 Fighting = 0

	University Bachelor = 20.59% Graduate or professional degree (MA, MS, MBA, PhD, JD, MD, DDS, etc.) = 0.00%	Racing = 6 Other = 2

Materials

An internet tool called Qualtrics was used to create a single questionnaire with participant replies. The consent form, participant demographics, the Narrative Engage Ability Scale, two narratives (one “sexist” and one “neutral”), and the ambivalent sexism scale were all included in the questionnaire. The narrative engage ability scale is a questionnaire to assess how engaging participants found the narratives presented to them. It was not part of my research question and therefore not of interest for this thesis, since it was part of another’s researcher’s project.

Ambivalent Sexism Inventory (ASI)

The Ambivalent sexism inventory (ASI) is a questionnaire to measure participants' attitudes towards gender and sexism. It contains 22 items with Likert scales ranging from 0 to 6 used to answer questions (0 = strongly disagree, to 6 = strongly agree) that measures hostile sexism (HS) (e.g., Women exaggerate the problems that they have at work) and benevolent sexism (BS) (e.g., Women should be cherished and protected by men). The items 6, 7, 9, 15, 20, and 22 are stated reversed (e.g., Feminists are making entirely reasonable demands of men) and must therefore be reverse coded before conducting analysis. The greatest possible mean score with a total of 22 things would be 6. Cronbach's alpha for the Ambivalent Sexism Inventory (ASI) ranged from 0.83 to 0.92, indicating good to excellent internal consistency (Glick & Fiske, 1996). A participant's commitment to sexist attitudes is therefore positively correlated with a higher questionnaire score.

Avatar creation process in Sims4

The creation of the stories used in this study took into consideration a contemporary and recognizable setting. Items from the ASI were used as assertions in the fiction to portray sexism for the "sexist" narrative, which was about a girl named Emily. The “neutral” narrative, about a girl named Sophie, was a similar story without items from the ASI. Appendix A contains the narratives that were read by the participants. The stories were also provided on paper for the convenience of the study and could been used during the avatar creation process. The researcher in attendance provided a laptop for the purpose of conducting the study.

The video game Sims 4, published by the company Electronic Arts (EA), was used to create the avatar. Sims 4 offers a simple user interface for making avatars, and it also gives users the possibility to assign personality traits to their avatars. The screen and voice were captured during the avatar creation process so that the participant's selections and justifications could be reviewed later. This also allowed for the transcription of the findings. Open Broadcaster Software (OBS) was the program used for this.

Transcription and coding process

The audios of the recording of the avatar creation process got transcript using an internet tool named TurboScripe. Further, ATLAS.ti was the program used to code the transcripts. For the coding, a meaningful codebook is necessary which got designed to record related themes and patterns that appeared in the data (see Appendix). To improve its validity and reliability, this coding frame was subjected to recurrent evaluation and revision integrating feedback from several researchers during the evaluation and refinement of the coding frame. To be able to measure how sexist an avatar is indeed created, all the stereotypes that were present in the

screenshots of the avatars (clothes, traits, looks) were added up to a score, which will be called Sexist Avatar Score (SAS) throughout this thesis.

Design

The participants were presented with two distinct conditions through narrative scenarios. One condition involved a story with remarks and phrasing intended to convey sexism (Emily), derived from items in the Ambivalent Sexism Inventory, while the other condition involved a neutral story (Sophie) without any sexist content. The narratives were arranged in a random order to ensure that the sequence would not affect the outcomes. All participants had to perform the creation of both avatars; therefore, it was a repeated measure design.

Procedure

There were multiple steps in the study. The researcher provided each participant with a laptop so, they could begin the questionnaire. This survey included questions about demographics and prior video gaming experience after presenting a consent form. Participants were then required to respond to a questionnaire regarding their interaction with a narrative. Following the response to this, the two stories were presented in a random sequence. Half of the participants started with the "sexist" narrative about a girl named Emily and the other half of the participants started with the "neutral" narrative about a girl named Sophie. The first story was given to participants on paper as well as on a computer screen. Following their reading of the first narrative, participants were invited to build an avatar they thought would fit well in the story. Sims 4 was then opened in a separate tab, and the screen and voice recording were initiated using Open Broadcast Software. Thinking aloud was a technique utilized in the creation of the avatar. The participant was given a time frame of 15 minutes to design the avatar for each story. The researcher requested the participant to identify and describe the decisions they made

when creating the avatar to the greatest extent possible. When subjects were silent or failed to provide an explanation for their decisions, the researcher would ask a follow-up question or request more information. For instance, if a participant decided not to alter the avatar's hair and gave no explanation, the researcher in attendance would ask the participant why they felt the avatar's hair did not need to be changed. Upon initiating the avatar creation process, users were presented with many customizable attributes, as depicted in Figure 2. It was possible for participants to alter their skin tone, hairstyle, facial characteristics, clothing, and accessories. Furthermore, participants were free to assign character attributes they believed would fit the avatar if they felt comfortable doing so. The second narrative was delivered, and the same procedures were repeated if the subject expressed satisfaction with his avatar. Subsequently, the individual was required to finish an additional survey on sexist beliefs, the Ambivalent Sexism Inventory (ASI), and evaluate the degree to which they aligned with their personal beliefs. Lastly, the participant received information about the genuine aim of the research and was provided with the choice to have their information removed.

Figure 2

Customizable features in avatar creation

Note: This figure demonstrates the customizable features during the avatar creation procedure.1: Hair, make-up and facial features 2: Clothing, shoes, body type and skin tone 3: Personality traits

Data Analysis

Quantitative Analysis

The quantitative data analysis was conducted using R and R Studio, leveraging various statistical packages to perform the necessary tests. Data from participants who did not provide complete responses were excluded from the analysis. Only fully completed questionnaires were included. Likert scale responses from the Ambivalent Sexism Inventory (ASI) were converted to numerical values for statistical analysis with the lowest number

denoting disagreement and the highest number denoting agreement, were used to rate the participants' results on the Ambivalent Sexism Inventory (ASI), respectively. Reverse-coded items in the ASI were re-coded to ensure consistency in scoring. Descriptive statistics, including means, standard deviations, and frequency distributions, were calculated for demographic variables (age, gender, educational level) and key measures (ASI scores). The Shapiro-Wilk test was used to assess the normality of the ASI score distribution. A significant p-value indicated a departure from normality, suggesting the need for non-parametric tests in subsequent analyses. Welch's t-test was employed to compare ASI scores between male and female participants, as it does not assume equal variances.

Quantitative and Qualitative Analysis

Qualitative findings were cross-validated with quantitative results to ensure consistency and provide a comprehensive understanding of the relationship between ASI scores and avatar characteristics and looks. The correlation between ASI scores and specific avatar characteristics (e.g., revealing clothing, strong makeup, stereotypical traits) was analysed coding into binary variables (e.g., presence or absence of revealing clothing, strong makeup, and stereotypical traits). Each avatar created by the participants was evaluated based on these characteristics, and the presence of each trait was recorded. Each presence of such stereotyped traits added up to a score of how many sexist traits this avatar has, which got defined as the Sexist Avatar Scale (SAS) to assess the total number of stereotypical or sexist traits and compared them to the ASI score of the participant creating a scatterplot to show the correlation between these two variables. Besides that, a paired t-tests were conducted to compare the “SAS“ scores between the Emily and Sophie narratives to test the hypothesis, that avatars created under

the sexist narrative would create more sexist avatars and therefore score higher on the SAS.

Qualitative Analysis

Qualitative data was collected using the "thinking aloud" method during the avatar creation process. Audio recordings were transcribed verbatim to capture participants' verbalizations and justifications for their avatar customization choices. An initial coding frame/codebook was developed based on the research questions and theoretical framework. Independent coders reviewed a subset of transcripts to ensure reliability and refined the coding scheme. Inter-rater reliability was assessed using Cohen’s kappa, and discrepancies were resolved through discussion. The finalized coding frame was applied to all transcripts, and thematic analysis was conducted to identify recurring patterns and themes. Coding was done until consensus was reached.

Major themes were identified, such as "Appearance," "Personality Traits," and "Stereotypical Features." Subthemes within "Appearance" included "Innocent Appearance," "Neutral Appearance," "Revealing Clothing," and "Superficial Traits." Subthemes within "Personality Traits" included "Positive Traits" (e.g., academic, open-minded) and "Negative Traits" (e.g., drama queen, materialistic). Furthermore, chi-square tests were performed to examine the distribution of codes across different narrative conditions (sexist vs. neutral). The significance of differences in code frequencies was evaluated to determine the impact of narrative on avatar customization choices.

Results

H1: Impact of gender on the ambivalent sexism inventory

The research's quantitative component was a questionnaire designed to measure

participants' levels of sexism, the Ambivalent Sexism Inventory (ASI). According to the study's findings, an overall mean of 3.04 was recorded. The lowest score that could be found on record was 2.09, while 5.23 was the highest. Figure 2 displays a distribution of all the mean scores. The data appeared to considerably depart from a normal distribution, as revealed by the results of the Shapiro-Wilk normality test (p=.01). The successful implementation and testing of the two dimensions of hostile and benevolent sexism was then verified using a factor analysis. The results of this factor analysis, however, could not be as precise because the data is not regularly distributed. By doing this, it was demonstrated that respondents understand and react to the questions in a way that is compatible with the theoretical framework and that the concepts measured by the ASI were accurate as anticipated by its theoretical framework.

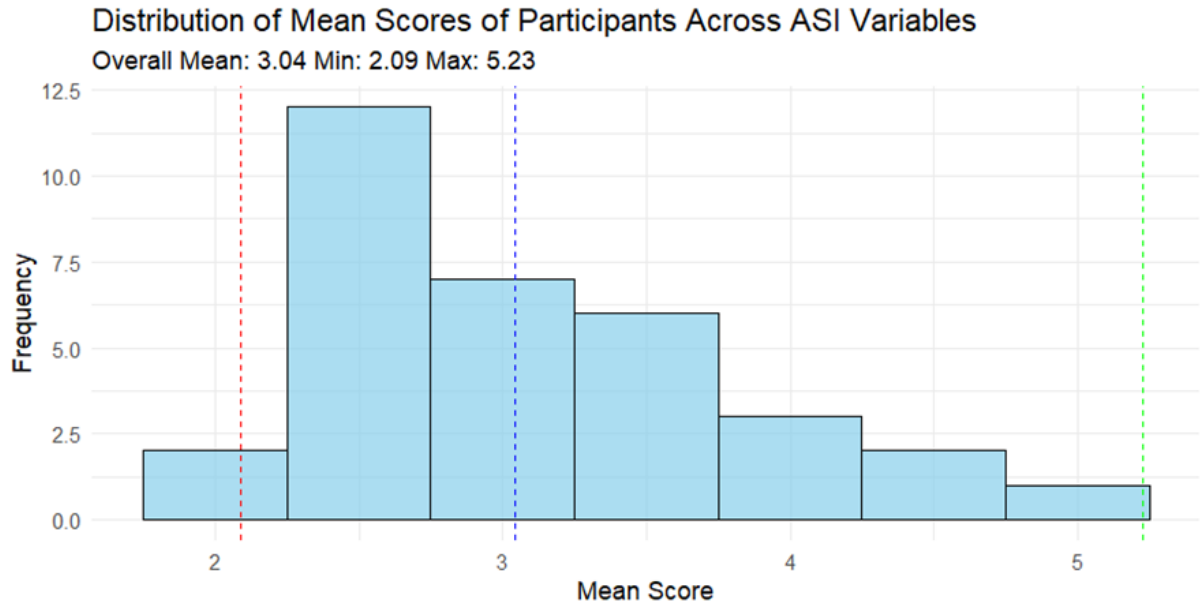
Figure 3 demonstrates a subscale for the distributions for the mean scores for hostile and benevolent sexism. The following were the findings of the factor analysis. Kaiser's rule states that all four factors are valuable, and the factor analysis was evaluated on two components: one for hostile sexism and one for benevolent sexism. Both factors had sum squared loadings larger than 1. Furthermore, the cumulative variance indicated that both components accounted for 46.6% of the variance overall, the obtained p -value, which examined the null hypothesis regarding whether the model's given number of factors—in this case, two—is adequate to fully capture the dimensionality of the data set, was not significant (p = 0.177).

