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"The Relationship between Sexualization, Visual Attentional Bias and Dehumanization"

verfasst von / submitted by

Antonia Schumann, BSc

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Introduction

How does attire and posture change how someone is perceived? This work aims to investigate the impact sexualization has on the perception of that person, specifically on dehumanization tendencies and visual attentional bias, of which the latter serves as one manifestation of sexual objectification. Further, the relationship between dehumanization and attentional bias is explored.

Sexualization

Sexualization means presenting someone in a certain way that emphasizes the sexual and physical aspects of this person. This can take various forms, such as the person wearing revealing or little clothing, or simply holding a sexually provocative pose (Cogoni et al., 2021; Pacilli et al., 2017; Vaes et al., 2019). The less attired and the more provocatively posing, the higher the sexualization (Hatton & Trautner, 2011).

In some studies, sexualization of the targets presented is fairly evident, for instance when targets are shown naked (Nummenmaa, Hietanen, Santtila and Hyönä; 2012). Other studies, however, simply experimentally induced an appearance focus to increase sexualization. Participants are asked to focus on either the target's personality or appearance (Heflick et al., 2011; Heflick & Goldenberg, 2009).

The American Psychological Association Task Force on the Sexualization of Girls (2007) defines sexualization as follows: "a person's value comes only from his or her sexual appeal or behavior, to the exclusion of other characteristics". Sexualization can be observed in various settings, especially in media. Stankiewicz & Rosselli (2008) conducted a content analysis of 58 U.S. magazines and found that women were portrayed as sex objects in half of them. Similarly, Lindner (2004) stated that in 75 percent of the magazine advertisements consulted, women are shown in a stereotypical way and 40 percent of these emphasize especially the target's body. Not only has sexualization in the media been something one is confronted with every day, but also it seems to be increasing. Hatton & Trautner (2011) reported that while

the magazine *Rolling Stone* displayed 44 percent of all women in a sexualized way in the 1960s, this percentage increased up to 83 percent until the 2000s. On top of that, 74 percent of them are hypersexualized, meaning that they send multiple sex signals. Similarly, Lindner (2004) speaks of a "remarkable increase in sexualized images of women". Many advertisements for instance make use of images of scarcely dressed individuals to attract the attention of the viewer, often in a context that has little to do with the person presented.

Perceptual Changes due to Sexualization

Despite being a powerful tool in marketing, sexualizing someone seems to entail substantial changes in how the target person is perceived. To begin with, it appears that sexualized individuals are attributed less mind. Mind attribution is a broad concept that involves aspects such as the perception, emotions, thoughts, desires, intentions, reasoning and passions of a person (Cikara et al., 2011; Loughnan et al., 2010, 2015). Further, individuals who are sexualized are perceived to be less intelligent (Graff et al., 2012; Gurung & Chrouser, 2007; Loughnan et al., 2010) and competent (Bernard & Wollast, 2019; Cogoni, Carnaghi, & Silani, 2018; Graff et al., 2012; Heflick et al., 2011; Heflick & Goldenberg, 2009). Additionally, sexualization seems to alter the target person's perceived moral status and can bring along negative behavioural consequences. To begin with, Graff et al. (2012) found out that sexualized girls were perceived as less moral compared to non-sexualized girls. Loughnan et al. (2015) reported that participants showed significantly lower moral concern for sexualized targets. One example question that was used involved asking about how much moral consideration the target deserves when they heard that they had been treated unfairly. Participants in a study by Pacilli et al. (2017) considered sexualized women as lesser moral patients compared to non-sexualized women, moral patients meaning it is "morally good to help them and morally wrong to hurt them" (Pacilli et al., 2017).

Despite moral evaluations, individuals also seem to feel less empathy towards sexualized individuals. In a study by Cogoni, Carnaghi, & Silani (2018), participants showed less empathic responses to sexualized targets, measured with self-reported empathy ratings that were confirmed on a neuronal level.

Sexualization can encompass detrimental consequences, often exemplified in the context of sexual assault. Research has shown that sexualized rape victims are blamed more for being raped and perceived to suffer less than non-sexualized rape victims (Loughnan et al., 2013). The same authors further showed that they are perceived to be less affected by assault, experience speedier recovery with fewer resources and perceive less suffering. Similarly, less blame was put on the rapist when the victim was sexualized (Bernard et al., 2015).

All of the above mentioned aspects concern internal evaluations of the target, however, it also shows on a behavioural level. Pacilli et al. (2017) conducted an experiment in which participants read a fictional article about intimate partner violence and subsequently were shown a photo of either a sexualized or non-sexualized female victim. Results revealed that willingness to help was significantly lower in the sexualized condition. Similar findings were reported by Pacilli et al. (2019).

Lastly, sexualization also seems to be associated with an increase in the acceptance of sexual violence (Gervais et al., 2014). Ward (2016) investigated the link between media sexualization and sexual violence and observed that a regular exposure to sexualized content in media increases the acceptance of sexual violence. Additionally, Rudman & Mescher (2012) reported that dehumanization, a process that is commonly a consequence of sexualization (see section 'Dehumanization'), is associated with a higher willingness to rape and sexually harass a female target. Gervais & Eagan (2017) argue that sexualization and sexual objectification contribute to phenomena like sexual assault, sexual harassment and sex trafficking. Similarly, Galdi & Guizzo (2021) stated that sexualization in media is heavily associated with sexual harassment. In line with previously presented findings, sexualized individuals seem to be evaluated rather negatively (Loughnan et al., 2015).

Sexual Objectification: Theory

Whereas sexualization primarily concerns a specific presentation of an individual, sexual objectification describes the process of perceiving someone as an object in the sexual realm. One of the first pioneers to mention the concept was Immanuel Kant, who said that when a person is solely considered to satisfy one's

sexual desires, we speak of sexual objectification. According to Kant, the objectified person is an 'object of appetite' (Kant, 1963).

Another important person in this field was Sandra Bartky (1990), describing sexual objectification as the perception of sexual body parts being split from the remaining person. The body parts of attention are sufficient to represent the person as a whole.

Martha Nussbaum (1995) presents seven aspects that are key parts of objectification. Firstly, instrumentality describes treating the person as a tool with specific purposes. Denial of autonomy is characterized by the target person perceived as lacking in self-determination and autonomy. Moreover, the person is recognized as inactive (inertness). Further, fungibility describes the person as being interchangeable with any other person. Violability is the perception of the target as not having physical boundaries. Additionally, the target person is perceived as someone that can be owned by another (ownership). Lastly, the feelings and experiences of the target are not considered as relevant (denial of subjectivity). Despite the concept being more ancient, sexual objectification has really gained prominence due to the work by Fredrickson & Roberts (1997), describing it as "the experience of being treated as a body […] valued predominantly for its use to […] others".

The founders of the constructs mentioned above represent viewpoints on sexual objectification from a rather theoretical perspective. Although no concrete doubts can be cast on the plausibility of the approaches, the field of experimental psychology attempted to investigate sexual objectification from a rather cognitive perspective. In all approaches mentioned below, participants were exposed to sexualized and non-sexualized targets.

Visual Processing of Humans and Objects

There is a difference in visual processing depending on the target one looks at. When inspecting human bodies and especially faces, information is processed configurally (holistic), meaning the focus is on the whole (Maurer et al., 2002). Objects, however, are inspected in an analytic kind of way, which means that they are viewed as a set of features. This way of visual processing implies more focal attention (Ganel & Goodale, 2003) and is rather local. One phenomenon related to

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configural processing is the inversion effect, which describes the difficulty of recognizing a stimulus when presented upside down. The effect does not apply to analytic processing, so it is normally not present when looking at humans.

Inversion Effect and the Sexualized Body Inversion Hypothesis

Based on the findings about configural and analytic processing, it was assumed that presenting an inverted picture should disrupt person recognition, but not object recognition. Carrying on the line of thought about sexual objectification, Bernard et al. (2012) reasoned that if individuals, especially women, are perceived as sexual objects, presenting inverted images of them should not result in an inversion effect. To test this, participants were exposed to images of sexualized women and men, either in an upright or inverted position. Results revealed that indeed there was no inversion effect for inverted presented images of sexualized women. Thereupon, the authors formulated the *Sexualized Body Inversion Hypothesis* which states that objects and sexualized women are processed in a similar manner. In the following years, several researchers have criticized that they did not control for other confounding variables such as the asymmetry of the target (Civile & Obhi, 2016; Tarr, 2013).

Cogoni, Carnaghi, Mitrovic, et al. (2018) used an adapted version of the task by Bernard et al. (2012) and additionally controlled for asymmetry. Although this factor plays a moderating role, sexualization itself was found to be a main driver of disrupting the inversion effect. This finding was also confirmed on an electrophysiological level. Bernard, Rizzo et al. (2018) recorded participants' Electroencephalogram (EEG) while viewing sexualized and non-sexualized bodies in upright and inverted positions. They reported a missing N170, an event-related potential (ERP) usually associated with configural processing. In sum, sexualization seems to trigger analytic processing of individuals, which are usually thought to be processed configurally.

Attentional Bias

Apart from analytic processing of sexualized individuals, time spent looking at specific body parts seems to be biased towards certain body regions in case of

sexualized individuals. Several studies analysed gaze behaviour of participants exposed to sexualized and non-sexualized targets. As an example, in a study by Nummenmaa et al. (2012), participants exhibited a visual bias toward the chest and pelvic region when looking at nude (versus clothed) targets. The displayed attentional bias was confirmed in other studies (Cogoni, Carnaghi, Mitrovic, et al., 2018; Gervais et al., 2013).

