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Adopting the Objectifying Gaze: Exposure to Sexually Objectifying Music Videos and Subsequent Gazing Behavior

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ABSTRACT

We investigated the effects of exposure to sexually objectifying music videos on viewers' subsequent gazing behavior. We exposed participants (N = 129; 68 women, 61 men) to music videos either high in sexual objectification or low in sexual objectification. Next, we measured participants' eye movements as they viewed photographs of 36 women models with various body shapes (i.e., ideal size model, plus size model) and degree of dress (i.e., fully dressed, scantily dressed, partially clad). Results indicated that sexually objectifying music videos influenced participants' objectifying gaze upon photographs of women with an ideal size, but not plus size, body shape. Interestingly, that effect neither differed among men and women nor depended upon the models' degree of dress. Altogether, once primed with sexually objectifying imagery, participants looked at women's sexual body parts more than they looked at women's faces.

Objectification theory (Fredrickson & Roberts, 1997) posits that sexually objectifying depictions of women are ubiquitous in today's media environment. Results of content analyses have indicated that such depictions are particularly prevalent in music videos (e.g., Aubrey & Frisby, 2011; Vandenbosch, Vervloessem, & Eggermont, 2013). By focusing on the body or sexual body parts, objectifying music videos depict women as mere sexual instruments to serve the pleasure of the viewer (Fredrickson & Roberts, 1997). Consequently, by emphasizing the body or sexual body parts, the videos indirectly impose an objectifying gaze upon viewers.

Exposure to sexually objectifying media can affect how individuals perceive not only themselves, but also women (cf. Ward, 2016). Thus far, most studies on the effects of objectifying media have addressed potentially negative perceptions, beliefs, or attitudes as outcome variables. However, to the best of our knowledge, no prior studies have investigated the effects of objectifying media on gazing behavior. Given that gaze's potential negative consequences for interpersonal interactions (e.g., Calogero, 2004; Gervais,

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Vescio, & Allen, 2011; Guizzo & Cadinu, 2017), it is crucial to investigate whether exposure to sexually objectifying media content elicits an objectifying gaze. In response, we examine whether individuals adopt the objectifying gaze presented in music videos by imposing an objectifying gaze pattern at pictures of women.

Sexual objectification and the objectifying gaze

Objectification theory posits that women in Western cultures are sexually objectified, as they are treated or portrayed as objects (Fredrickson & Roberts, 1997). Sexual objectification occurs whenever women are reduced to their (sexual) body parts or perceived as objects of sexual desire, and thus stripped of their personality (Fredrickson & Roberts, 1997; Nussbaum, 1995). A key component of objectification theory is the *objectifying gaze*, or *sexual gaze*, which refers to heterosexual men's visual inspection of women's bodies or body parts (Fredrickson & Roberts, 1997). In the past, researchers specified the objectifying gaze as greater attention to the body or sexual body parts and less attention to the face (Aubrey & Frisby, 2011; Gervais, Holland, & Dodd, 2013). Although objectification does not affect all women equally, Fredrickson and Roberts (1997) have posited that almost no woman can avoid the objectifying gaze due to its subtle nature and ubiquity. The gaze can occur either directly in interpersonal encounters or indirectly via exposure to sexually objectifying media content that imposes the gaze upon viewers.

Drawing on objectification theory, exposure to objectifying images might stimulate viewers to adopt the objectifying gaze while looking at other individuals (Fredrickson & Roberts, 1997). That is, when viewers follow the camera's movements in a music video, if the video objectifies women, then the viewer's gaze becomes an objectifying one as well. That objectifying gaze presented through the camera's lens might activate the same gaze pattern when viewers look at individuals in the world outside the music videos. Indeed, studies have suggested that both men and women are liable to apply the objectifying gaze to pictures of women (Gervais et al., 2013), which by extension suggests that exposure to objectifying videos can prompt a viewer's objectifying gaze when he or she looks at pictures of women.

Although researchers have remarkably enhanced understandings of how sexually objectified media content alters how people perceive women (Ward, 2016), none have tested whether the camera's gaze in objectifying music videos can elicit the viewer's objectifying gaze toward women outside the videos. However, such a possibility is highly relevant, because women face interpersonal objectifying experiences on a daily basis. For instance, young Australian women have reported not only being targets of objectification on an average of 3.7 times per week, but also, on most of those occasions (55%), receiving objectifying gazes (Holland, Koval, Stratemeyer, Thomson, & Haslam, 2017).