The Ambivalent Sexism Inventory (ASI) scores were compared for males and females using a Welch's t-test. The mean ASI score for males was (M = 3.81) (SD = 0.62), while for females it was (M = 3.17) (SD = 0.73). A Welch's t-test indicated that this difference was not statistically significant, t (52.23) = −1.36, p= 0.133 with a 95% confidence interval for the difference ranging from -1.23 to 0.15. These results suggest that there is little variation in sexist

beliefs between genders within this sample. Therefore, the hypothesis, that male participants score higher on the ASI compared to other genders got rejected.

Figure 2

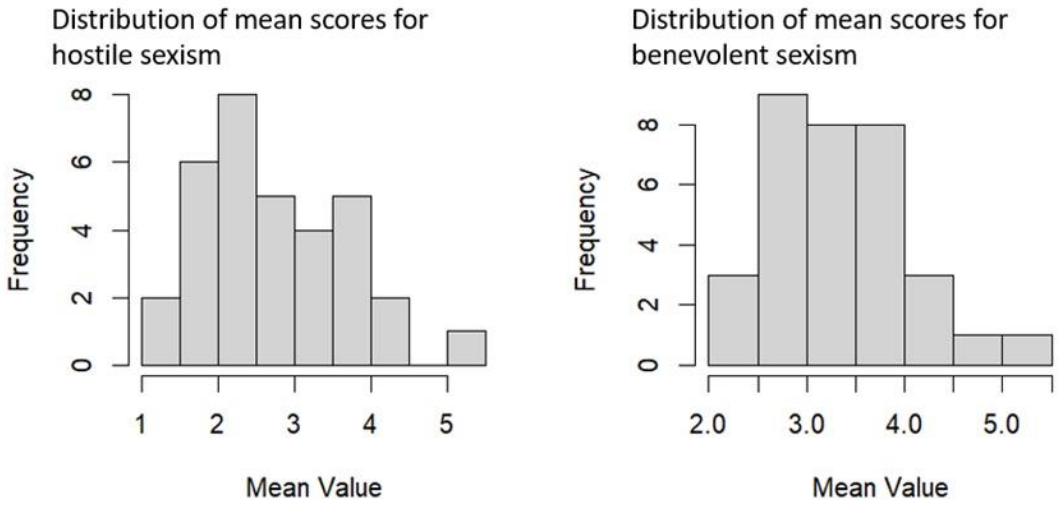
Distribution of mean scores of participants across ASI variables



Note: red line indicating minimum 2.09, blue line indicating overall mean 3.04 and the green line indicating maximum at 5.23.

Figure 3

Subscale for the distributions for the mean scores for hostile and benevolent sexism.



H2: a) Impact of level of sexist beliefs on Avatar creation

Looking at Table 2 and 3 we can see some examples of the scores of the ASI (Ambivalent Sexism Inventory) and the traits and looks used for the creation of the avatars (see Appendix B for complete Table 2 and 3).

Table 2

First five descriptions of avatars “Emily”

Emily	Gender Identity	Sex	ASI Score	Traits	Clothing description	General Appearance	SAS
L1	Male	Male	3.68	Open-minded, Talkative, Social, Creative, Healthy	Long black pants, White crop top, Sneaker	Long blonde Braids, Strong Make-up, No glasses	3

L2	Female	Female	3.91	Academic, romantic, Impulsive,	Blue short dress, Jewerlly, black flats	Long brunette Hair, pale skin tone, natural make-up	5
L3	Male	Male	2.5	Party-animal, Talkative/ Extraverted, Erratic, Clumsy, Impulsive	Short red dress, Red high heels, Jewellry	Long brunette pony tail, strong make up	9
L4	Female	Female	2.5	Romantic, Ambitious, Flirty,	Blacks short skirt, White blouse, Black cowboy boots	Middle brunette hair, slighty tanned skin, neutral make up	4
L5	Female	Female	4.27	Party-animal, talkative/Extraverted, Romantic, hot-headed, ambitious	Short blue pants, Revealing pink Top, Blue heels with glitter	Brunette Hair, tanned skin tone, wide chest, Toned body type, strong Make up	8

Note:L1,L2,Z1,Z2…are the participant numbers. Sexist Avatar Scale (SAS) determine the total of characteristics which were considered stereotyped or sexist (see Table 4)

Table 3

First five descriptions of avatars “Sophie”

Sophie	Gender Identity	sex	ASI Mean	Traits	Clothing description	General Appearance	SAS
L1	Male	Male	3.68	Opend-minded, self-assured, talkative, cheerful, creative	Green Sweat pants, Grey Sweatshirt jacket, Chucks	Black hair, Strong make up, Eyebags, Tanned skin	2

L2	Female	Female	3.91	Academic, Ambitious, self-assured, clumsy	Blue jeans, Yellow T-shirt, Flats	Blonde long wavy hair, Natural Make up, Tanned skin	3
L3	Male	Male	2.5	Academic, Self-assured, Creative, Ambitious,	Grey Sweatpants, Purple sweatjacket, sneaker	Brunette ponytail, Natural Make up, Eyebags, Tanned skin	1
L4	Female	Female	2.5	Likes writing, Loyal, ambitious, creative	Jeans, Revealing white top, Normal shoes	Brunette hair, Natural Make up, Tanned skin,	2
L5	Female	Female	4.27	Open-minded, Talkative, ambitious, romantic, cheerful,	Grey Skinny jeans, Pink strapless top, Sandals	Blonde hair, Tanned skin, Natural Make up, Toned body	5

Note: L1,L2,Z1,Z2…are the participant numbers. Sexist Avatar Scale (SAS) determine the total of characteristics which were considered stereotyped or sexist (see Table 4).

One of the Hypothesis in this thesis was that “People who have a higher level of sexist beliefs would also create more sexist avatars”. Character traits and appearances that were considered “sexist” or “stereotyped” were for example: “Revealing clothes” such as “short skirts”, “dresses”, “crop tops” or explicitly mentioned “strong make-up” and stereotypical traits such as “party-animal”, “flirty” or “romantic” (see Table 4). Character traits that would not be considered “sexist” or “stereotyped” would be for example: “ambitious”, “intelligent” or

"friendly", for clothing it would be "long pants", "long sleeve shirts", "sneakers" and neutral general appearances include "neutral or no make-up", "pale skin" or "short hair".

Table 4

Traits considered "stereotype" or "sexist"

Traits	Clothing description	General Appearance
Romantic	Crop tops	Long hair
Party-animal	Short dress	Strong make-up
Clumsy	Short pants	Tanned skin
Flirty	(short) Skirt	Toned body type
Impulsive	High heels	Skinny body type
Erratic	Jewellery	Wide chest
Materialistic	Glitter	
Non-committal		
Mean		
Jealous		
Snob		

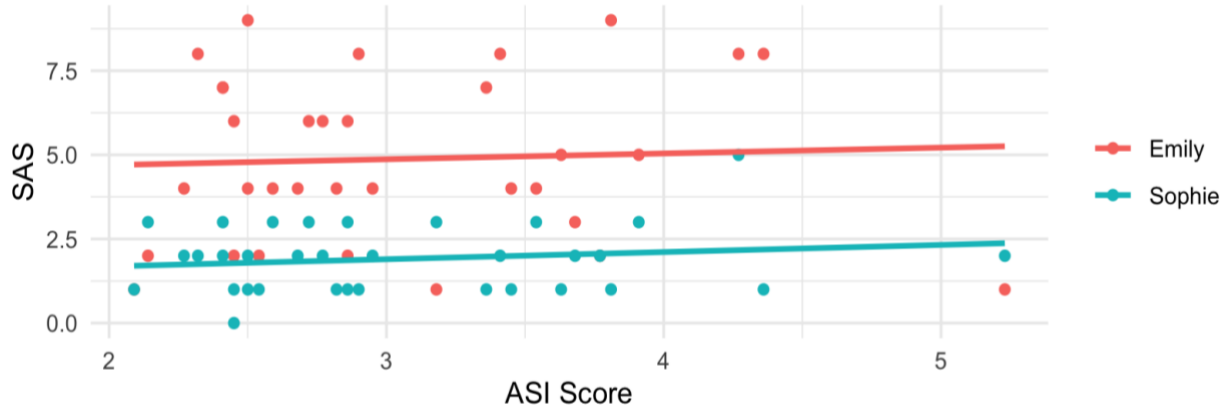
Note. Every Avatar containing one of these traits, looks or clothes received one point on the total score for sexist avatars (SAS)

Comparing each ASI score with the total number of sexist characteristics (SAS) using a scatterplot (see Figure 4) shows that correlation of 0.05 was found for the sexist narrative "Emily", which indicated a very weak positive correlation between the ASI and the SAS. For the

neutral narrative “Sophie” a correlation of 0.15 was found, which also indicates a weak positive correlation between the ASI and SAS, although it is somewhat stronger than for “Emily”. Both correlations are weak, meaning that for both Emily and Sophie, ASI scores do not strongly predict SAS scores. In fact, this rejects the hypothesis that “Participants with higher levels of sexist beliefs will be more likely to design avatars that align with traditional gender stereotypes and norms.”

Figure 4

Correlation between ASI scores on SAS scores



Note: Each point represents a participant's ASI score and corresponding SAS value. The trend lines show the general direction of the relationship between ASI scores and SAS for each group.