To investigate gaze behaviour, eye tracking is used. This method seems to be suitable since it is a valid measure of visual attention and assesses both conscious and unconscious processes (Wenzlaff et al., 2016)

Sexualization and Sexual Objectification

In practice, the terms sexualization and sexual objectification are often used interchangeably. Several studies assume that sexualization inevitably leads to sexual objectification, yet, it remains unclear whether that is necessarily the case. There is, however, some studies claiming that sexualization might lead to sexual objectification (Bernard et al., 2012, 2020; Gervais et al., 2011). As an example, Bernard, Gervais, Holland, et al. (2018) were able to induce an objectifying gaze simply with an appearance focus. Participants in this condition exhibited longer looking times at the targets' chest, arms and stomach than in the personality-focus condition. In contrast, when focusing on appearance, the face was inspected less.

In sexual objectification theory, attentional bias is also called 'objectifying gaze' and constitutes one manifestation of sexual objectification (Fredrickson & Roberts, 1997). The focus is on a person's sexual parts at the cost of attention on the face, which is normally important for perceiving someone as a person. In practice, despite a large body of research, it remains unclear whether focusing on a person's sexual body part is enough to induce sexual objectification. Bernard et al. (2015) had participants focus on images of sexualized and non-sexualized individuals. By masking the chest and pelvic region in one condition, a visual focus on these sexually connoted body parts was hindered. The masking seemed to trigger a configural processing style in the participant instead of analytical processing compared to the no-masking condition. Specifically, sexualized female bodies were rather seen as a whole when the breast and pelvic region were masked, pinpointing to less objectification. The authors concluded that the objectification process is driven

by a visual 'sexual focus'. Similar work has been done by Gervais et al. (2012), who observed that a local processing style was used when looking at women by focusing specifically on the sexual body parts. They concluded that targets are perceived "in a manner consistent with objectification theory by reducing women's bodies to their sexual body parts" (Gervais et al., 2012).

To sum it up, research suggests that the 'objectifying gaze', described by a visual bias on sexual body parts, constitutes one manifestation of sexual objectification and will therefore be measured in this experiment as an approximation of the process.

Dehumanization: Theory

Dehumanization describes the process of perceiving someone as less human. In my work, I will focus on two influential theoretical viewpoints on the topic.

Two Senses of Humanness (Haslam)

Following up on early theorists about dehumanization, Haslam (2006) proposed that there are two distinct types of humanness: Uniquely Human (UH) characteristics and Human Nature (HN) characteristics.

To begin with, UH characteristics distinguish humans and animals. They are learned through socialization and thus vary cross-culturally. Haslam names factors such as refinement, civility, morality, maturity and higher cognition. Other examples that distinguish humans from animals like openness to experience or conscientiousness were given by Gosling (2001). In case someone is denied these characteristics, one speaks of animalistic dehumanization. In turn, this person is being perceived as "coarse, uncultured, lacking in self-control, and unintelligent", their behaviour is driven by "motives, appetites, and instincts" (Haslam, 2006). The person is perceived as animal-like.

HN characteristics describe typical features and inborn dispositions of humans. They are deeply rooted in individuals and are "core properties that people share" (Haslam, 2006). Thus, they exhibit little variation across cultures. Although no direct comparison is being made, humans can be contrasted with inanimate objects such as robots or automatons (Haslam & Loughnan, 2014). Characteristics that

describe HN include emotional responsiveness, interpersonal warmth, cognitive openness, agency and individuality and depth. When these attributes are denied, the person is perceived as inert, cold, rigid, passive, fungible and superficial. In this case, mechanistic dehumanization takes place, so the individual in question is seen as rather machine-like.

<u>Mind Perception Account</u>

A different way of looking at dehumanization is regarding the existence of a mind. When someone is denied mind capacities, one speaks of dementalization (M. N. Kozak et al., 2006). Previously, it was assumed that perceptions of mind vary along one dimension which translates into someone having less or more mind. Gray, Gray and Wegner (2007) had an extensive sample rate humans and non-humans (e.g. animals, robots, dead individuals) on 18 mental capacities. Their principal component analysis revealed two main components of the mind, agency and experience. The aspect of agency comprises self-control, morality, memory, emotion recognition, planning, communication and thought. The concept of experience involves hunger, fear, pain, pleasure, rage, desire, personality, consciousness, pride, embarrassment and joy. The higher someone scores on both dimensions, the more 'mind' is being ascribed to this person. Their work showed that there are indeed two aspects of the mind that need to be considered.

The two theoretical depictions of dehumanization can be linked. Agency is a concept that distinguishes humans and non-human animals and thus can be compared with UH characteristics. Thus, someone lacking agency might be at risk for animalistic dehumanization. In turn, experience and HN characteristics seem to be related. When an individual is denied experience, it is likely that this person is denied HN traits as well (Haslam & Loughnan, 2014). Yet, it is important to keep in mind that although there is overlap, they constitute two distinct concepts.

Dehumanization Research

Past research has demonstrated that sexualization may induce a dehumanized representation of that person. Loughnan et al. (2010) investigated how sexualization affects different aspects of depersonalization. Results showed that

sexualized targets were attributed less personhood, including decreased mental state and moral status evaluations, compared to non-sexualized targets. Similar findings were found by Loughnan et al. (2013).

Additionally, several researchers also investigated the influence of sexualization on dehumanization in line with the theoretical conceptions presented above. In a study by Heflick & Goldenberg (2009), participants rated targets with varying sexualization levels on 25 HN traits. In the appearance-focus condition that implies high sexualization, targets were rated as less human. It can be assumed that mechanistic dehumanization took place. In line with animalistic dehumanization as first proposed by Haslam et al. (2005), participants in a study had to categorize sexualized and non-sexualized individuals together with UH and animal-related words. Results showed that sexualized female targets were less associated with UH characteristics (Vaes et al., 2011).

Regarding the mind perception perspective of dehumanization (Gray et al., 2007), it was originally assumed that sexualization would lead to both increased agency and experience ratings. Gray, Knobe, Sheskin, Bloom & Barrett (2011) however, tested this hypothesis and reported that focusing on someone's body leads to decreased agency, but increased experience, contrary to what was expected before. The authors explained this with the notion that bodies and minds are often perceived as two distinct things, possibly even contradicting each other. This is also called *Mind-Body Dualism* and entails that a higher awareness of the body automatically means a lower awareness of the mind of that person. As a result, there is no complete dementalization of the person but a "redistribution of mind" (Gray et al., 2011). In sum, it appears that sexualization prompts dehumanization tendencies, as measured with various constructs.

Dehumanization & Sexual Objectification

Different views exist on how sexual objectification and dehumanization relate to each other from a conceptual perspective. Haslam (2006), for instance, indirectly described sexual objectification as being present for only one type of dehumanization, which is the umbrella term. Specifically, when HN traits are denied, the target is being represented as an object (mechanistic dehumanization). In

contrast, Loughnan et al. (2010) depict dehumanization as a consequence of the sexual objectification process.

What research generally seems to agree on is the notion that both processes are possibly at play when someone is sexualized. Vaes et al. (2011) showed that female objectified targets were perceived as less human, regardless of participant gender. Further, Loughnan et al. (2009) showed that when individuals are perceived to lack in HN traits, they are rated as more object-like. Summing it up, sexual objectification and dehumanization seem to be similar and interrelated, yet distinct concepts. In general, there is, however, only scant evidence of the relationship between attentional bias/objectifying gaze and dehumanization. Therefore, one aim of this work is to investigate whether a correlation between the sexual objectification and dehumanization measures exists.

Sex Differences

Past research has emphasized primarily women as targets of sexualization and the resulting cognitive alterations, executed mostly by men. Fredrickson & Roberts (1997), founders of the objectification theory, exclusively mention the female body as a target of sexual objectification. Similarly, Nussbaum (1995) emphasizes men as "objectifiers" and women as the "objectified". Several studies have, based on this role allocation, only used women as targets for sexualization (Cogoni, Carnaghi, & Silani, 2018; Gervais et al., 2013; Pacilli et al., 2017) and emphasized them as the primary target group. This might be due to the fact that women are more sexualized in media than men (Bernard, Gervais, & Klein, 2018). However, men seem to be affected as well.

Over time, more and more studies have shown that male objectification exists as well (M. Kozak et al., 2009; Rohlinger, 2002). Several studies have, for instance, shown that sexualized men had smaller mind attributions than non-sexualized men (Gray et al., 2011; Loughnan et al., 2010). Generally, an increasing body of research provides evidence that sexualization and its consequences concerns both sexes, as executors and targets. To give one example, Loughnan et al. (2015) conducted a study investigating the effect of sexualization in several different cultures and apart from cultural differences, they found out that objectification happens gender-independent, both on participant and target level . This was confirmed in other

investigations (Bernard et al., 2019; Loughnan et al., 2010; Loughnan & Pacilli, 2014). In sum, both men and women seem to engage in and be affected by sexual objectification and dehumanization processes. The focus of my work will not lay on gender differences, however, sex differences on participants and target level will be assessed and interpreted.

Limitations of Past Research

A great deal of research that dealt with sexualization and sexual objectification equated both terms. This is, however, not necessarily the case since the former solely describes an objective change in the representation of the target and the latter refers to an internal cognitive change of the observer. Therefore, caution must be taken when it comes to interpreting results. The experimental design of this study allows a further investigation of the topic by investigating whether a change in visual attention can be induced by a manipulation of sexualization.