Fredrickson and Roberts (1997) have theorized the sexual gaze as a specific kind of experience of sexual objectification—by other names, being leered at or checked-out—that could prompt several negative psychological outcomes, including self-objectification or body surveillance (Fredrickson & Roberts, 1997). Moreover, numerous empirical studies have supported that assumption. For instance, experiences of interpersonal sexualization, including sexual gazes, positively correlated with body shame (Miles–McLean et al., 2015); other findings (Calogero, 2004) have suggested that the sole anticipation of men's gaze prompted body shame and social physique anxiety among women. The results of an experimental study showed that women who received objectifying gazes from men interviewing them performed poorly on a subsequent math test (Gervais et al., 2011). In response, we conceived an experimental eye-tracking study to analyze the effects of objectifying music videos on the objectifying gaze among men and women.

Priming the objectifying gaze

Drawing upon objectification theory, we hypothesized that the objectifying gaze might be adopted via sexually objectifying media content (Fredrickson & Roberts, 1997). As Lindner, Tantleff–Dunn, and Jentsch (2012) put it, "Just as exposure to media images or objectifying stares heightens women's awareness of their own bodies, it also might lead to a focus on others' bodies" (p. 222). Our theoretical explanation for that process is media priming (Roskos–Ewoldsen, Roskos–Ewoldsen, & Carpentier, 2009). Media priming theory states that exposure to media content can temporarily activate particular concepts in line with the content (e.g., objectification of women). Activated concepts are more accessible and are more likely to be used in subsequent situations. Translated to the objectifying gaze, we theorize that exposure to sexually objectifying music videos might prompt an objectifying gaze pattern used when viewing pictures of women. That is, sexually objectifying music videos, which focus heavily on women's bodies, might trigger concepts regarding the appearance or bodily features of women. When individuals see women later, those concepts are more accessible in the minds of viewers, who are thus more likely to apply the concepts. For that reason, it seems plausible that activated concepts prompt the processing of incoming information, which, in terms of priming, means that viewers are more likely to process visual information (i.e., body characteristics) congruent with the objectifying video (Janiszewski & Wyer, 2014; Kristjánsson & Campana, 2010) and thus apply an objectifying gaze to pictures of women.

Presumably, that process is unconscious (Bargh, 2006); individuals are unlikely to be aware that objectifying media can affect their gaze patterns. Consequently, to investigate the process, self-report measures are clearly less suitable than observational methods such as eye tracking. Eye tracking involves

observing single fixations of the eye lasting 200–400 ms, as well as eye movements in between those fixations, or *saccades*. Because the duration of eye fixations indicate the depth of processing (e.g., Rayner, 1998), eye tracking can afford an unbiased, straightforward measure of visual attention allocation in general and of the objectifying gaze in particular. In line with previous research (Dixson, Grimshaw, Linklater, & Dixson, 2011; Gervais et al., 2013; Nummenmaa, Hietanen, Santtila, & Hyönä, 2012), we included dwell time and first fixation time as indicators of the objectifying gaze.

Researchers have showed that sexual and sexually objectifying media can prime viewers' perceptions of unknown individuals (Dillman Carpentier, Northup, & Parrot, 2014; Hansen & Krygowski, 1994). For example, Dillman Carpentier et al. (2014) found that sexual media can prime perceived sexual characteristics attributed to an unknown individual on social media. However, only one group of researchers has applied eye-tracking measurements as an extension of objectification theory and manipulated viewing situations. In their experiment, Gervais et al. (2013) gave participants the task to focus either on the appearance or the personality of 10 different women in pictures as the researchers tracked their gazing behavior. The researchers digitally altered the pictures to give the women a low, average, or high ideal body shape, informed by current mediated ideals of feminine attractiveness. Not very surprisingly, the results showed that induced appearance focus prompted an objectifying gaze among women; when women participants focused on the appearance of women in the pictures, they looked more at their chests and waists than their faces. Furthermore, the objectifying gaze targeted all women, albeit mostly women with an ideal body shape (Gervais et al., 2013). In effect, the findings suggest that researchers can observe and measure the objectifying gaze with eye tracking. Nevertheless, because Gervais et al. (2013) explicitly instructed participants to focus on traits of appearance—that is, to apply the objectifying gaze—the findings do not inform whether objectifying media can elicit a subsequent objectifying gaze among women and men.