H2 b): Impact gender on avatar creation

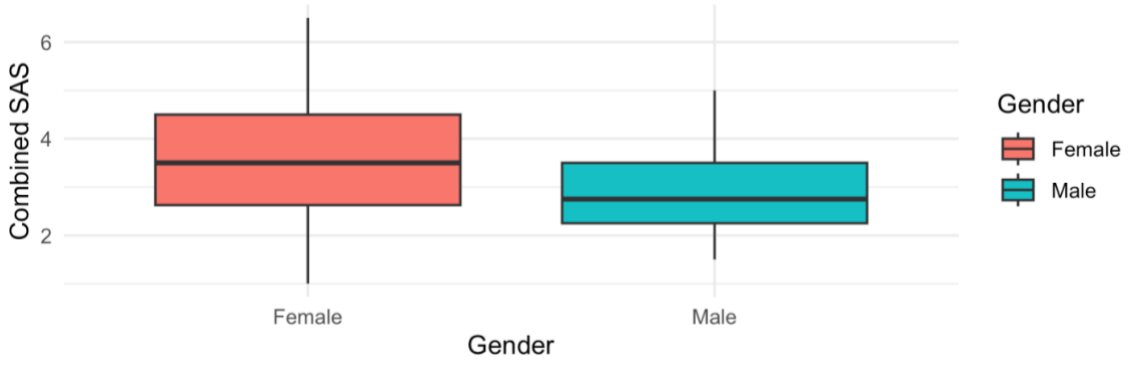
Keeping the first hypothesis in mind: “Participants who identify as male will score higher on the Ambivalent Sexism Inventory (ASI), indicating higher levels of sexist beliefs compared to participants who identify as a different gender.”, which already got rejected, this rises interest to the question if gender itself influences sexist avatar creation.

A Welch two-sample t-test was conducted to compare the SAS scores between male and

female participants. The results indicated that there was no significant difference in SAS scores between males (*M* = 3.00) and females (*M* = 3.46), t (3.85) = 0.59, p = 0.59. The 95% confidence interval for the difference in means ranged from -1.75 to 2.67, therefore it can be concluded based on the results, that there is no significant difference in gender when it comes to the extent how sexist an avatar is created. For visualization a boxplot was created combined SAS scores for both Emily and Sophie by gender (see Figure 5).

Figure 5

Boxplot of combined SAS Scores by gender for both narratives



To see if there might be variations for either the sexist or neutral narrative considering the effect of gender on the level of sexist avatar creation more Welch's t-tests were performed, one for each narrative. The results of the Welch's t-test indicate that there is no statistically significant difference (*p* = 0.61) in the SAS scores between female and male participants for the neutral narrative "Sophie". The mean SAS score for females is (*M* = 1.92) and the mean SAS score for males is (*M* =1.75), therefore the difference in mean SAS scores between females and males is small (1.92 - 1.75 = 0.17). The standard deviation for females is (*SD* =1.09), indicating a

higher variability in SAS scores among female participants than for males. The performed Welch's t-test for "Emily" does not have a statistically significant difference (p = 0.7) in the SAS scores between female and male participants for the sexist narrative "Emily". (M = 5.00) is the mean score of the SAS for female participants and differentiate 0.75 from the mean SAS score for males, which is (M = 4.25). When now comparing the results of the difference between the genders on the extent to how sexist an avatar was created for the narratives "Emily" and "Sophie" we can see that the mean scores are higher for both genders in the sexist narrative "Emily" compared to the neutral narrative "Sophie". There was a greater variability in SAS scores (Sexist avatar Score) for the Emily narrative compared to the Sophie narrative, particular among male participants (see Figure 6 and Figure 7). Therefore, it can be said, that the hypothesis, that participants identifying as male will create more stereotypical or sexist avatars, can be rejected.

Figure 6

Boxplots of SAS Scores by gender neutral narrative Sophie

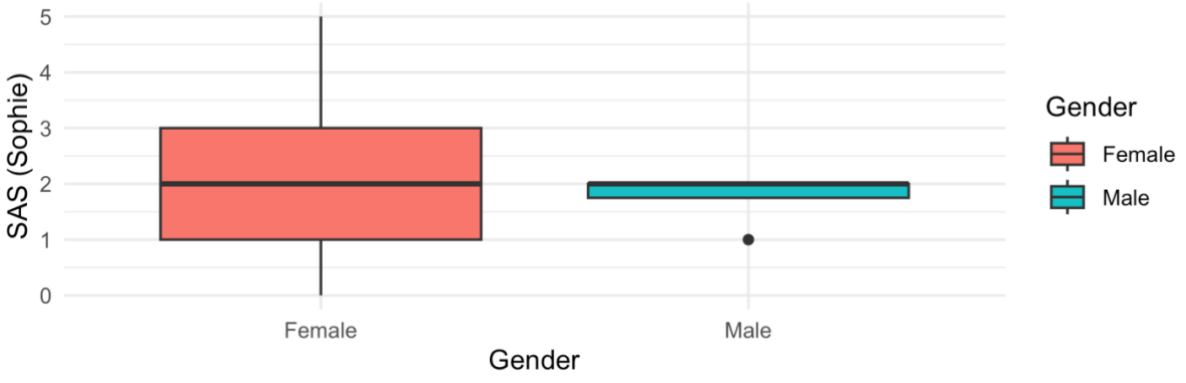
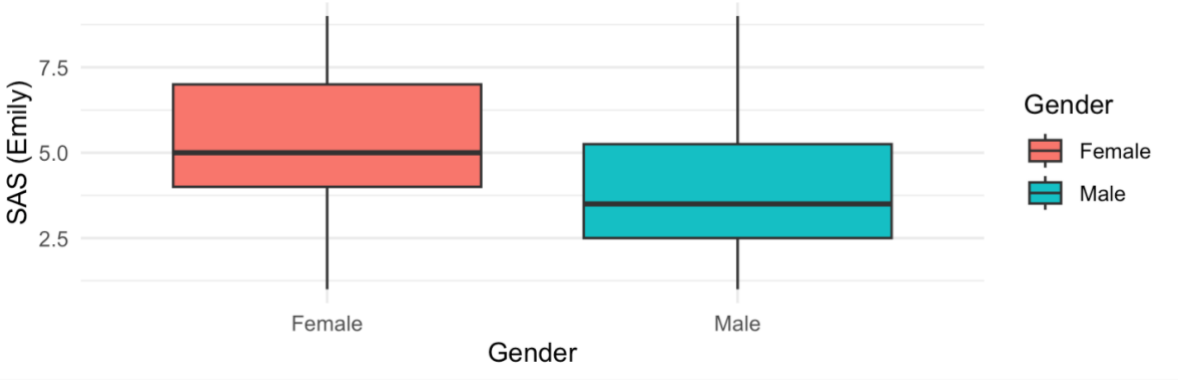


Figure 7

Boxplot of SAS scores by gender for sexist narrative Emily



H3: Impact of narratives on avatar creation

As previously stated, no significant difference could have been found when testing if male participants score higher on the Sexist avatar score than females and no effect could have been found when testing if the gender itself influences the avatar creation. Despite the rejected hypothesis, the mean SAS scores are higher for both genders in the "Emily" narrative compared to the Sophie narrative, indicating that participants tended to create more stereotypical avatars in the sexist narrative (see Table 2 and 3 in Appendix B). This leads to the last hypothesis "Participants exposed to a sexist narrative will create avatars that reflect more traditional and stereotypical gender roles compared to those exposed to a neutral narrative."

The research's qualitative component was an avatar creation tool (Sims4) used to create two characters based on two narratives. One a sexist (Emily), according to the ASI, and one neutral story (Sophie) were presented to the participant (see Appendix A). The Participants designed the two characters using personality traits and appearance and clothing. The personalities associated with "Emily" covered a broad range, including talkative/social, extraverted/party animal, amorous, ambitious, and creative attributes. These recurrent

characteristics highlight the complex interactions between personal identity and social expectations, casting light on pervasive stereotypes and cultural conventions regarding women's behaviour, relationships, and goals. “Emily’s” clothing descriptions indicate a preference with frequent references to jewellery, denim jackets, crop tops, short dresses, high heels, and crop tops. These descriptions shape ideas of femininity and self-expression by reflecting broader cultural influences and trends. The overall appearance of the character “Emily” ranged from a variety of hairstyles and colours and different facial features. Nevertheless, was a strong Make-up used frequently (see Appendix B).

In comparison to the neutral character “Sophie”, the character displayed more often character traits such as being self-assured, academic, creative and more intellectually oriented. Considering the clothing descriptions “Sophie” was often dressed in comfortable, sporty clothing such as sweatpants and T-shirts, whether “Emily” was wearing revealing clothes. "Emily" avatars are generally characterised by bright makeup, groomed hair, and tanned skin, emphasising a beautiful and striking look. On the other hand, "Sophie" avatars typically have more natural, subtle looks, with less makeup and easier hairstyles, giving off an aura of effortlessness and laid-back elegance (see Appendix B).

More focus is placed on the participant experiences, views, and opinions in this qualitative portion of the data, which were gathered through two avatar creation exercises in which participants were asked to express their thoughts aloud. We may identify multiple themes and learn more about why people build their avatars the way they do and what drives them to make these decisions by approaching this data in a qualitative manner. To dive deeper, several themes and codes will be examined in this section along with excerpts from the avatar building process. In Figure 8 and Figure 9 a visualization of the structure of the codebook that was used is

given. The table in Appendix C gives a summary of the frequencies of the following codes that were collected.

Figure 8

Visualization of the codebook for themes "Appearance" and "Comparison"