Another constraint of past research is the unclarity of what the concept of dehumanization comprises, due to the presence of several theoretical approaches. Oftentimes, a questionnaire to measure one aspect of dehumanization is used (e.g. General Mind Attribution Task; Loughnan et al., 2010). This study aims to provide a more coherent dehumanization assessment by using several measures. This is done by means of the Dehumanization Scale by Haslam et al. (2005) and the Mental Attribution Scale (MAS) taken from Gray et al. (2011). The tasks are further explained in the methods section.

Lastly, many studies investigated how sexualization influences either sexual objectification or dehumanization. The relationship between both concepts, however, has not been studied thoroughly in the past. This study starts to fill the gap by investigating whether there is a correlative relationship between the two concepts.

Research Question and Hypotheses

The research question of my thesis is as follows: What is the relationship between sexualization, visual attentional bias and dehumanization?

Hypotheses

H1: Sexualized targets are perceived to be sexier than non-sexualized targets. (manipulation check)

H2: Sexualized targets are perceived to be less intelligent than non-sexualized targets.

H3: Sexualized targets are perceived to be less competent than non-sexualized targets.

H4: Participants show a higher visual attentional bias on sexualized body parts when looking at sexualized targets compared to non-sexualized targets.

H4a: Participants show higher attentional bias on the chest region for sexualized targets, attentional bias being measured by dwell time percentage, fixation percentage and fixation count.

H4b: Participants show higher attentional bias on the pelvic region for sexualized targets, attentional bias being measured by dwell time percentage, fixation percentage and fixation count.

H4c: Participants exhibit lower attentional bias on the facial region for sexualized targets, attentional bias being measured by dwell time percentage, fixation percentage and fixation count.

H5: Participants exhibit greater dehumanization tendencies for sexualized compared to non-sexualized targets, as operationalized with several instruments:

H5a: Participants perceive sexualized targets to exhibit less agency, but more experience-related character traits.

H5b: Sexualized targets are attributed less characteristics that are high in UH compared to non-sexualized targets.

H5c: Sexualized targets are attributed less characteristics that are high in HN compared to non-sexualized targets.

H6: A correlation can be observed between eye tracking data and agency and experience ratings.

Methods

Sample

The resulting overall sample comprised 104 participants between the age of 18 and 35 (53 female, 51 male). The mean age was 24.7 (SD = 4.69). All participants were heterosexual in their sexual orientation, had normal-to-corrected vision and a good understanding of German. In total, 19 participants had to be excluded for different reasons. Reasons for excluding participants were sexual orientation (seven participants), technical problems during testing (nine participants) and insufficient German proficiency (three participants). Participants were recruited via advertisements on different channels of social media (Facebook, Jodel). All participants were financially compensated for their participation.

Stimuli

Photographs of four models were used to provide the stimuli (two female, two male). Two shots of each person were taken, differing in sexualization (sexualized, non-sexualized). In the sexualized condition, men wore black tank tops and tight jeans and sexualized women wore a tight black dress with a deep neckline. In contrast, the non-sexualized versions of both sexes entailed looser attire in similar colours. The body position was identical for all targets in order to avoid confounding

influences such as asymmetry (Cogoni et al., 2018). This resulted in eight stimuli in total.

Set-Up

This master thesis is part of a larger project also encompassing other aspects of sexualization and sexual objectification. I will, however, not mention these aspects in the study procedure. The data collection took place at University of Vienna between July and October 2021. Generally, the environmental conditions were attempted to be kept constant. The lightning conditions were equal and all experimenters were briefed to give the same instructions. Smalltalk was kept to a minimum in order to avoid other influences. The preparation of the eye tracker included several steps: First, subjects positioned themselves on a head and chin rest in a way they could hold the posture for several minutes. Both pupil and corneal reflection values were adjusted based on the participant's eyes. Subsequently, calibration and validation checks were conducted until the signal was displayed to be 'GOOD' (only minimal errors allowed). This preparation was carried out at the beginning of the first task.

Procedure

Upon arrival, participants were given a short written and verbal description of the study procedure and signed the informed consent. Subsequently, their dominant eye was found out by looking through a tube and successively closing one eye. This is done because in case there are technical difficulties with the normal procedure of the eye tracker, one alternative is to only track the dominant eye.
The first task was carried out in front of the eye tracker. The actual task encompassed the presentation of the targets. Subjects were instructed to look at and pay attention to the persons presented.

The second part took place in front of a computer screen and the participant had to fill out several questionnaires. Finally, the participant received financial compensation.

Measures

<u>Eye Tracking Task</u>

      Each participant was exposed to four out of eight stimuli, differing in sex and sexualization, respectively. It is important to note that the sexualized and non-sexualized targets presented were not the same for one participant. Specifically, one condition showed woman A sexualized and woman B non-sexualized, another condition showed the opposite (woman B sexualized, woman A non-sexualized). The same applies for male targets. The participant was instructed to pay attention to the stimuli presented. Each target was shown five times in randomized order. *Figures 1 to 4* show four out of the eight stimuli, representing one combination of photos (condition) that a participant was exposed to.
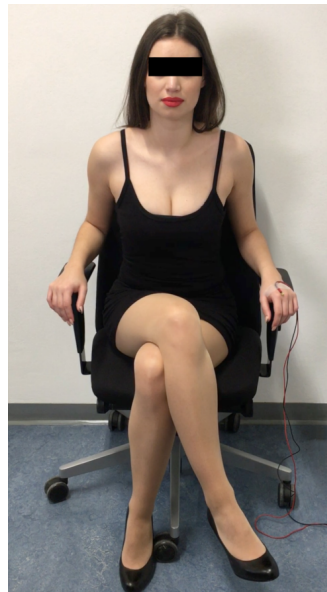

Figure 1. Non-Sexualized Woman

Figure 2. Sexualized Woman

Figure 3. Sexualized Man

Figure 4. Non-Sexualized Man

Questionnaires

Dehumanization Scale

Subjects rated each target compared to an average person based on 38 character traits (Haslam et al., 2007). A five-point Likert Scale was presented asking about the extent to which the previously presented person possesses this characteristic. The scale ranged from "much less than the average" over "neither less nor more than the average" to "much more than the average". The answer possibilities were transformed into numbers from one to five, in the direction as mentioned. This scale was employed to assess the participants' dehumanization tendencies toward the targets. The words presented were either typical of Human Nature (HN) or Uniquely Human (UH) characteristics. Further, the items scored high or low on desirability.

Mental Attribution Scale

In this task, subjects rated the extent to which the targets possessed several character traits. A six-point Likert Scale was used, ranging from "not at all" (= 1) to "very much" (= 6). One part of the questionnaire included agency-related character traits, specifically morality of the target, ability to plan and ability to self-control.

Further traits concern experience-related aspects of the target, including ability to experience pleasure, ability to feel pain, ability to experience hunger and ability to feel desire. These characteristics were chosen based on findings from Gray et al. (2007). In addition, subjects evaluated the targets concerning their competence, intelligence and sexiness. Importantly, sexiness serves as a manipulation check. Specifically, it was expected that if the manipulation worked, sexualized targets would be perceived as sexier than non-sexualized targets.

Statistical Analysis

Descriptive and inferential processes were performed using IBM SPSS® Statistics, version 27. The significance level, as defined before, was $\alpha = 0.05$. As a result, in case of the inferential statistical tests, any significance value (p) equal to or below 0.05 is considered significant.

Inferential statistical tests included 16 three-way mixed Analysis of Variances (ANOVAs), separately for each dependent variable. Two out of three independent variables encompassed within-subjects (WS) factors, specifically sexualization and gender of the target, with each two levels. A third independent variable was a between-subject (BS) factor and represented participant gender, as well with two levels.

The general procedure was identical for all analyses, the only difference being the dependent variables. In order to answer the last hypothesis, bivariate correlations between selected variables were calculated.

Computation of Variables

Manipulation Check: Sexiness

For the perceived sexiness of the target, the mean of two items referring to the sexiness of the target was calculated. This mean was calculated for each level of the within-subjects variables, resulting in four means in total.

Intelligence and Competence Ratings

The concepts of target intelligence and target competence were asked in one item of the MAS, respectively. Therefore, no mean had to be computed and the scores for each level of the within-subjects factors, was used.

Agency/Experience Ratings

Agency as a dependent variable comprised the aspects of ability of planning, morality and ability to self-control. The mean of these items was calculated, separately for each level of sexualization and target gender.

The procedure for the concept of experience was identical, the only difference being the items of ability to feel pleasure, ability desire, ability to feel hunger and ability to feel pain.

Human Nature/Human Uniqueness Ratings

To measure the effect of sexualization on HN traits, a mean of the relevant items was calculated. Nine items in total attempted to measure the concept, including: activeness, curiosity, friendliness, helpfulness, fun-loving, impatience, impulsiveness, jealousy and shyness.

Items measuring the dimensions of UH characteristics included the items broadmindedness, conscientiousness, humbleness, politeness, thoroughness, disorganization, hard-heartedness, ignorance, rudeness, and stinginess.
Again, four means per concept were used as dependent variables, for UH and HN traits.