Thus, given the prevailing objectification of women in music videos, and based on priming theory and Gervais et al.'s (2013) study, we hypothesized that objectifying music videos might serve as powerful stimuli to prime objectifying gazing behavior, or more formally,

H1: Exposure to sexually objectifying music videos prompts an objectifying gaze. Thus, after exposure to objectifying videos, participants will demonstrate longer dwell time and longer first fixation time on sexual body parts than individuals not exposed to such videos.

Knowledge about the objectifying gaze toward women stems primarily from psychological research, most notably on person perception and sexual behavior (e.g., Dixson et al., 2011; Heflick, Goldenberg, Cooper, & Puvia,

2011; Lykins, Meana, & Strauss, 2008). Addressing those topics, researchers have stressed the importance of three different characteristics: the gender of the subject and both the body shape and degree of dress of the gaze object. In turn, those characteristics might moderate the effects of exposure to objectifying media on the objectifying gaze. To fully understand the predictors possibly at play when subjects apply an objectifying gaze, we first addressed the main effects and, later, the interaction effects.

Participants' gender

Although objectification theory originally conceptualized the objectifying gaze as a behavior among heterosexual men, researchers have shown that both men and women apply the objectifying gaze to women (Bernard, Gervais, Allen, Campomizzi, & Klein, 2012; Gervais et al., 2013; Heflick et al., 2011; Nummenmaa et al., 2012; Strelan & Hargraeves, 2005; Vaes, Paladino, & Puvia, 2011). To explain objectifying gazing behavior among women, researchers suggested that both the gaze and objectification in general toward women might originate from different motivations. Whereas men might look due to sexual interest, women might look for the purposes of body comparison (Hall, Hogue, & Guo, 2011, 2014; Puvia & Vaes, 2013; Strelan & Hargraeves, 2005; Vaes et al., 2011).

However, empirical findings regarding that difference remain inconclusive. On the one hand, Hall et al. (2011, 2014) showed in two eye-tracking studies that men and women participants did not differ in relation to their gaze patterns when viewing pictures of women, but both focused on the upper body and waist–hip region. Nummenmaa et al. (2012) confirmed those findings by suggesting that men and women looked at the sexual body parts of women (e.g., chest and pelvic region) with equal frequency. Similarly, Hewig, Trippe, Hecht, Straube, and Miltner (2008) found that the overall interaction of the participant's gender, the object's gender, and body region was not significant. On the other hand, objectification theory (Fredrickson & Roberts, 1997) suggests that men primarily exercise the sexualization of women. Moreover, Strelan and Hargraeves (2005) found that men objectify women more often than women objectify other women. In light of those findings, conclusions about whether men or women demonstrate greater objectifying gazing behavior when looking at pictures of women are unclear. Hence, we formulated the following research question:

RQ1: Do men or women generally exert a greater objectifying gaze toward pictures of women?

Translated to our experimental design, we asked whether the effects of objectifying music videos on the objectifying gaze depended on the viewer's

gender. Gervais et al. (2013) have provided preliminary insights to that question —namely, that men objectify women with their gazes in the personality-focus and in the appearance-focus condition. By contrast, women objectified other women with their gazes in the appearance-focus condition only. Nevertheless, to our knowledge, no single study has systematically tested the moderating role of gender on the objectifying gaze induced by music videos. Due to such scarce empirical evidence, we posed a general research question:

RQ2: How does the participant's gender moderate the effect of objectifying music videos on the objectifying gaze?