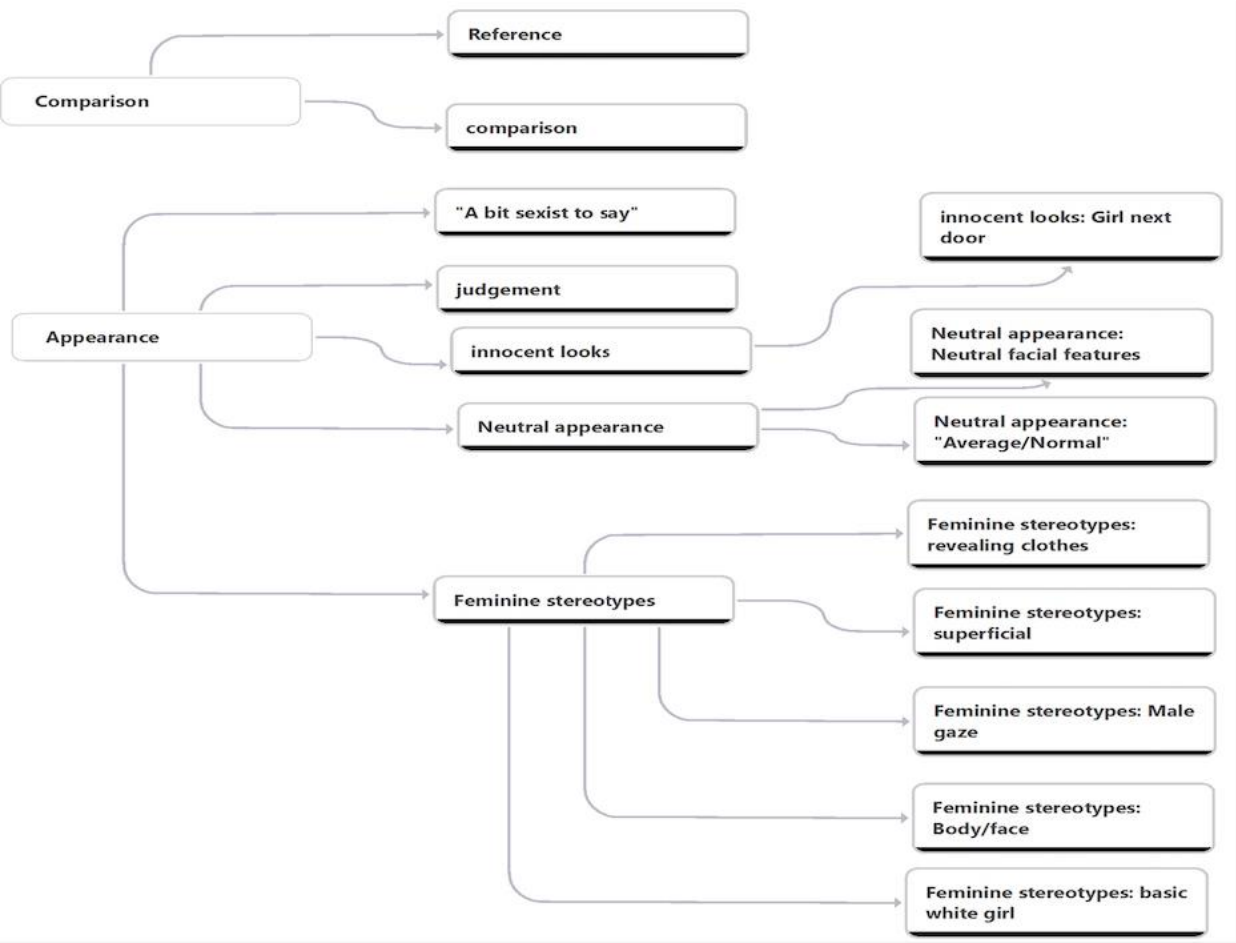
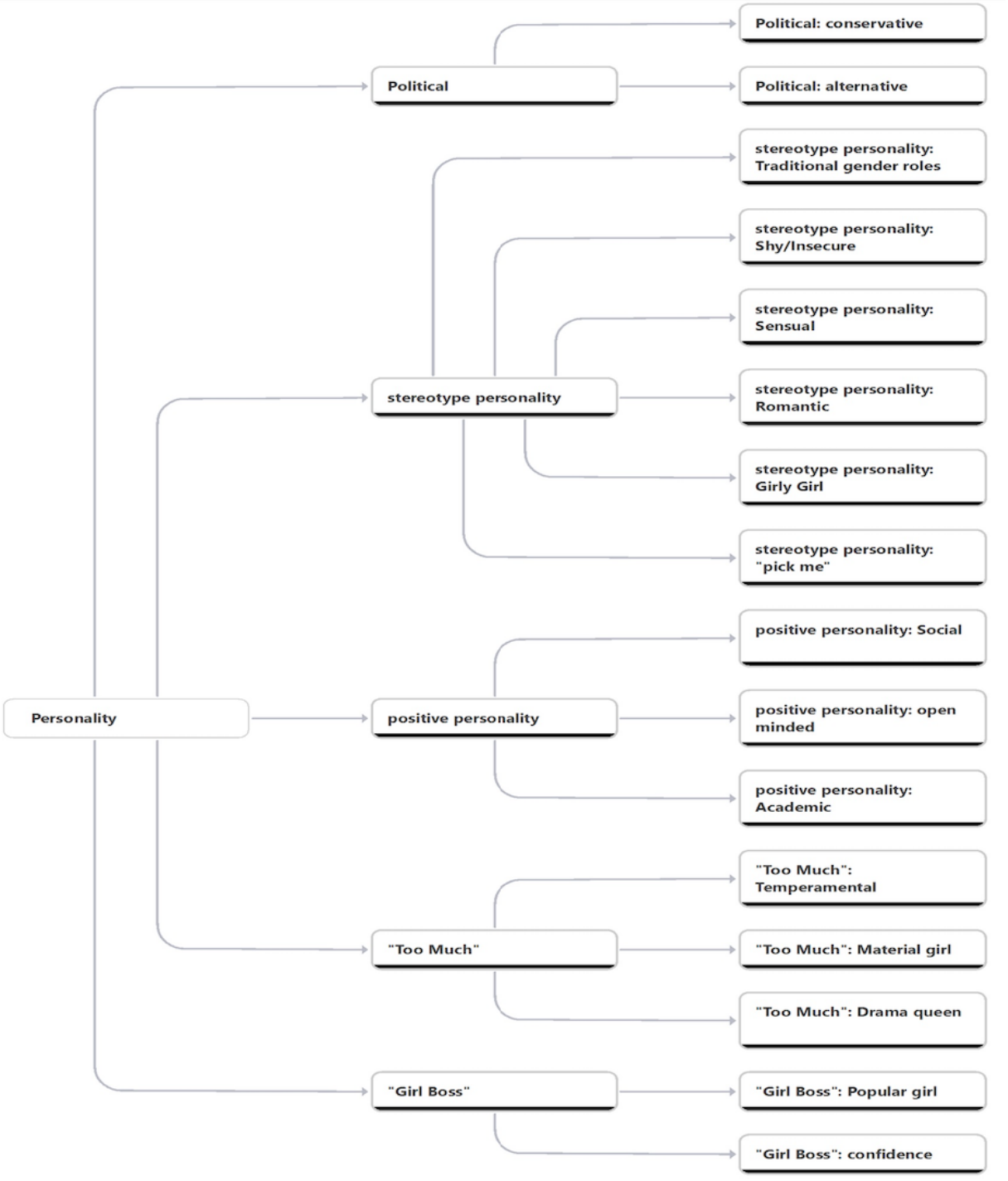


Figure 9

Visualization of the codebook for themes "Appearance" and "Comparison"



Themes and codes Explained

Comparison. When participants compare their avatar to other real or fictitious avatars or people, the first theme “Comparison” had been applied (see Figure 8). There are two subcodes in this theme: “comparison” itself, which includes the comparison to one of the other avatars that the participants were asked to design. Therefore, the order in which the participants formed the avatar and read the narratives also affected the comparison to another avatar. "Oh, that's a little bit too much," is a quote from the comparison code that gives an example of a comparison between Emily and Sophie. “Yes. She is a little more audacious than Emily.”

References. “References” is this theme's second subcode. This code denotes instances in which figures from contemporary pop culture films or television shows are mentioned or compared. Both physical and personality similarities could be compared to pop culture icons. "Like Regina George" is a quote that provides an illustration of this code (see Figure 10). Like someone who likes to talk about other people behind their back.” (see Table in Appendix C).

Figure 10

Comparison between "Regina George" from the Movie "Mean Girl" to the Avatar "Emily"

Note: left picture is "Regina George" known from the Movie "Mean Girls" (2004), which represents a stereotypical "sexist" girl in western society

Appearance. The theme "Appearance" focuses mostly on participant comments and expressions regarding the looks of the avatars they were building or their mental image of the avatar. Furthermore, potential stereotypes are also differentiated here.

"A bit sexist to say": The first category of the theme "Appearance" is "A bit sexist to say", which included when someone admitted, that they were using sexist stereotypes. An example would be the quote "I know this is extremely sexist, but I would make the avatar look like…".

Judgement. This category was used for participant that mentioned judgements and justifications based on assumptions such as "So she's in love with John? Maybe, probably. Yes, otherwise she wouldn't meet him that much" (see Appendix C).

Innocent looks. "Innocent looks" was applied as soon as the participant gave an account of the avatar's look that suggested it belonged to an "inconspicuous" person. There is only one subcode for this category, which is "Girl next door" (see Figure 8). The subcode was applied if the participant mentioned that the character reminded them of a girl they might run into on the street. This typically indicated that the avatar's appearance was described as cute rather than attractive, and that it also suggested that the avatar was innocent and inconspicuous. This code was added to give a summary of the avatars that participants felt seemed the most innocent.

Neutral appearance. When a participant said that the avatar appeared normal or was unable to identify distinguishing aspects for specific physical attributes, the category "neutral appearance" and the subcode "Average/Normal" came into play. There were frequently vague descriptions of the avatar in this code. A quote from this subcode might be, "Not too big, not too skinny. Yes, like a typical, average body." This code was employed to provide a visual representation of the story that, based solely on look, elicited the weakest reactions. Since face features also included nuances like makeup or accessories, they were sub coded separately in this category as "neutral face features". Participants who characterised their avatar as someone who was wearing neutral, or no make-up were given this subcode. "Probably, like standard makeup nothing that stands out too much, probably some eyeliner," is a quotation that embodies this guideline. "To blend in with the other girls, add a little lipstick as well, but nothing too bold."

Feminine stereotype. This category was applied each time a participant described an avatar that, in the case of women, corresponded to a stereotypical appearance. Because both avatars were female, only stereotypes related to women were considered. The first code used when avatars were described as having stereotypical appearances when it came to physical attributes, such as addressing feminine facial structures like or body types, was "body/face". This

subcode was used when different types of feminine stereotypical appearances were mentioned. A quote that highlights this is "She's probably hot, like modern-day standards hot." Another subcode “Male gaze" refers to the masculine perspective's description of the avatar, which frequently focused on emphasised traits that were attractive to men. The code “revealing clothing” refers to participant statements of the avatar in which they state that the avatar is dressed provocatively or revealing, possibly showing some skin. “Short skirts or dresses” and “crop tops” are two examples. The subcode “superficial” asks participants to describe the avatar with a limited emphasis on external appearances and caring a lot about her looks; an example of this code is the quote "I believe she is hairless on her body." “She seems really feminine and alluring to me.” “She is dressed in crimson, including her high heels, for this reason.” This code was chosen because it offers a summary of which avatar participants believe to be the most stereotypical, which is a crucial component in addressing the research topic. The final subcode is "basic white girl," which describes how the avatar meets the stereotype of a normal white girl. Participants may do this by explicitly declaring that their avatar is a white girl or by bringing up hobbies or actions that are frequently connected to stereotypes about white girls, often seen as “basic” or “boring”.

Personality. The personality topic and the appearance theme are quite similar; however, the personality theme focuses on participant emotions, expressions, and/or remarks regarding the characteristics of the avatars they were required to design (see Figure 9). There are multiple categories with subcodes in this theme.

Positive personality traits. “Positive personality traits” is the first category, and it lists specific qualities that make up positive personality traits. This code addressed remarks or ideas made by participants regarding personality traits that are typically seen as positive.

There are three subcodes in this code; “academic” is the first one. Positive personality attributes that are described to the avatar as being advantageous in an academic setting are the focus of the subcode “academic”; examples include being intelligent, ambitious, and well-organized. Second, when a participant stated that their avatar was receptive to novel concepts and encounters, the subcode “open-minded” was employed. Lastly, the subcode “social” was applied to avatars that were deemed appropriate for social settings; examples of these types of avatars would be those that were extraverted, kind, or outgoing.