Visual Attentional Bias

In order to investigate whether sexualization induces a visual attentional bias, several types of measurements and regions of interest (ROI) were included. To begin with, dwell time percentage was considered, describing how much time in percent was spent looking at the area of interest. Further, fixation percentage specifies the percentage of fixations falling in the area of interest. Lastly, the variable fixation count measures the overall number of fixations falling into the area of interest. ROI's

included the face, the pelvic and chest region of the target (*Figure 5*). Important to note is that the chest area also included the target's arms, as can also been seen in figure 5. For every target, the mean variable for all five trials for each measure, ROI and level of within-subjects factor was computed.
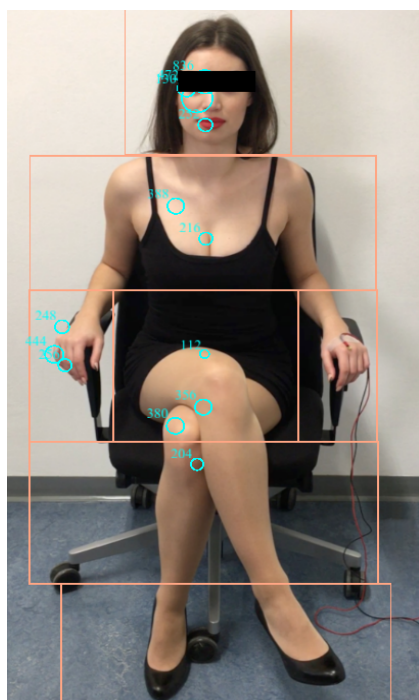
Figure 5. Marked ROI's

Variables for Correlations

One of the hypotheses of this work is to investigate whether significant correlations between dehumanization and eye tracking data for the different ROI's exist. For the concept of dehumanization, agency and experience ratings were used. The correlations were computed separately for levels of sexualization and target gender, resulting in four correlation tables in total, including five variables (agency, experience, the face as a ROI, the chest as a ROI and the pelvic region as a ROI).

Assumption Check

In order to correctly conduct the inferential analyses, assumptions for a three-way mixed ANOVA were tested. Firstly, the assumption of independence of

observations is satisfied, because each cell represents an individual subject. Another assumption concerns the existence of outliers. Although some outliers were found using a box-plot visualization of the data, comparing means to trimmed means showed no substantial differences, implying that the results are not affected.

The assumption of normality of the data was technically. In some cases, the Shapiro-Wilk Test showed significant p-values and histograms showed a slightly skewed distribution. After thorough consideration, I decided to nevertheless carry on with the analysis for several reasons: Firstly, visual inspection of all quantile-quantile plots showed a linear relationship, speaking for normality.

Secondly, the displayed p-values are presumably due to the majority of the dependent variables being measured on a Likert Scale. Although the use of this type of measure has been questioned in the past for actually being ordinal and not of interval nature, evidence confirms it can indeed be used for parametric design such as ANOVA (Boone Jr & Boone, 2012; Norman, 2010).

Moreover, I base the decision on past research investigating the robustness of ANOVA. Blanca et al.(2017) argued that for data that is not normally distributed, parametric and non-parametric tests perform equally well. A recent paper by Knief and Forstmeier (2021) holds a similar view. Additionally, they argue that although numerous non-parametric alternatives exist, these carry risks as well.

Furthermore, the assumption of homogeneity of variance was mostly satisfied. In some cases, Levene's Test of Equality of Error Variances showed significant p-values. However, this does not pose a problem, since ANOVA is robust against variance heterogeneity in case of a balanced design (Blanca et al., 2018; Wilcox et al., 1986).

Results

Intelligence

Results showed a significant main effect of sexualization, $F(1, 102) = 37.858$, $p = .000$, $\eta^2 = .271$. Specifically, participants rated individuals in the sexualized

condition as less intelligent (*M* = 4.105, *SE* = .079) than those in the non-sexualized condition (*M* = 4.669, *SE* = .080).

Competence

The three-way mixed ANOVA yielded a significant main effect of sexualization *F* (1, 102) = 38.904, *p* = .000, η^2 = .276. Sexualized targets were perceived to be less competent (*M* = 4.148, *SE* = .084) compared to non-sexualized targets (*M* = 4.666, *SE* = .079)

Sexiness

The analysis of differences between sexiness served as a manipulation check. It yielded a significant main effect of sexualization, *F* (1, 102) = 184.331, *p* = .000, η^2 = .644. As expected, individuals in the sexualized condition were perceived to be much sexier (*M* = 4.202, *SE* = .087) than those in the non-sexualized condition(*M* = 2.680, *SE* = .94).

Moreover, a significant main effect of target gender was found, F (1, 102) = 120.703, *p* = .000, η^2 = .542. Specifically, subjects perceived female targets as higher in sexiness (*M* = 3.933, *SE* = .080) than male targets (*M* = 2.948, *SE* = .088).

Further, the interaction between sexualization and target gender appeared to be significant, with *F* (1, 102) = 23.024, *p* = .000, η^2 = .184. Although both men and women are rated as sexier in the sexualized compared to the non-sexualized condition, the difference is more pronounced for female targets. To see whether the effect of sexualization is significant for both female and male targets respectively, two follow-up ANOVA tests were conducted, for each target gender. These confirmed that mean differences are significant for both groups (female targets: *F* (1, 103) = 181.300, *p* = .000, η^2 = .638; male targets: *F* (1, 103) = 53.808, *p* = .000, η^2 = .343).

Lastly, the analysis yielded a significant interaction effect between target gender and participant gender, resulting in F (1, 102) = 14.271, *p* = .000, η^2 = .123. Although the general trend of higher sexiness of female targets is confirmed, this depends on the gender of the participant. Generally, subjects have the tendency to perceive the opposite-sex target as higher in sexiness than the same-sex target. Follow-up ANOVA's were conducted, testing simple effects of target gender for both

levels of participant gender, respectively (male participants: F (1, 50) = 97.293, p = .000, η^2 = .661, female participants: F (1, 52) = 29.283, p = .000, η^2 = .360) . These confirmed the opposite-gender effect and further that female targets are generally perceived to be sexier, irrespective of participant gender and sexualization.

Agency

The analysis of agency rating differences yielded a significant main effect of sexualization, with F (1, 102) = 33.346, p = .000, η^2 = .246. Sexualized targets are ascribed less agency (M = 4.247, SE = .085) than non-sexualized targets (M = 4.726, SE = .066).

In addition, testing the interaction between sexualization and target gender yielded significant results, being F (1, 102) = 5.571, p = .020, η^2 = .052. Sexualized targets are perceived to have less agency than non-sexualized, however, the difference is more pronounced for female targets. Follow-up analyses tested the effect of sexualization separately for each target gender. Results indicated significant mean differences for both female and male targets (female targets: F (1, 103) = 42.154, p = .000, η^2 = .290; male targets: F (1, 103) = 9.389, p = .003, η^2 = .084)

Experience

The analysis of differences between experience ratings yielded a significant main effect of sexualization, with F (1, 102) = 68.610, p = .000, η^2 = .402. Sexualized targets (M = 4.805, SE = .067) were rated to have more experience than non-sexualized targets (M = 4.332, SE = .089).

	M (SE)		F (1, 102)	p	η^2
	Sexualized	Non-Sexualized			
Intelligence	4.105 (.079)	4.669 (.080)	37.858	.000*	.271
Competence	4.148 (.084)	4.666 (.079)	38.904	.000*	.276
Experience	4.805 (.067)	4.332 (.089)	68.610	.000*	.402

Table 1. Main Effects of Sexualization

*p < .05

Human Nature

It was tested whether participants perceive the stimuli differently in terms of HN traits, depending on the level of sexualization. The analysis yielded a significant main effect of sexualization, with $F(1, 102) = 124.394$, $p = .000$, $\eta^2 = .549$. Sexualized targets are perceived to have more traits related to Human Nature ($M = 3.420$, $SE = .028$) than non-sexualized targets ($M = 2.993$, $SE = .033$).

Furthermore, the interaction between target gender and participant gender was significant, $F(1, 102) = 5.669$, $p = .019$, $\eta^2 = .053$. This effect describes that the effect of target gender depends on participant gender. Specifically, participants tend to perceive the opposite-sex target as higher in HN traits than the same-sex target. No follow-up analyses for simple effects were conducted since this did not affect sexualization and was therefore not of major importance for this thesis.

Human Uniqueness

An analysis of differences in UH traits was conducted. A main effect of sexualization was found to be significant, $F(1, 102) = 44.060$, $p = .000$, $\eta^2 = .302$, showing that sexualized targets were perceived to have less traits related to UH ($M = 2.838$, $SE = .024$) than non-sexualized targets ($M = 3.018$, $SE = .023$).

Further, a three-way interaction between sexualization, target gender and participant gender was found to be significant, $F(1, 102) = 5.808$, $p = .018$, $\eta^2 = .054$. This effect describes that the effect of sexualization depends on target gender and participant gender. Precisely, whereas in the sexualized condition, subjects tend to perceive the opposite-sex target as less human, in the non-sexualized condition, they perceive the same-sex target as less human. For this interaction, follow-up analyses were conducted to see the individual effects of sexualization on the levels of participant and target gender. Results showed that female participants exhibit a dehumanization effect, no matter the target gender (female targets: $F(1, 52) = 12.712$, $p = .001$, $\eta^2 = .196$; male targets: $F(1, 52) = 22.396$, $p = .000$, $\eta^2 = .301$). Male participants, however, only show a significant dehumanization effect for female targets ($F(1, 50) = 19.877$, $p = .000$, $\eta^2 = .284$), but not for male targets.

Region of Interest: Chest

To test whether differences in looking behaviour can be observed in the chest region depending on the condition, three variables are considered: dwell time percentage, fixation percentage and fixation count.

To begin with, a significant main effect of sexualization was found for all three measures. Dwell time percentage showed significance with $F(1, 102) = 56.543$, $p = .000$, $\eta^2 = .357$, the statistics for fixation percentage are $F(1, 102) = 61.897$, $p = .000$, $\eta^2 = .378$ and the main effect was also observed for the measure of fixation count, with $F(1, 102) = 67.851$, $p = .000$, $\eta^2 = .399$. Generally, means were higher in the sexualized condition than in the non-sexualized condition (dwell time percentage: $M = .185$, $SE = .006$ vs. $M = .121$, $SE = .006$; fixation percentage: $M = .190$, $SE = .006$ vs $M = .153$, $SE = .005$; fixation count: $M = 3.286$, $SE = .104$ vs $M = 2.594$, $SE = .102$).

Furthermore, all three analyses resulted in a significant main effect of target gender (dwell time percentage: $F(1, 102) = 24.425$, $p = .000$, $\eta^2 = .193$; fixation percentage: $F(1, 102) = 22.164$, $p = .000$, $\eta^2 = .179$, fixation count: $F(1, 102) = 10.065$, $p = .002$, $\eta^2 = .090$). The effect can be summarized by more attention being paid to this ROI in female compared to male targets, meaning means and standard deviations are higher for female targets (dwell time percentage: $M = .150$, $SE = .006$ vs $M = .128$, $SE = .005$; fixation percentage: $M = .180$, $SE = .005$ vs $M = .162$, $SE = .005$; fixation count: $M = 3.044$, $SE = .102$ vs $M = 2.836$, SE = .097).

Another main effect that resulted to be significant in two out of three analyses was the effect of participant gender. The analyses showed significance for dwell time percentage ($F(1, 102) = 5.815$, $p = .018$, $\eta^2 = .054$) and fixation percentage ($F(1, 102) = 6.331$, $p = .013$, $\eta^2 = .058$). Male participants tend to focus more on the chest region of a target (dwell time percentage: $M = .152$, $SE = .008$; fixation percentage: $M = .184$, $SE = .007$) than female participants (dwell time percentage: $M = .126$, $SE = .007$; fixation percentage: $M = .159$, $SE = .007$).

In addition to the main effects, several interaction terms were considered. The interaction between sexualization and target gender showed significance for dwell time percentage ($F(1, 102) = 53.855$, $p = .000$, $\eta^2 = .346$), fixation percentage ($F(1, 102) = 63.889$, $p = .000$, $\eta^2 = .385$) as well as fixation count ($F(1, 102) = 65.916$, $p =$

.000, η^2 = .393). Although subjects tended to dwell and fixate longer and more often on the chest region of sexualized targets, the mean difference to non-sexualized targets is higher for male compared to female targets. Testing the effect of sexualization separately for the two levels of target gender, it can be observed that solely male targets display significant differences depending on the sexualization condition, as opposed to female targets (see Figure 6). Table 2 further displays the statistical details.

		Target Gender	
		Female	Male
Dwell Time Percentage	F	0.028	130.392
	p	.868	.000*
	η^2	.000	.559
Fixation Percentage	F	.005	128.309
	p	.994	.000*
	η^2	.000	.555
Fixation Count	F	0.118	130.259
	p	.732	.000*
	η^2	.001	.558

Table 2. Follow-up: Interaction Effect of Sexualization and Target Gender
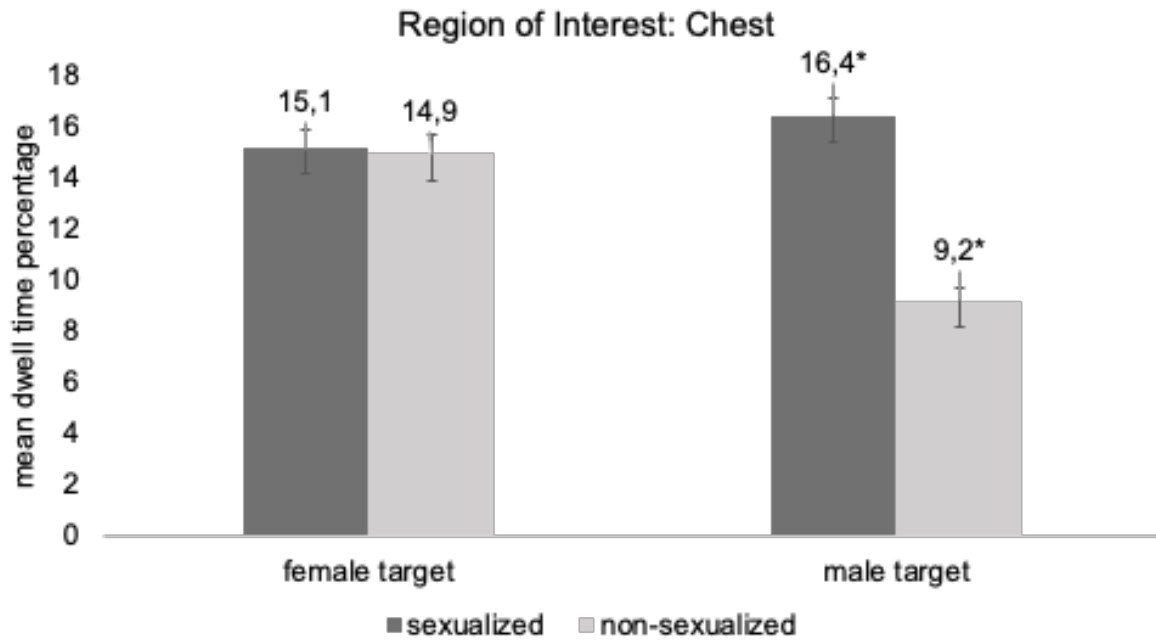
ROI: chest; *p* < .05

Figure 6. Simple Main Effects of Sexualization (per Target Gender)

* = *p* < .05

Another interaction that showed significance was between sexualization and participant gender. This relationship reached significance for all three measures (dwell time percentage: F (1, 102) = 5.061, *p* = .027, η^2 = .047; fixation percentage: F (1, 102) = 6.199, *p* = .014, η^2 = .057, fixation count: F (1, 102) = 5.763, *p* = .018, η^2 = .053) and describes that the effect of sexualization depends on participant gender. Simple main effects were tested as a follow-up test and these revealed that both female and male participants pay more attention to the chest region when sexualized, however, this effect is stronger for male participants. Table 3 shows the exact statistics and *Figure 7* displays a visualization of mean dwell time percentage differences per group.

		Participant Gender	
		Female	Male
Dwell Time Percentage	*F*	20.206	35.704
	p	.000*	.000*
	η²	.280	.417
Fixation Percentage	*F*	18.717	43.106
	p	.000*	.000*
	η²	.265	.463
Fixation Count	*F*	21.119	46.855
	p	.000*	.000*
	η²	.289	.484

Table 3. Follow-up: Interaction Effect of Sexualization and Participant Gender
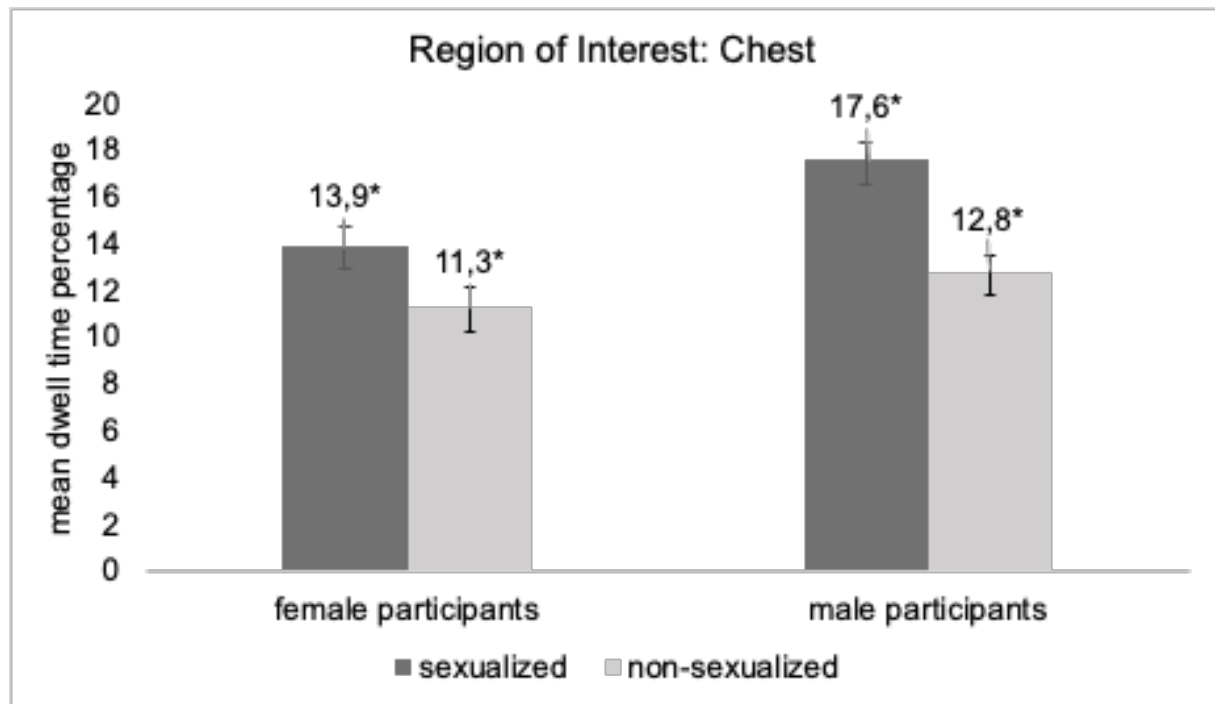
ROI: chest; * = *p* < .05

Figure 7. Simple Main Effects of Sexualization (per Participant Gender)

* = *p* < .05

Region of Interest: Face

In order to analyse whether differences in looking patterns in the facial region can be observed, the same three variables as mentioned above were considered. To begin with, a main effect of sexualization was found for the variable dwell time percentage, with F (1, 102) = 4.940, p = .028, η^2 = .046. Participants showed higher dwell time percentages for non-sexualized targets' faces (M = .518, SE = .013) than for sexualized targets' faces (M = .501, SE = .012).