Girl boss. The category which is named "girl boss" comes next. This code relates to instances in which users characterise their avatar as a self-assured, independent woman. This code has two subcodes: “popularity” and “confidence”. The phrase "but she knows her own worth she is really like okay this is me not really needing to impress people" is an example of a quote from this code, which was frequently used by participants to show respect or gratitude for their avatar. This code proved helpful in revealing the story that made participants picture a self-assured, well-liked woman.

Too much. In this theme, the term "too much" refers to instances in which a participant would characterise the avatar as possessing characteristics that, in certain circumstances, may be deemed excessive. The subcodes derived from this cover some of the characteristics that one may seem dramatic, including drama queen, which is an avatar that is characterised as being very dramatic and doing it to attract attention. The code "material girl" refers to avatars who are interested in money or other items that imply riches. Avatars that exhibit emotional instability, such as becoming quickly agitated or overreacting to small issues, are classified as “temperamental”, "I think that she's not a very nice person, but very selfish and very self-

centred," reads a quote from this code. I therefore want to give her something that gives her that appearance."

Stereotypical personality. Lastly, societal expectations regarding women's personality qualities are frequently addressed in the code that deals with stereotyped personality features. The subcode of the same name refers to these, which are frequently related to personality traits that conform to traditional gender roles. It considers women as being nurturing, sensitive, or insecure. Furthermore, the subcode "Girly girl" denotes a participant's interest in or description of behaviours associated with their avatar that are typically associated with women, including wearing stylish clothes or doing their nails. Is it also about clichés like "pick me" girls. This subcode handles instances in which the avatar is depicted as a girl who makes a concerted effort to appear attractive to men. These clichéd personality traits are portrayed in the following quote: "She is always on-time and has good sense of style." She even matches her nail polish to her top. She's so well-groomed that she even applies the same nail polish on her feet." The subcodes of “romantic” and “insecure”, which discuss avatars that tend to lack confidence in social situations and romantic times where the participant suggests the avatar is prone to displaying romantic emotions towards others. The sensual code comes next, which clarifies descriptions of avatars that are said to act seductively towards others, particularly men. This behaviour could involve outright claims that the avatar is acting seductively or that it has alluring qualities or interests.

Political. The last category is political opinions, which is further broken down into political “conservative” and political “alternative” subcodes. The subcode substitute concerns descriptions of an avatar whose viewpoints lean primarily left. On the other hand, the conservative subcode describes an avatar that mostly holds liberal viewpoints.

Distribution of the codes

Looking at a few codes that might very well capture the difference to investigate how the tales affected the participants during the avatar construction process. The narrative Emily told had elements taken from the ASI; these elements were used to suggest sexism. Furthermore, Sophie's story has been made as close to Emily's as feasible, with the exception of the neutral components that have been used in place of the ASI's objects. As one participant put it, "I mean, I feel like it's very similar to before, like the outgoing story is the same, but the whole way the character seems is completely different." Participants claimed that the stories were remarkably like one another.

The codes chosen for examination offer the clearest picture of whether sexist prejudices were impacted by the narratives when creating the avatars. Furthermore, a Chi-Square test will be performed to see whether the differences between the storylines are significant. See Appendix B for a comprehensive list of all the codes and their distributions.

The first category examined was the appearances' theme's stereotypes of women. These codes are examined because they provide a clear indication of how closely both characters adhere to the traditional female appearance. This category's five codes were all in Emily's favour. When this category's codes were examined for a significant difference, the results indicated that every code had a p-value below the $p = 0.05$ cutoff. This indicates that Emily had a much higher likelihood of being classified based on a stereotypical image of a woman.

Table 5 provides a summary of the outcomes for this category. The Chi-Square test was also used to evaluate the code judgements. Because the code pertains to participant judgements based on their own presumptions or emotions, it may indicate that one of the storylines may lead to more judgements about the avatar than the other. Although Emily and Sophie used this code a

total of 28 and 17, respectively, the Chi-Square test yielded a non-significant result (X-squared = 2.69, p = 0.10). indicating that the differences in avatar evaluations that could be attributed to the story are not very great. The code “a bit sexist to say” was only coded once in favour of Emily and was therefore too unable to be analysed.

Table 5

Chi-Square test results for the category feminine stereotypes

Category	Emily's Quotes	Sophies Quotes	Chi-Square Statistic	p - Value
Body/Face	109	61	13.553	p= 0.0002319 ***
Basic White Girl	23	7	8.5333	p= 0.003487 **
Male Gaze	5	0	5.000	p= 0.02535 *
Revealing Clothes	44	7	26.843	p <0.0001 ***
Superficial	45	10	22.273	p <0.0001 ***

Note: All codes had the same DF of 1

The personality theme was used to evaluate the "girl boss" category. The two codes that made up this category were confidence and popularity. This code was chosen for analysis because, as shown in Appendix B, Emily was supported by both codes, and because popularity and confidence might provide insight into how a narrative may affect social standings.

It can be inferred from the analysis's results that there was no significant difference in the

perceptions of popularity (X-squared = 2.12, p = 0.15) or confidence (X-squared = 0.21, p = 0.65) because of the narrative. Secondly, there are three subcodes for the category "Too much": drama queen, material girl, and irritable. Since these codes are characterised as having bad characters, an analysis of them will be conducted to determine whether the narrative affected the participants' perceptions of the personalities of their avatars.

Conversely, there are three subcodes inside the positive personality category as well. These norms are social, intellectual, and tolerant. These codes represent the times when participants said their avatar had qualities that were thought to be advantageous. In contrast to the "Too much" category, Sophie is preferred by all three subcodes here. It will be interesting to discover if these variations also have any significance. Table 6 shows that all of these differences are significant according to the Chi-Square test results. This shows that Sophie consistently has a considerably higher code for positive personality traits than Emily does for negative ones.

Table 6

Subcodes of categories "Too much" and positive personality

Code	Emily Quotes	Sophie Quotes	Chi-Square	p-value
Temperamental	37	9	17.04	p < 0.01 **
Drama Queen	12	2	7.14	p = 0.01 *
Material Girl	13	2	8.07	p < 0.01 **
Academic	25	39	3.06	p = 0.08
Open Minded	1	14	11.27	p < 0.01 **
Social	10	25	6.43	p = 0.01 *

Looking at some pictures of the avatars that were designed (Figure 11 and 12), it is feasible that the five avatars that scored highest on the SAS were Avatars created based on the sexist narrative Emily (see Figure 11) and the five avatars that scored lowest on the SAS were Avatars created based on the neutral narrative Sophie (see Figure 12).

Figure 11

five highest sexist avatars based on the Sexist Avatar Score (SAS) (see Appendix B).

Note: representing the participant number, below the avatar name and lastly the SAS score

Figure 12

five lowest sexist avatars based on the Sexist Avatar Score (SAS) (see Appendix B).

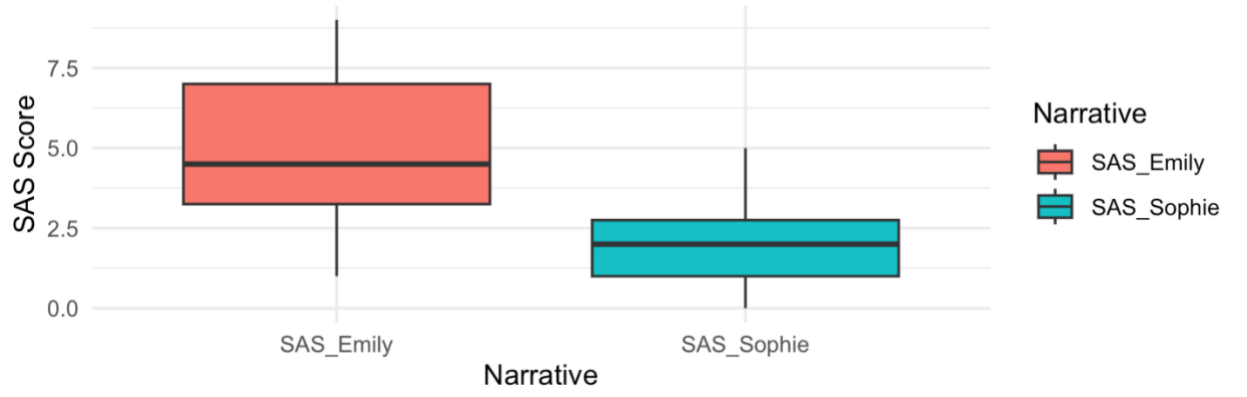
Note: *representing the participant number, below the avatar name and lastly the SAS score*

After performing a paired t-test, the mean SAS score for Emily is (M = 5.03), with a standard deviation of (SD = 2.42). The mean SAS score for Sophie is (M = 2.03), with a standard deviation of (SD = 1.32). The t-value is t = 6.26, indicating a substantial difference between the two narratives. The p-value is extremely small $p < .001$, suggesting strong evidence that the SAS score for Emily is significantly higher than for Sophie. The 95% confidence interval for the mean difference ranges from 2.19 to infinity, reinforcing the conclusion that the SAS score for Emily is significantly higher. The p-value is $p < .001$, which means we can accept the hypothesis and conclude that there is a significant difference between the SAS scores for Emily and Sophie and

people score higher on the SAS when presented with a sexist narrative for the avatar creation process. The mean difference in SAS scores between Emily and Sophie is 3, indicating that, on average, the SAS score for Emily is 3 points higher than the SAS score for Sophie (see Figure 12). Therefore, using different approaches test the hypothesis, participants exposed to a sexist narrative will create avatars that reflect more traditional and stereotypical gender roles compared to those exposed to a neutral narrative, it can be accepted.

Figure 12

Boxplots created for better visualization of the comparison of SAS Scores for Emily and Sophie



Discussion

The purpose of this study was to determine the potential effects of gender, the degree of sexist belief (towards the feminine gender) and narratives on the process of creating a video game avatar to explore the research topic: " The Influence of Sexist Beliefs, Gender and Narratives on avatar creation". Research was done using both quantitative and qualitative methods. The findings of both study approaches are going to be interpret and set into relation to the research question.

Summary of Findings

The quantitative analysis showed neither a significant difference of gender on the level of sexist beliefs (ASI), nor did the ASI score indicate a significant correlation with the level of how sexist an avatar was created (SAS). Also, looking at the gender itself and its impact on avatar creation, no significant difference could have been found. Therefore, the first hypothesis and hypothesis two a) and b) got rejected. However, the third hypothesis, participants exposed to a sexist narrative will create avatars that reflect more traditional and stereotypical gender roles compared to those exposed to a neutral narrative, got accepted and a significant difference was found using quantitative and a qualitative approach.