Further, a main effect of participant gender yielded significance for all measures: dwell time percentage (F (1, 102) = 5.868, p = .017, η^2 = .054), fixation percentage (F (1, 102) = 8.845, p = .004, η^2 = .080) and fixation count (F (1, 102) = 10.083, p = .002, η^2 = .090). This effect describes the higher overall mean for female participants (fixation percentage: M = .424, SE = .014; fixation count: M = 5.997, SE = .239) compared to male participants (fixation percentage: M = .364, SE = .014; fixation count: M = 7.060, SE = .234) in terms of time spent looking at the facial region.

The interaction between sexualization and target gender reached significance for all three measures (dwell time percentage: F (1, 102) = 37.275, p = .000, η^2 = .268; fixation percentage: F (1, 102) = 32.370, p = .000, η^2 = .241; fixation count: F (1, 102) = 17.802, p = .000, η^2 = .149). The effect of sexualization is different, depending on target gender. Specifically, whereas more attention is paid to female targets' faces when sexualized, the opposite can be observed for male targets' faces (i.e. lower scores for sexualized condition). Follow-up analyses were conducted, testing whether the differences observed in the sexualized vs non-sexualized condition are significantly different for female and male targets, respectively. These showed significant mean differences for both levels of target gender for all three measures (see Table 4). A visualization for mean differences in fixation percentage can be seen in *Figure 8*.

		Target Gender	
		Female	Male
Dwell Time Percentage	F	3.886	33.934
	p	.051	.000*
	η^2	.036	.248
Fixation Percentage	F	7.983	24.003
	p	.006*	.000*
	η^2	.072	.189
Fixation Count	F	8.777	7.037
	p	.004*	.009*
	η^2	.079	.064

Table 4. Follow-up: Interaction Effect of Sexualization and Target Gender
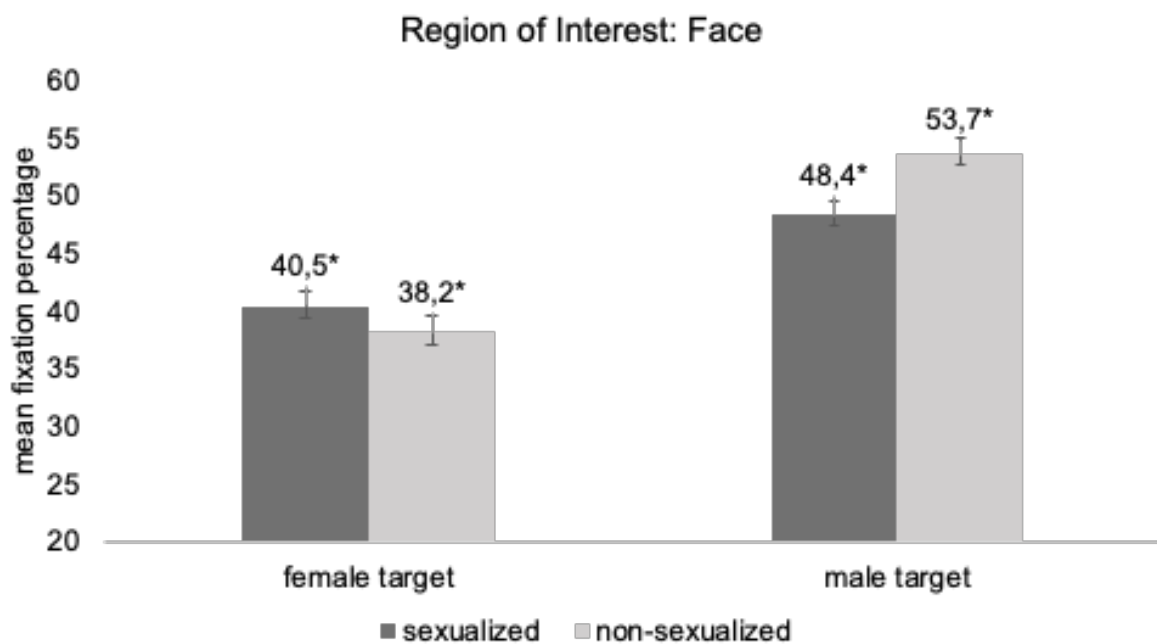
ROI: face; * = $p < .05$

Figure 8. Simple Main Effects of Sexualization (per Target Gender)

* = $p < .05$

In addition, the interaction between sexualization and participant gender reached significance using fixation count as a measure (F (1, 102) = 4.898, p = .029, η^2 = .046). Apart from the fact that female participants exhibit fundamentally higher fixation counts than male participants, the direction of the effect of sexualization depends on participant gender as well. Whereas female participants display higher fixation counts for sexualized faces, male participants do so for non-sexualized faces. Follow-up analyses testing the effect for different participant gender levels, however, revealed that no significant mean differences were found for both participant gender levels (male participants: F (1, 50) = 2.225, p = .142, η^2 = .043; female participants: F (1, 50) = 2.694, p = .107, η^2 = .049)

Region of Interest: Pelvic

An analysis testing for different visual patterns towards the pelvic region was conducted. For this, again dwell time percentage, fixation percentage and fixation count were used as measures. One main effect of sexualization was found, significant for all measures (dwell time percentage: F (1, 102) = 13.409, p = .000, η^2 = .116; fixation percentage: F (1, 102) = 22.471, p = .000, η^2 = .181; fixation count: F (1, 102) = 16.204, p = .000, η^2 = .137). All measures showed lower means for sexualized (dwell time percentage: mean =.080, SE = .004; fixation percentage: mean = .096, SE = .004, fixation count: mean = 1.693, SE = .077) compared to non-sexualized targets (dwell time percentage: mean = .092, SE = .004; fixation percentage: mean = .111, SE = .004, fixation count: mean = 1.933, SE = .067).

Correlation Dehumanization and Visual Attentional Bias

In order to examine the relationship between dehumanization and visual attentional bias, correlations between both concepts were computed. The correlations were, however, split into the two levels of the two WS factors, resulting in four correlation tables (see *Tables 5, 6, 7* and *8* for an overview).

To begin with, a positive correlation between mean agency and experience scores was found for all four conditions (sexualized female target: .556, non-

sexualized female target: .354, sexualized male target: .417, non-sexualized male target: .519). Other correlations that were observed in all four conditions include negative correlations between face and chest scores (sexualized female target: -.325, non-sexualized female target: -.309, sexualized male target: -.363, non-sexualized male target: -.372), as well as face and pelvic regions (sexualized female target: -.266, non-sexualized female target: -.394, sexualized male target: -.255, non-sexualized male target: -.362).

Another significant correlation is between the chest and pelvic scores. This was, however, only significant in female sexualized targets ($r = .208$) and male non-sexualized targets ($r = .417$).

Furthermore, in case of female non-sexualized targets, a positive correlation was found between agency and face scores ($r = .234$), as well as a negative correlation between agency and pelvic scores ($r = -.207$).

Correlations: Sexualized Women

Variable	1	2	3	4	5
1. Agency	--				
2. Experience	.556*	--			
3. Chest	-.110	-.009	--		
4. Face	-.136	-.015	-.325*	--	
5. Pelvic	-.158	-.042	.208*	-.266*	--

Table 5. Correlation Table Sexualized Women

* = $p < .05$

Correlations: Non-Sexualized Women

Variable	1	2	3	4	5
1. Agency	--				
2. Experience	.354*	--			
3. Chest	-.068	.027	--		
4. Face	.234*	-.091	-.309*	--	
5. Pelvic	-.207*	-.068	.155	-.394*	--

Table 6. Correlation Table Non-Sexualized Women

* = *p* < .05

Correlations: Sexualized Men

Variable	1	2	3	4	5
1. Agency	--				
2. Experience	.417*	--			
3. Chest	.096	.078	--		
4. Face	-.091	-.014	-.363*	--	
5. Pelvic	-.137	.061	.125	-.255*	--

Table 7. Correlation Table Sexualized Men

* = *p* < .05

Correlations: Non-Sexualized Men

Variable	1	2	3	4	5
1. Agency	--				
2. Experience	.519*	--			
3. Chest	.079	.142	--		
4. Face	-.045	-.074	-.372*	--	
5. Pelvic	-.088	.005	.417*	-.362*	--

Table 8. Correlation Table Non-Sexualized Men

* = *p* < .05

Discussion

Aims of Study and Summary of Findings

This thesis aimed to investigate the influence of sexualization on how a person is perceived, as operationalized with attire and posture. Specifically, it was explored whether sexualization affects intelligence and competence ratings, dehumanization tendencies and a visual bias. In the study, participants were first presented photographs of sexualized and non-sexualized women and men. While they were looking at the photos, visual gaze behaviour was recorded using the eye tracker. In a second part of the study, participants rated the individuals concerning different character traits based on the photographs.