Theoretical implications

The study utilized the Identity Theory and Self-Categorization Theory, which can help in understanding why men would score higher, which they did not in this study, in the Ambivalent Sexism inventory. Identity Theory posits that individuals develop their self-concepts through social interactions and their roles in society. Men might be socialized to value dominance, control, and traditional gender norms, which can contribute to higher ASI scores (Carr, 2006). Self-Categorization Theory suggests that individuals categorize themselves and others into social groups, which then influences their behaviour and perceptions. Men might identify strongly with the male in-group, which traditionally holds more power in many societies. This identification can lead to the endorsement of attitudes that maintain traditional gender hierarchies, reflected in higher ASI scores (Nowak & Fox, 2018). However, the difference was not high enough to call it significant, which can be due to the unequal distribution of the gender of the participants, with 73% of the participants being female and only 27% of the participants identifying as male. Most participants were either currently enrolled in or had completed a bachelor's degree, which could

also influence their sensitivity to gender issues. Higher education levels might correlate with greater awareness of sexism (Denson et al., 2021). The age range of participants (18-52 years) with a mean age of (M = 24.58) years suggests that the sample was predominantly young adults. Younger individuals are likely to be more engaged with digital media and contemporary discussions on gender, which could influence their responses.

Another weak positive correlation could be found when looking at the relationship between the ASI score and the extent to how sexist an avatar was created (SAS score) (see Figure 4). The use of the Ambivalent Sexism Inventory (ASI) in this study highlights the nuanced nature of sexist attitudes. The distinction between hostile and benevolent sexism, as measured by the ASI, provides a deeper understanding of how different forms of sexism manifest in avatar creation. While hostile sexism involves overtly negative attitudes towards women, benevolent sexism encompasses seemingly positive but ultimately patronizing attitudes that reinforce traditional gender roles (Glick & Fiske, 1996). The weak positive correlations between ASI scores and sexist avatar traits suggest that both forms of sexism can subtly influence virtual representations.

The results of this study can be compared to findings of the study by García-Sánchez et. al., (2019): “Are sexist attitudes and gender stereotypes linked?” The study found that deeply ingrained beliefs about gender roles and stereotypes have a significant impact on behaviours and attitudes (García-Sánchez et al., 2019). In this thesis it was found that participants who scored higher on the Ambivalent Sexism Inventory (ASI), tended to make avatars that represented more conventional and stereotypical gender roles. Both the quantitative and qualitative methods demonstrated this, with avatars created under the sexist narrative "Emily" displaying more stereotyped qualities than avatars created under the neutral narrative "Sophie." These studies

highlight the significant impact that internalised gender standards have on people's behaviour. While our study concentrated on the virtual world of avatar creation, García-Sánchez et al.'s research linked sexist sentiments to more general society behaviours and attitudes. The fundamental topic is same across contexts: whether in digital or real-world settings, people's perceptions and portrayals of gender roles are nonetheless shaped by deeply ingrained gender stereotypes.

Even though the relationship was weak for both narratives, it was slightly higher for the neutral narrative Sophie than for the sexist narrative Emily. Despite, the difference for these narratives in relationship with ASI score, not being the main focus of my hypothesis in this study, it is an interesting finding worth looking into. People who scored higher on the ASI also creating more sexist avatars, especially for the neutral narrative Sophie, which implies that in general, when explicit sexist cues are absent, individuals with higher sexist beliefs may still express their biases implicitly. This could imply that such individuals have a predisposition to default to stereotypical gender norms even when not prompted by overtly sexist narratives.

When looking at the outcomes of the impact of gender on avatar creation (see Table 7,8,9), it can be said that looking at the mean score women scored higher on the extent to how sexist they created an avatar on both narratives. Despite this difference also not being significant, this could be again due to the unequal distribution of gender among the participants. Another reason why women did score higher on the SAS could be the social desirability bias, which states that women might feel more pressure to conform to socially desirable behaviours and norms when participating in research studies. They may create avatars that align more closely with traditional and stereotypical gender norms to present themselves in a way that they perceive to be more acceptable or expected (Fisher, 1993).

Talking about the last hypothesis, that participants exposed with a sexist narrative will also create more sexist avatars, the Social Cognitive Theory (SCT) might serve as an explanation for this finding. The Social Cognitive Theory (SCT) to virtual environments, demonstrates that video game narratives serve as powerful tools for observational learning. According to SCT, individuals learn behaviours, attitudes, and emotional responses through observing others within a social context (Bandura, 1986). In this study, the sexist narrative provided a context that influenced participants to create avatars that reflected traditional gender stereotypes. This finding supports the notion that media narratives can reinforce and perpetuate existing social norms and prejudices, even in virtual spaces.

Practical Implications

The outcome of this study is making aware of potential values that could enhance todays game design and development. A wider variety of avatar customisation choices that go beyond conventional gender stereotypes should be made by game makers. This entails providing apparel that is not sexualized, a range of body shapes, and a diversity of personality qualities that do not support traditional gender stereotypes. This strategy can lessen the spread of discriminatory ideas in virtual spaces and encourage gender inclusivity (Fox & Tang, 2014; Nakamura, 2013). Game designers ought to be aware of the plots and narratives in their creations. The attitudes and opinions of players about gender roles can be influenced by developers by steering clear of sexist storylines and favouring stories that highlight equality and diversity (Shaw, 2014).

Since this study is representative for implicit sexism in general and not only prominent in gaming environments, the solutions for this problem can be exceeded to the educational system such as that the results of this study can be used by educators to create lesson plans that address how media and digital representations affect gender stereotypes (Coyne et al., 2016). Gender

equality in digital settings is important, and instructors can help students understand it by adding talks and activities around these subjects (Gill, 2007).

Encouraging Positive Role Models by exposing and supporting video games that effectively advance gender equality and include a varied cast of non-stereotypical characters, we can lead by example in the industry. Honours, critiques, and press attention can bring these games to light and inspire others to do the same (Chess, 2017).

Limitations and future research

Despite the fact that this study produced several notable findings, certain limitations were found. First off, the sample size was somewhat small—only 33—but a larger sample size might have added more codes to the study and provided other insights on the motivation that goes into creating an avatar. In addition, the vast majority of the study's participants were female. It is difficult to say if the results would have been the same if more men had participated. This restriction is particularly significant because the participants' avatars were both made by women; as a result, it is possible that men and women had different avatar attire and/or personality qualities ascribed to them. The study was carried out in a particular cultural environment, which might have an impact on how generalizable the results are to other cultural or social contexts where attitudes and conventions about sexism and gender roles can be different. Considering the demographics most of the participants in the study were psychology students at the University of Twente. That can also have an impact on the finding and results, as it is not representative for the whole population. Furthermore, the age of most students needs to be considered, drawing attention to the different understandings of sexism.

For future research, an important and prevalent limitation for most of qualitative studies

is time. More time to look for participants and to look for a diverse sample size would make the study more reliable and valid to incorporate more participant insights and generate a greater range of codes. To guarantee that the results can be more broadly applied to society, it is crucial to include more genders, more ethnicities and academic backgrounds.

Talking about including more genders, in this research one of the goals was to test the hypothesis: “Participants who identify as the gender male will design more sexist or stereotyped avatars compared to other genders”. A question of about the gender identity, as well as the biological sex was included in the survey about the demographics. Looking at the Tables in Appendix B we can clearly see that all the gender identities were equal to their biological sex. It would have been interesting to see the difference of people who are not cisgender and their sexist beliefs and avatar creations and to also include non-binary people in the study.

Another drawback is that the study was carried out by two researchers of different genders, who also recorded the participants' vocal thoughts while they were making the avatar. It is likely that participants were impacted by the gender of the researcher present during the study, even though efforts were taken to maintain the same conduct. It is plausible that subjects withdrew stereotypes about women when a female researcher was present, or that subjects felt less at ease making remarks when a male researcher was present. It could be an option for future research to make sure that no researcher present has the potential to sway the results based on their gender in future studies. This might be resolved by hiding researchers from view in the space and use an intercom and two-sided mirror to conceal the researchers' identities from the participant, who would then be less swayed. Two researchers of different genders present in the room when the findings are being recorded is an additional option.

While coding the transcripts of the thinking aloud, measures were taken to make

sure the researchers did not exhibit conformational bias. It was possible that the researchers would exhibit conformation bias while coding because they knew which avatar was based on a sexist or neutral story, which might have affected the outcome. The transcripts were mixed up and then dispersed among the researchers to make sure they were no longer aware of which transcript belonged to which avatar to prevent this as much as feasible. Having many researchers code the transcripts—all of whom were not involved in the study and are therefore oblivious to which avatar is based on which narrative—could enhance the transcript coding process and could help in preventing confirmation bias.

Social desirability could also cause some form of bias. Participant might have said or done things, to seem socially desirable and conform to most of their peer group or themselves as well as to conform to the expected standards of the researcher despite the gender.

The term “sexism” is a broad term, which is hard to conceptualise and measure. Personal perceptions and implicit biases make sexism subjective, and variations in legal and policy frameworks influence its definition and redress. The distinction between “Beauty standards” and “Sexism” was hard to define. When in this study e.g., “revealing clothes” were considered sexist, participants might have just selected it because they liked it or wear something similar. We used the term “sexism” also for “stereotypes” and “traditional gender norms”, which might not be classified as “sexist” in other literature, with similar topics. People might have said or done something that the researcher wrongly defined as sexism, also taking into consideration the language barrier and/or irony or sarcasm.

Having talked about all the limitations this study might have, there are also some strength that can be stressed, such as that a mixed-method approach was used to conduct this study. The study employs both quantitative and qualitative methods, providing a comprehensive

understanding of the influence of sexist beliefs, gender identity, and narratives on avatar creation. This approach allows for a deeper exploration of the research question from multiple angles and therefore provides more validity and credibility. Especially the qualitative component was detailed in means of the analysis of participants' verbalizations during the avatar creation process, which provides rich, nuanced insights into their decision-making processes and the influence of narratives.

Even though this study offered several findings, this rises interest to other motivations or variables that could influence avatar creation such as e.g, how the participants would have rated themselves as being sexist, how much these ratings would have aligned with their actual score of the Ambivalent Sexism Inventory (ASI) and if participants who identified themselves as more sexist would also be more sexist in the avatar creation process? This comparison could reveal the distinction between implicit and explicit biases. Participants might not be aware of their sexist beliefs, yet these beliefs could still influence their avatar creation, highlighting the pervasive nature of implicit sexism.

Having said all this, this study shows that it does not matter if you are male or female, or if you have higher sexist beliefs than others, we all still have stereotyped mental images about women in our mind, even if we do not think that we do. An interesting take home question about this study would therefore probably be: “How can we actively identify and challenge implicit sexist biases in our everyday lives to create a more inclusive and equitable society?”

Conclusion

In conclusion, this study offers insightful information about how gender, sexist beliefs and narratives affect avatar customisation in the virtual world. Despite no significant difference between the gender and the level of sexist beliefs, as well as no significant difference in the

relationship between the ASI scores and the extent to how sexist an avatar was created the qualitative analysis revealed significant differences in how the avatars "Emily" and "Sophie" were perceived and described, with the avatar based on the sexist narrative "Emily" being more likely to embody sexist stereotypes.