In past research, the terms sexualization and sexual objectification were often treated interchangeably, although they are not. Therefore, one aim of this work was to clearly define the concepts and investigate whether sexualization of a person can induce a visual bias towards sexualized body parts, the latter being one approximation of sexual objectification. Furthermore, tendencies to dehumanize an individual as a result of sexualization were inspected. Lastly, the relationship between

the participant's visual bias and their dehumanization tendencies was explored. This was done in the form of correlations.

Results showed that sexualized individuals are rated as less intelligent and competent. In addition, they are more likely to be dehumanized. Eye tracking analyses showed that in the chest region, an 'objectifying gaze' for sexualized targets can be observed. Results regarding visual gaze behaviour towards the face are rather mixed. Finally, no clear relationship was found between visual bias tendencies and dehumanization.

Discussion of hypotheses

The first hypothesis (**H1**) expected sexualized targets to be perceived as higher in sexiness than non-sexualized targets. Although this was confirmed, important to mention here are gender differences both on target and participant level. Firstly, female targets are perceived to be sexier than male targets in general. Additionally, the effect of sexualization is stronger for female targets, meaning that the difference in means between the sexualized and non-sexualized conditions is stronger than for male targets. This effect might be explained by the extreme sexualization of especially women in many settings, as described in the introduction.

Moreover, the interaction between participant and target gender shows a sexiness evaluation based on participants' sexual orientation. Whereas, men rated sexualized female targets as especially high in sexiness, a similar pattern can be observed for female participants and male targets in the sexualized condition. This is also in line with the classical sexual objectification theory proposed by Fredrickson & Roberts (1997).

Despite the gender interactions, however, sexiness ratings in the sexualized condition were higher than for non-sexualized targets in both sexes, making it feasible to accept the hypothesis. Summing it up, results confirm that the manipulation of 'sexualizing' the targets by means of tight clothing, makeup (only applicable to female targets) and posture worked.

The second hypothesis (**H2**) stated that intelligence ratings would be lower for sexualized individuals. This hypothesis was supported by the results and stands in line with past research (e.g. Loughnan et al., 2010)**.**

Hypothesis **H3** expected sexualized targets to be perceived as less competent than non-sexualized and this was confirmed by the results and past literature (Cogoni et al., 2018). The findings conform to previous expectations, also since competence is a concept that is related to intelligence.

Generally, it was hypothesized that participants exhibit a visual attentional bias on sexualized body parts for sexualized individuals compared to non-sexualized (H4). This hypothesis was attempted to be answered with the use of eye tracking and three specific hypotheses were further formulated.

Furthermore, it was postulated that participants show a higher attentional bias on the chest region when the target is sexualized (**H4a**). This was partly supported by the findings. Important to note are again gender differences on participant and target level. At the first glance it appeared that participants pay more attention to the chest region when sexualized. Reviewing the findings in more detail, however, made it evident that this visual bias is influenced by target gender. Specifically, it is primarily the chest region of male targets that participants pay more attention to when sexualized, not the chest of female targets.

Looking at the effect of sexualization on male targets, the hypothesis was confirmed. The man in the sexualized condition wore, as can be seen in *Figure 3*, a tank top that leaves a substantial amount of skin visible. A muscular chest and arm region of a man has a fairly sexual association. At the same time, it is acceptable to inspect this region without feeling uncomfortable. The latter argument also serves as a potential explanation of why no 'sexual' visual bias was found for female targets. Although the chest region of a woman and especially a cleavage are reasonably sexualized areas of a human body, demand characteristics possibly have disrupted natural gaze behaviour of the participants. A further elaboration on the limitations of the study can be found under 'Limitations of the Study'. Another interesting conclusion that can be drawn is that although an attentional bias towards the sexualized chest can be observed in both female and male participants, the latter spend more time looking at the chest in general. This confirms past research (Nummenmaa et al., 2012). In addition, the effect of sexualization is higher for them as well. This could possibly hint to a gender-specific preference for distinct body

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parts; this notion should, however, be treated with caution, since there is no previous evidence of this and is simply speculation.

Hypothesis **H4b** postulated that more gaze behaviour is directed towards the pelvic region in the sexualized condition. Results did not support the hypothesis, on the contrary, participants spent less time inspecting the pelvic region of sexualized targets than non-sexualized targets. Although not expected, there are several potential explanations for the effect: Similarly to the example of the female cleavage given earlier, participants were possibly influenced by the setting of an experiment and the knowledge that their eye movements would be tracked and therefore 'avoided' this area. Another conceivable explanation regards the posture of the target and visibility of the ROI. Since all targets are presented in a sitting position, the pelvic area does not attract as much attention as, for instance, the chest region. This applies especially to the female targets, since they also cross their legs in the photograph. Other studies investigating gaze behaviour towards sexualized individuals (see Nummenmaa et al. (2012)) showed their targets in a standing position. To sum it up, although the results did not support the hypothesis, several alternative explanations are available.

Another hypothesis concerning gaze behaviour towards the face (**H4c**) postulated that participants concentrate less on the face when the target is sexualized because other 'sexualized' body parts are more prevalent or interesting to look at. Results showed that this could only be partly confirmed. Specifically, for male targets, all three measures indicated lower means for sexualized compared to non-sexualized targets, so participants spent less time looking at the face when the target was sexualized. This is in line with the hypothesis and past research (e.g. Nummenmaa et al. (2012)). For female targets, an inverse pattern was observed, precisely, more attention was paid to the sexualized compared to the non-sexualized face. Although this seems contradictory to what was expected, this pattern can be explained by findings of Bernard, Geelhand & Servais (2019)**.** The authors proposed that a human face is processed more analytically, similarly to objects, when covered with make-up. This 'face sexualization', as they call it, might potentially trigger sexual objectification as well. In general, the majority of research has focused on the chest and pelvic as body parts vulnerable to sexualization. The face as a target of sexual

objectification, however, should be investigated further in future research. Another gender effect that was found relating to the face region concerns participant gender. Specifically, female participants spent more time looking at the face region than did male participants. To my knowledge, no such effect was found in earlier studies, but should be explored further.

Visual attentional bias served as a manifestation of sexual objectification, as described before. Although not all hypotheses were confirmed and findings were mixed, a bias towards sexual body parts for sexualized targets was observed, approaching the postulation that sexualization leads to sexual objectification by activating the 'objectifying gaze'.

Hypothesis **H5** proposed that sexualization leads participants to dehumanize sexualized targets. The process of dehumanization is operationally defined by several measures and thus several hypotheses were formulated.

Hypothesis **H5a** proposed sexualized targets to score lower on agency and higher on experience traits than non-sexualized targets, a form of redistribution of the mind first proposed by Gray et al. (2011). The authors proposed a model encompassing the concept of dehumanization as a whole, unlike Haslam et al. (2005). Agency traits that encompass ability to plan, ability to self-control and morality were hypothesized to be lower for sexualized individuals and this could be confirmed by the results. Both male and female targets were perceived to have less agency when sexualized. A difference in target gender is only evident when the target is presented in a non-sexualized way. Specifically, female targets are rated to have more agency than male targets in this condition. This effect was not expected, however, might be explained by the existence of certain stereotypes about women in general. This is for instance the belief that women are more moral than men (Belk & Snell, 1986)**.** Additionally, as expected, experience traits turned out to be higher for sexualized compared to non-sexualized targets. Put differently, participants perceive targets wearing revealing clothing to feel more in general, whether it be desire, pleasure, hunger or pain. To sum it up, the pattern of decreased agency and increased experience implies that sexualization leads to the perception of a person more in terms of bodily sensations and less of a rational mind. Since abilities such as

planning, self-control and morality are part of higher human cognitive abilities, it can be concluded that dehumanization tendencies were evident in case of sexualization.

Hypothesis **H5b** regarding dehumanization refers to the perception of UH traits that distinguish humans from animals, as proposed by Haslam (e.g. Haslam & Bain; 2007). Specifically, the hypothesis stated that targets in the sexualized condition are rated to possess traits related to Human Uniqueness to a lesser extent. Results did mostly confirm this hypothesis, with lower UH scores for sexualized compared to non-sexualized targets. Important to mention here are the gender differences, both on participant and target level. For this, the effects of sexualization and target gender were tested separately for each participant gender. It was shown that female participants exhibit dehumanization tendencies for both male and female targets. In addition, whereas male participants exhibit dehumanization for sexualized targets, they do not so for male targets. These findings are mostly in line with previous expectations, except for men not showing dehumanization tendencies towards other males. This finding is surprising, however, since it has failed to reach significance only by little (F(1, 50) = 3.154, p =.082, η^2 = .059), the insignificance might be due to statistical limitations. In total, it can be concluded that animalistic dehumanization took place in most cases for sexualized women and men.

The last hypothesis (**H5c**) regarding the effect of sexualization on dehumanization concerns mechanistic dehumanization, a form of the concept that distinguishes humans from machines. This type is directly linked to HN traits, as described earlier. Similarly as for the other hypotheses, it was expected that sexualized individuals have lower scores on traits related to HN compared to non-sexualized individuals. Results did not support this hypothesis. Rather, sexualized individuals showed significantly higher scores related to HN traits than non-sexualized individuals. To sum it up, the effect of mechanistic dehumanization could not be supported.

Taken together, it can be concluded that sexualized stimuli were dehumanized, as confirmed with agency and experience ratings and the measure of animalistic dehumanization.

Since dehumanization and sexual objectification pose two distinct, yet fairly related concepts, another aim of this work was to explore the relationship between these concepts (**H6)**. The operationalisation of dehumanization was with the concepts of agency and experience, whereas sexual objectification was operationalized with the visual gaze behaviour of the eye tracker.