Overall, this research contributes to the understanding of how sexist beliefs manifest in virtual environments and offers a foundation for future studies to explore interventions that can promote more inclusive and balanced video games. Addressing the identified limitations and expanding the scope of the research will be crucial in advancing the field and fostering virtual spaces that challenge rather than reinforce traditional gender stereotypes.

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Appendix A

Sexist Narrative

Participant would be asked to create the avatar of Emily.

Below you will find a description of a narrative from an unnamed roleplaying videogame.

In this roleplaying game you play as Emily, A young girl from a small town who leaves her friends behind, ready for life on a university campus.

On the lively campus of Smarty-pants University, where many students hope to prove themselves, lies the Kapa fraternity, known for its prestige and influence. Among the many eager freshmen is Emily, a young woman hoping for a good time at this university.

When first applying for membership she was pleasantly surprised when it felt like many of the (male) members were ready to put her on a pedestal. However first she had to take part in a with challenges filled introduction ritual, however Emily felt like the challenges she had to face were to hard, although many thought she was exaggerating, which caused some annoyance with her peers.

After a week of the hazing period, she met Luke, the leader of the fraternity. For Luke this encounter with Emily felt like love at first sight and he makes it his goal to go on a date with her. She and Luke quickly developed a relationship however, this lead to some heavy critique from her peers, since they feel like Emily is using Luke, and his position in the fraternity to get her way. As Emily is facing backlash from her friends, her tendency to be easily offended caused some problems in her relationship, she feels like Luke as her boyfriend should protect her. Luke tries to stop the backlash and reconcile with Emily, but Emily does not seem to appreciate all that Luke is doing for her.

As the tensions on the camps keep rising, Emily's plans for a good time seem to be in jeopardy. Will Emily be able to keep her hopes of the college experience of her dreams alive?

Concept Neutral Narrative

Participant would be asked to create the character of Sophie

Below you will find a description of a narrative from an unnamed roleplaying videogame.

In this roleplaying game you play as Sophie, a young girl from a small town who leaves her friends behind, ready for life on a university campus.

On the lively campus of Smarty-pants University, where many students hope to prove themselves, lies the Kapa fraternity, known for its prestige and influence. Among the many eager freshmen is Sophie, young woman with dreams of achieving big things.

Upon applying for membership to the fraternity, Sophie finds herself pleasantly surprised by the friendly and supportive members of the fraternity. However, the initiation ritual proves to be more demanding than expected. However the once so supportive members of the fraternity weren't very sympathetic, leading Sophie to ask herself whether this fraternity is really something for her. Despite her concerns, she perseveres through the introduction period.

After the introduction period Sophie meets Luke, the leader of the fraternity. Sophie forms a close connection with Luke. Their bond grows as they help each other with the many problems that one faces during life on a university campus. However, Sophie's friendship with Luke causes some of the other fraternity members to become jealous and hostile towards Sophie.

Will Sophie be able to achieve her goals at this university while also keeping her friendship with Luke intact, while dealing with jealous and hostile fraternity members?

Appendix B

Table 2

Description of avatars "Emily"

Emily	Gender Identity	Sex	ASI Score	Traits	Clothing description	General Appearance	SAS
L1	Male	Male	3.68	Open-minded, Talkative, Social, Creative, Healthy	Long black pants, White crop top, Sneaker	Long blonde Braids, Strong Make-up, No glasses	3
L2	Female	Female	3.91	Academic, romantic, Impulsive,	Blue short dress, Jewerlly, black flats	Long brunette Hair, pale skin tone, natural make-up	5
L3	Male	Male	2.5	Party-animal, Talkative/ Extraverted, Erratic, Clumsy, Impulsive	Short red dress, Red high heels, Jewellry	Long brunette pony tail, strong make up	9
L4	Female	Female	2.5	Romantic, Ambitious, Flirty,	Blacks short skirt, White blouse, Black cowboy boots	Middle brunette hair, slighty tanned skin, neutral make up	4

L5	Female	Female	4.27	Party-animal, talkative/Extraverted, Romantic, hot-headed, ambitious	Short blue pants, Revealing pink Top, Blue heels with glitter	Brunette Hair, tanned skin tone, wide chest, Toned body type, strong Make up	8
L6	Female	Female	2.45	Party-animal, talkative, hot-headed, Friendly, Erratic	Long black flared pants, pink heels, Jewellry, denim jacket, white top	Short brunette hair with pink highlights, Strong Make up, tanned skin	6
L7	Female	Female	2.77	Smart, Clean, friendly,	Short grey skirt, Croptop, chucks, jewellry	Long blonde hair, tanned skin, strong Make up,	6
L8	Female	Female	2.41	Party-animal, Extraverted, smart, Clean, friendly	Denim ripped shorts, crop top, Jewellry, black heels	Brunette long hair, tanned skin, toned body, natural make up	7
L9	Female	Female	2.32	Romantic, flirty, Loyal, Hot-	Short denim skirt, Heeled boots, revealing white top	Brunette long hair, Tanned skin, Strong Make-up, Tattoo,	8

				headed, creative			
L10	Female	Female	2.41	Athletic, Jealous, creative,	Black top, Short skirt, Heels, jewellry	Long blonde hair, Strong Make up, Tanned skin, Toned body,	7
L11	Female	Female	2.59	Party-animal, cheerful, romantic, talkative, athletic	Skinny jeans, Boots, Crop top	Brunette middle hair, pale skin, Toned body, Natural make up,	4
L12	Female	Female	3.36	Friendly, talkative, cheerful, snob, dirty	Green short dress, Basic shoes Jewellry	Long blonde hair, Tanned skin tone, Strong Make up, Toned body,	7
L13	Female	Female	2.72	Party-animal, Hopeless romantic,	Long orange pants, Revealing white top, sandals	Long blonde hair, Tanned skin, Strong Make up,	6

				Friendly, perfectionist,			
L14	Female	Female	2.95	Family-oriented, hot headed, clumsy, materialistic	White short dress, Black high heels, Watch	Bleached blonde hair, tanned skin tone, natural make up	4
L15	Female	Female	2.86	Nature love, hot headed, self-assured, genius	Red short dress, Red high heels, Jewellry	Long black hair, Strong Make up, Tanned skin tone,	6
L16	Female	Female	3.54	N.A	Long beige pants, Yellow crop top, Sneaker	Long black hair, Tanned skin, Strong make up,	4
L17	Female	Female	2.90	Materialistic, Party-animal, talkative, social, Erratic	Short red dress, Red high heels Jewellry	Long bleached blonde hair, Strong make up, Pale skin tone	8
L18	Female	Female	3.77	Genius, Loyal, funny	Long black pants, Black blazer,	Bleached blonde hair, natural make	2

					Striped shirt, Normal shoes	up, curvy, pale skin	
Z1	Male	Male	5.23	Aspiration, talkative, mean, moody	White shirt, blue jeans, sneakers	Brown short hair, natural make up, tanned skin tone, glasses	1
Z2	Female	Female	2.86	N.A	Black t-shirt with skull, pink pants, boots	Long blonde hair, tanned skin, natural make up, no glasses	2
Z3	Female	Female	3.45	Loner, Bookworm, athletic, romantic, intelligent,	Yellow floral dress, sneakers	Long blonde hair, tanned skin, sunglasses	4
Z4	Female	Female	2.14	N.A	Brown long coat, gray top, black pants, brown shoes	Long blonde hair, tanned skin, no glasses	2
Z5	Female	Female	2.82	Party animal, outgoing, cheerful, talkative	Black crop top, black pants, sneakers	Blonde hair, natural make up, tanned skin, chubby body type,no glasses	4

Z6	Male	Male	2.45	Ambitious, Cheerful, Creative	Blue sweater, white pants, sneakers	Short blonde hair, strong make up, chubby, no glasses	2
Z7	Female	Female	2.27	Materialistic, moody, jealous, ambitious, reliable	Magenta top, dark blue jeans, sneakers	Long blonde hair, pale skin, strong make up, no glasses	4
Z8	Female	Female	2.68	Hot-headed, party animal, romantic, talkative, childish	White jacket, blue top, floral leggings, black shoes	Long blonde hair, tanned skin, natural make up, no glasses	4
Z9	Male	Male	2.09	Ambitious, jealous, nature	Red plaid shirt, blue jeans, red sneakers	Long blonde hair,asian ethnic, natural make up, no glasses	1
Z10	Male	Male	4.36	Romantic, flirty, jealous, non-committed	Yellow crop top, pink mini skirt, blue heels	Long blonde hair,tanned skin , strong make up, no glasses	8
Z11	Male	Male	3.63	Open-minded, talkative,	Light blue crop top, ripped jeans, sneakers	Long wavy red hair, tanned skin,	5

				evil, mean, jealous		strong make up, glasses	
Z12	Male	Male	3.81	Romantic, flirty, jealous, non-committed	Pink top, blue jeans, beige shoes	Long blonde hair, skinny body type, tanned skin, strong make up, no glasses	9
Z13	Male	Male	3.41	Party animal, jealous, mean, talkative	Black dress, bracelets, heels	Long black hair, natural make up, tanned skin tone, no glasses	8
Z14	Female	Female	3.18	Ambitious, Cheerful, Childish	Orange jacket, beige top, green pants, flip-flops	Short brown hair in ponytail,chubby body type, strong make up, pale skin, no glasses	1
Z15	Female	Female	2.54	Hot-headed, bookworm, outgoing, likes writing	Red jacket, black top, white pants, boots	Long black hair, strong make up, pale skin, no glasses	2

Note: L1,L2,Z1,Z2…are the participant numbers. Sexist Avatar Scale (SAS) determine the total of characteristics which were considered stereotyped or sexist (see Table 4).

Table 3

Description of Avatars "Sophie"

Sophie	Gender Identity	sex	ASI Mean	Traits	Clothing description	General Appearance	SAS
L1	Male	Male	3.68	Opend-minded, self-assured, talkative, cheerful, creative	Green Sweat pants, Grey Sweatshirt jacket, Chucks	Black hair, Strong make up, Eyebags, Tanned skin	2
L2	Female	Female	3.91	Academic, Ambitious, self-assured, clumsy	Blue jeans, Yellow T-shirt, Flats	Blonde long wavy hair, Natural Make up, Tanned skin	3
L3	Male	Male	2.5	Academic, Self-assured, Creative, Ambitious,	Grey Sweatpants, Purple sweatjacket, sneaker	Brunette ponytail, Natural Make up, Eyebags, Tanned skin	1
L4	Female	Female	2.5	Likes writing, Loyal, ambitious, creative	Jeans, Revealing white top, Normal shoes	Brunette hair, Natural Make up, Tanned skin,	2

L5	Female	Female	4.27	Open-minded, Talkative, ambitious, romantic, cheerful,	Grey Skinny jeans, Pink strapless top, Sandals	Blonde hair, Tanned skin, Natural Make up, Toned body	5
L6	Female	Female	2.45	Academic, Ambitious, positive, nerdy	Blue lose jeans, Black sweatjacket, sneaker	Brunette Hair, Natural make up, Pale skin	0
L7	Female	Female	2.77	Nerdy, creative, clean, loyal	Denim jacket, Red top, Blue jeans, Chucks	Brunette long wavy hair, Tanned skin, Natural make up,	2
L8	Female	Female	2.41	Vegetarian, creative, clumsy, Clean,	Long blue pants, Pattered Blouse, Chucks	Long blonde hair, Natural make up, Pale skin,	2
L9	Female	Female	2.32	Romantic, loyal, clean, ambitios,	Short blue tennis skirt, White Tshirt,	Blonde Ponytail, Natural Make up,	2

					Sneaker,	Tanned skin	
L10	Female	Female	2.41	Smart, academic, clumsy, creative, non-committal	Blue jeans, Blue top, flats	Brunette hair, Tanned skin, Natural make up	3
L11	Female	Female	2.59	Friendly, talkative, ambitious, musicia,	Blue jeans, Revealing white top, sneaker	Blonde hair, Natural make up, Tanned skin	3
L12	Female	Female	3.36	Open-minded, slobby, talkative, cheerful, genius,	Beige pants, Striped poloshirt, Normal shoes	Long brunette wvy hair, Natural make up, Pale skin, Glasses	1
L13	Female	Female	2.72	Clumsy, healthy, academic, family oriented,	Green pants, White blouse, Sneaker, Jewellry	Brunette hair, Tanned skin, Natural make up	3
L14	Female	Female	2.95	Academic, Food lover, loyal,	Long black skirt, White blouse, sneaker	Bleached hair, Pale skin Natural make up	2

				materialistic			
L15	Female	Female	2.86	Loyal, Bro-type, Ambitious, family oriented	White pants, Pink pullover heels	Long bleached hair, Strong Make up, Pale skin	3
L16	Female	Female	3.54	N.A	Long green pants, Denim jacket and blue shirt, heels	Short blonde hair, Tanned skin, Strong make up,	3
L17	Female	Female	2.90	Academic, ambitious, book worm, loyal	Grey jeans, Purple tshirt, Purple chucks jewellry	Short blonde hair, Natural Make up, Pale skin	1
L18	Female	Female	3.77	Creative, loyal, musican	Long black pants, Green blouse, sneaker	Brunette long hair, Natural make up, Tanned skin tone	2
Z1	Male	Male	5.23	Academic, Good person, Genius	Beige top, white skirt, blue shoes	Long black hair, no glasses, indian ethnic,	2

						natural make up, skinny body type	
Z2	Female	Female	2.86	N.A	Blue top, white pants, pink shoes	Long black hair, no glasses, natural make up, chubby body type,	1
Z3	Female	Female	3.45	Athletic	White tank top, black shorts, pink sneakers	Black hair in ponytail, tanned skin tone, athletic body, natural make up, sunglasses	1
Z4	Female	Female	2.14	Jealous,cheerful, Smart, outgoing	Purple floral dress, beige shoes	Short brown hair, tanned skin tone, natural make up, no glasses	3
Z5	Female	Female	2.82	Open-minded, perfectionist,	Pink shirt, black pants, white sneakers	Curly brown hair in ponytail, tanned skin	1

				Family person, good		tone, no glasses	
Z6	Male	Male	2.45	Materialistic, ambitious, hot headed, outgoing	Blue jacket, blue plaid skirt, black shoes, cap	Short black hair, no glasses, pale skin tone, natural make up	1
Z7	Female	Female	2.27	Talkative, outgoing, hotheaded, cheerful, open-minded	Black shirt, black skirt, white sneakers	Long brown hair, no glasses, tanned skin, natural make up,	2
Z8	Female	Female	2.68	Bookworm, Foodie, creative, loner, ambitious	White lace top, beige pants, purple shoes	Long blonde hair, no glasses, blue eyes, natural make up, tanned skin tone	2
Z9	Male	Male	2.09	Ambitious, hot headed, academic	Blue jacket, blue jeans, black shoes	black hair in two buns, no glasses, tanned skin.,	1

						natural make up,	
1Z10	Male	Male	4.36	Open-minded, good, outgoing, cheerful, talkative	Pink shirt, green pants, red shoes	Short black hair, no glasses, tanned skin, no make up	1
Z11	Male	Male	3.63	Bookworm, smart, good, loner, genius	white top, blue pants, white shoes	Red short wavy hair, no glasses, natural make up, chubby body type, tanned skin tone	1
Z12	Male	Male	3.81	Bookworm, creative, good, outgoing, smart	Magenta top, ripped jeans, black shoes	Short black hair, no glasses, chubby body type, natural make up, tanned skin	1
Z13	Male	Male	3.41	Gloomy, vegetarian, romantic, gloomy, smart	Beige cardigan, white top, green pants, gray shoes	Long blonde hair, glasses, pale skin tone, no make up	2

Z14	Female	Female	3.18	Good, perfectionist, loner, loyal	Magenta top, blue jeans, pink shoes	Long black hair, no glasses, tanned skin, strong make up	3
Z15	Female	Female	2.54	Writer, good, loyal	Brown top, long white skirt, blue sneakers	Brown hair in ponytail, glasses, tanned skin, natural make up	1

Note: L1, L2,Z1,Z2…are the participant numbers. Sexist Avatar Scale (SAS) determine the total of characteristics which were considered stereotyped or sexist (see Table 4).

Appendix C

Table

Atlas.ti Coding thinking aloud method

Theme	Category	Name	Explanation	Quotes	E	S	T
Appaerance					232	187	419
	Feminine Stereotypes				179	76	255
		Body/Face	Stereotypical description for feminine body or facial features	It's a natural, but healthy face. Yes. With whiskers., High cheekbones	109	61	170
		Male gaze	Coments made about the avatar in light of the male perception	She is wearing a character-emphasized dress and high shoes, because I have the impression that she quickly got a status from the boys and that she was stamped quickly and is seen as an object.	5	0	5
		Revealing clothes	Descriptions of the avatar wearing short	So I do see a longer top	44	7	51

			or revealing clothes	with her, but a really short pants or a short skirt. She wears a mini skirt.			
		Superficial	Descriptions of the avatar mostly caring about their looks instead of anything else	That lets her stand out a little bit from the crowd. She tries to be a little bit different from the other people, I would say. But maybe also with the thought that she wants to please the men.	45	10	55
	Innocent Looks				20	39	59
		Girl next door	Avatar described as being cute or innocent	For me, she seems very innocent and not that kind of a girl that would do tattoos. So she's kind of like... I don't know, like	20	39	59

			next door? Yeah.			
Judgement		Judgements made by the participant based on their own assumptions		28	18	46
	Judgement	Judgements of the avatar based on assumptions	So she's in love with John? Maybe, probably. Yes, otherwise she wouldn't meet him that much	28	17	45
	"A bit sexist to say"	The participant states that he is going to say something they perceive sexist	Um... I chose a dress because I thought, um, well... It's a bit sexist to say, like, male gaze, but a lot of guys just started crushing on her right away, so... I think a dress towards more femininity.	1	0	1
Neutral Appearances				16	66	82

		Average/Normal	Statements about the avatar describing it as normal or average	Mmmh, it has to be a little standard girl, a very normal girl, and I think in terms of skin colour, again it's just a white girl.	9	58	67
		Neutral facial features	Statements about the face of the avatar, which do not have any outstanding features.	I wouldn't change the face a lot, its just a very plain face which I think fits the character, so not really any outstanding features	8	9	17
Comparison	Comparison	Comparison	Comparison between the avatars	Oh, that's a little bit too much. Yeah. She's a bit bolder compared to Emily	11	12	23
Personality					204	189	393
	"Girl Boss"				57	46	103
		Confidence	Statements about the confidence of the avatar during social interactions	She's self-confident. That's why I'd say she's a party animal. Because	23	20	43

			she gets along well with other people.			
	Popularity	Statements about the popularity of the avatar	What is something a popular girl will like, she wants to fit in so she listens to pop music	40	28	68
“Too much”				54	12	66
	Drama queen	Descriptions of personality traits of the avatar that are associated with overly dramatic or attention seeking behavior	So uhm tops I think based on the story she seems a little dramatic	12	2	14
	Material girl	Descriptions of the avatar being focused on gaining money or wealthy possessions	For example, that she only hangs out with people who have a bit more money and don't want to talk to others who don't give the impression.	13	2	15
	Temperamental	Descriptions of the avatar being easily upset or	Her tendency to be easily	37	9	46

		emotionally unstable	offended, causing problems. Maybe a little bit jealous. I think it's the only one that fits. Maybe childish?			
				36	70	106
Positive personality						
	Academic	Descriptions of personality traits that are beneficial within the academic environment	Yeah, I think she does well at school and therefore she goes to a very good university, therefore she has to have knowledge	25	39	64
	Open minded	Descriptions of the avatar being open minded and being open for new experiences	I think she's open-minded. And could get along with people. She has dark green eyes	1	14	15
	Social	Descriptions of the avatar possessing traits that are considered to	And also cheerful. She can be happy for her friends	10	25	35

		be good in social situations	when they achieve something. Ambitious.			
Stereotype personality				80	80	160
	"Pick me"	Descriptions of the avatar trying hard to gain the approval of others, especially males	Yeah, and also some lipstick, because yeah, I think she wants to be seen by other men, or at least other boys. So wearing lipstick would kind of maybe suggest something	12	2	14
	Girly Girl	Descriptions of the avatar behaving in ways that are seen as typically feminine interests or behaviours	Also an open shoe I think, because she wants to show off her nicely painted toe nails there too, of course	18	7	25
	Romantic	Descriptions of romantic behaviour or interest by the avatar	also romantic should be a trait of her, because	33	21	54

				yeah, I don't know, I kind of get that vibe from her in the story.			
		Shy/Insecure	Descriptions of the avatar that imply insecurities or shyness in social situations or about the character it self	She is a bit... She is a bit more reserved. I think. Okay.	13	21	34
		Traditional gender roles	Characteristics, interests or goals of the avatar, putting the character in roles that are typically assigned to the female gender	Big happy family. She definitely wants to have the big love. And a lot of kids. And take good care of them.	10	33	43
Behavioral	Stereotypes	Basic white girl	Description of avatar which fits into the stigma of a typical white girl		23	7	30
Political Views	Personality political				12	15	27
		Political: Alternative	Description of a avatar with mostly liberal opinions		10	12	22
		Political: Conservative	Description of a avatar with mostly		2	3	5

			conservative behaviours			
Reference	comparison	Reference to popculture	References made to movies or series from modern pop culture	5	0	5
Sensuality	Stereotype personality	Sensual	Descriptions of avatars who are stated to behave seductive towards especially males	29	12	41

Note: E = Emily , S = Sophie , T = total

Figure 8 and 9