Only few correlative patterns were observed that indicated a relationship between dehumanization and attentional bias measures. Specifically, a positive correlation was found between agency and attention paid to the face region. This means that the more human someone is perceived, the longer the face region of that target was visually inspected. Additionally, a negative correlation between agency ratings and time spent looking at the pelvic region was observed, meaning that lower humanness ratings correlated with more attention paid to the pelvic region and vice versa. It is, however, important to note that these correlations were only observed for non-sexualized female targets, emphasizing the small explanatory power these results have.

Additionally, several correlations within dehumanization and gaze behaviour were visible. Although they are not directly related to the above mentioned hypothesis (**H6**), the observed patterns were in line with previous expectations and thus are interesting to mention. The negative correlation between the face and chest region indicates that a higher focus on the chest region goes along with less attention on the face. A similar pattern was observed between the pelvic and face region. Albeit only correlational, the patterns observed are an important addition to the analyses mentioned previously.

A positive correlation between the chest and pelvic region was observed for sexualized female and non-sexualized male targets. Since both are fairly sexualized body parts, this correlative relationship is not surprising.

There was, however, one correlation whose direction was surprising at first. Specifically, moderate positive correlations between agency and experience ratings were found in all four conditions. This indicates that when agency ratings increase, experience ratings do so as well. Although this relationship was not hypothesized in case of sexualization, this pattern might be reflected by the tendency of humans to perceive others as possessing both mind and experience. More specifically, although dehumanization tendencies were evident as further elaborated in the results and

discussion part, the correlative analysis was possibly not strong enough to detect the dehumanization effects.

In sum, the observed correlations only partly confirmed previous expectations and were not capable of demonstrating that dehumanization and sexual objectification are related concepts. The relationship between both concepts should be further investigated in future research.

Practical implications

In practice, the topic is of high relevance in many settings. As already mentioned, humans constantly see and appraise others, and someone's looks apparently change how one perceives and interacts with that person. Also, this study again highlights the relevance for both men and women. One example field where the effects of sexualization become evident is in a work setting. Imagining one person presents themselves or comes across as sexier than the average. It can be assumed that this person will be treated differently, because of a perception of lower intelligence for example. This sexualized 'presentation' can be as subtle as black mascara on the eyes or lipstick. Another field of relevance was already mentioned at the beginning and refers to the assignment of guilt in case of criminal delicts, such as sexual assaults. Only minor characteristics that refer to the looks a person involved might be interpreted as sexualized by someone with the power to decide. This, in turn, can have detrimental consequences for either 'sexualized' person, since it can influence the final verdict.

Generally, more awareness should be given to both the omnipresence of sexualization and its harmful consequences. This could be done in forms of psychological workshops at work and in school.

Limitations of the Study

Although it was attempted to carry out the study and subsequent analysis with outmost precision, several limitations were evident that should be tackled in future research. Firstly, the generalizability of the findings to a broad population is limited. We only invited participants that were at the age between 18 and 35 and heterosexual in their sexual orientation. Another limitation concerns the artificial setting of the experiment. Sexualization of women and men and subsequent

cognitive processes are something that one is confronted with on a daily basis and that often happens subconsciously. Testing this effect in a laboratory setting, especially with the awareness of an eye tracking device, it can be assumed that participants' behaviour is altered. Specifically, some participants reported to have attempted to avoid 'sexual' body parts such as the cleavage of the sexualized women to conform to socially desired behaviour.

Regarding the statistical analysis, it should be noted that due to the large amount of data and the scope of a master thesis, only inferential analyses concerning participant's visual gaze behaviour in the designated ROI's were conducted, comparing data in sexualized and non-sexualized conditions. Other interesting analyses include differences in gaze behaviour between the ROI's, so to investigate the amount of time that was directed to, for instance, the face compared to the chest.

Future research

This field of research is fairly hard to investigate for several reasons: To begin with, for many concepts, clear definitions and differentiations to other concepts are lacking, making it difficult to measure without confounding influences. Therefore, future research should focus on clear definitions of concepts such as sexual objectification and dehumanization.

Furthermore, most of the tasks in studies regarding the topic are rather explicit and transparent in what they want to measure. Socially desired behaviour, however, heavily affects participants' responses in studies and are therefore not representative of the reality in many cases. Research should therefore tackle this limitation by creating more implicit measures. Eye tracking represents a fairly promising tool since it can register subtle behaviour patterns, however, as mentioned before, knowing about the existence of it potentially alters behaviour. One solution to use eye tracking outside the laboratory setting are glasses, which have already been used in research (Mele & Federici, 2012). That doesn't tackle the problem of knowing about it, it can, however, lighten the effect because the setting is flexible.

Something else future researchers should focus on is the mutual relationship between sexual objectification and dehumanization. In this case, using agency and experience ratings by Haslam might not be suitable to explore this relationship.

Regarding the effect of sexualization on visual attentional bias, past research and this work have already yielded some interesting findings, however, there is much potential to explore this further. One aspect is the face as a region of interest and how the perception of it changes based on the existence of makeup, for instance. Previous research has assumed that looking at the face becomes less when someone is presented in a sexual way, this might, however, not be the full story.

Lastly, sex differences should be explored further. Results confirm previous expectations that both women and men are prone to the consequences of sexualization. Yet, there seem to be gender-specific differences on both ends that go beyond the traditional conception of men objectifying women.

Conclusion

This study has shown that sexualization, which simply entails sexy clothing, makeup and posture, has considerable effects on how this person is perceived, mostly in a negative way. Starting off, sexualized women and men are perceived to be less intelligent and competent. Also, they are perceived to be less human and more animal-like. Furthermore, sexualization changes how individuals are looked at. Visual biases towards the chest and face regions were observed. A visual bias towards the pelvic could not be found, contrary to what was expected.

Looking at the accumulation of data, sexualization seems to affect both women and men. Yet, some remarkable gender differences became evident as well. To begin with, women are perceived to be sexier in general, which can be explained by the high prevalence of female sexualization in media. Interestingly, a visual bias towards the sexualized chest region was only found for male targets and more pronounced for male participants. Finally, it was observed that faces of the female targets were potentially objectified when sexualized, due to heavy makeup.

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Abstract (English)

Does a woman perform worse in her job when wearing a sexy dress? Sexualization of individuals seems to alter someone else's perception of that person. This study aims to investigate the effect of sexualization on dehumanization and visual attentional bias, the latter serving as an approximation of measuring sexual objectification. Subjects (N = 104) in the within-subject design were exposed to photographs of sexualized and non-sexualized individuals of both sexes, of which the former wore sexy clothing and held a provocative posture. During the presentation of the photographs, eye tracking was used to explore visual gaze behaviour. Finally, participants rated the targets based on several character traits. It was hypothesized that sexualization leads to dehumanization and induces a visual bias on sexualized body parts such as the chest and pelvic region, further that visual bias and dehumanization tendencies are positively correlated. Results showed that sexualized individuals were perceived as less intelligent, less competent and less human. Further, sexualization led to visual attentional differences in the chest and face region. Several gender differences were found, on participant and target level. Although sexual objectification and dehumanization are two fairly related concepts, no remarkable correlations between the eye tracking data and dehumanization measures were found. Implications, relevance and ideas for future research are discussed.

Abstract (German)

Ist eine Frau schlechter in ihrem Beruf, wenn sie ein aufreizendes Kleid trägt? Die Sexualisierung von Personen scheint die Wahrnehmung dieser Person durch andere Personen zu verändern. In dieser Studie soll die Auswirkung der Sexualisierung auf die Entmenschlichung und visuelle Aufmerksamkeitsmuster untersucht werden, wobei letztere als Annäherung an die Messung der sexuellen Objektivierung dient. Die Probanden (N = 104) wurden im Messwiederholungsdesign Fotos von sexualisierten und personalisierten Frauen und Männern ausgesetzt, von denen erstere sexy Kleidung trugen und eine aufreizende Haltung einnahmen. Während der Präsentation der Fotos wurde mittels Eye-Tracking das visuelle Blickverhalten untersucht. Schließlich bewerteten die Teilnehmer die Zielpersonen auf der Grundlage verschiedener Charaktereigenschaften. Es wurde die Hypothese aufgestellt, dass Sexualisierung zu einer Entmenschlichung führt und visuelle Tendenzen gegenüber sexualisierten Körperteilen wie Brust- und Beckenbereich auftreten, sowie dass diese visuellen Tendenzen und Entmenschlichungswerte positiv miteinander korreliert sind. Die Ergebnisse zeigten, dass sexualisierte Personen als weniger intelligent, weniger kompetent und weniger menschlich wahrgenommen wurden. Außerdem führte die Sexualisierung zu visuellen Aufmerksamkeitsunterschieden in der Brust- und Gesichtsregion. Es wurden mehrere geschlechtsspezifische Unterschiede festgestellt, sowohl auf der Ebene der Teilnehmer als auch der Zielpersonen. Obwohl sexuelle Objektifizierung und Entmenschlichung zwei verwandte Konzepte sind, wurden keine bemerkenswerten Korrelationen zwischen den Eye-Tracking-Daten und den Entmenschlichungsmaßen gefunden. Implikationen, Relevanz und Ideen für zukünftige Forschung werden diskutiert.

List of Abbreviations

HN   Human Nature

UH   Uniquely Human

ROI   Region of Interest

MAS   Mental Attribution Scale

ANOVA   Analysis of Variance

BS   Between-Subjects

WS   Within-Subjects

p   Significance Value

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