Women's body shape

Objectification theory also suggests that objectification does not affect all women equally, because "particular combinations of class, ethnicity, age, and sexuality, as well as personal histories and physical attributes are likely to produce some heterogeneity of experience both in degree and kind" (Fredrickson & Roberts, 1997, p. 196). Whereas feminine beauty relates strongly to sexual objectification (Calogero, Herbozo, & Thompson, 2009; Fredrickson & Roberts, 1997), we supposed that women with bodies that do not conform to current media-depicted ideals of feminine attractiveness might receive fewer objectifying gazes. In reply to a call for additional research on that topic (Gervais et al., 2013), we examined whether a thin body shape provoked a greater objectifying gaze than a plus size body shape. On that note, the inclusion of women with plus size body shapes is highly relevant, because overweight and obesity among women have recently increased in many industrialized countries. Whereas in the early 1960s, 41.9% of women in the United States were overweight or obese, today most women (77.3%) are overweight or obese (Fryar, Carroll, & Ogden, 2016). In Austria, where we conducted our study, also a large proportion of women (38.9%) exhibit overweight or obesity (Statistik Austria, 2015). Accordingly, the average body size is larger now than it was 50 years ago, which bears consideration.

We also wanted to know whether the objectifying gaze depends on the body shape of the objects of the gaze. The results from the study by Gervais et al. (2013), showed that women with an ideal body shape received longer gazes toward their chest than did women with an average or low ideal body shape. Consequently, subjects viewed the faces of ideally shaped women for less time than those of women with an average or low ideal shape. Likewise, Holland and Haslam (2013) showed that overweight women elicited less objectifying attention, measured with a dot-probe task, than thin ones; however, empirical evidence from only one eye-tracking study is simply too limited to pose a hypothesis. Accordingly, we formulated the following research question:

RQ3: How does women's body shape influence the objectifying gaze on pictures of women?

The question is a rather open and thus explorative one as to whether the effects of objectifying music videos on the objectifying gaze depend on the body shape of the object of the gaze. For a plus size body shape, viewers might tend to look at the body less than the face than they would for a thin body shape, as the applicability of the viewing prime might explain. Sexually objectifying music videos usually present highly idealized women, whose ideal size body shape might thus appear foremost in viewers' minds after priming. Consequently, subjects are more likely to apply the objectifying gaze to prime-congruent targets (i.e., to ideal size more than to plus size women). Empirical evidence from research on visual priming indicates that what individuals have seen in the past influences their visual perception, which allows them to identify prime-congruent information more easily. According to Kristjánsson and Campana (2010), "detection or discrimination of that target or features of that target (such as its shape, color, or location) becomes easier if we are familiar with it or if we have seen it or acted upon it before" (p. 5). For example, research in health communication has shown that priming participants with a health-related banner resulted in longer dwell times on healthy food products than on unhealthy ones, thereby indicating visual attention for prime-congruent information (van der Laan, Papies, Hooge, & Smeets, 2017).

The findings of Gervais et al. (2013) point in a similar direction; participants instructed to focus on women's appearance gazed for more time on the chest and for less time on the face of women with high ideal body shapes than they did for women with average or low ideal body shapes. By contrast, participants in the personality-focus condition looked at women's faces for as long as they looked at their waists, regardless of body shape. At the same time, they looked more at the chests of high ideal body shapes than they did at those of average or low ideal ones. However, given the scarcity of empirical evidence, which is not directly comparable to potential findings in our research, we refrained from formulating a hypothesis, but instead posed an additional research question:

RQ3: How does body shape moderate the effect of objectifying music videos on the objectifying gaze?

Degree of dress

Sexual objectification is marked by a lack of agency of the person being objectified (Fredrickson & Roberts, 1997; Nussbaum, 1995). As experimental studies have demonstrated, increasing body display of men and women led to

a decrease of perceived agency (e.g., Gray, Knobe, Sheskin, Bloom, & Barrett, 2011) and to an increase of attention toward physical features (e.g., Nezlek, Krohn, Wilson, & Maruskin, 2015). By the same token, researchers have identified skin exposure, especially of sexual body parts such as cleavage, the stomach, and the pelvis, as an indicator of sexual objectification (e.g., Aubrey & Frisby, 2011; Hall, West, & McIntyre, 2012). In the past, researchers distinguished three levels of degree of dress in media content: full, scantily, and partially dressed (e.g., Reichert, Childers, & Reid, 2012). Accordingly, we defined fully dressed as everyday dress, which covers the shoulders, thighs, and knees, and scantily dressed to mean clothing revealing knees, upper thighs, shoulders, or cleavage. Lastly, we defined partially dressed to mean wearing underwear or swimwear.

Findings from research on sexual behavior have shown that men and women, when viewing erotic stimuli, look at bodies more than at faces (Lykins et al., 2008). In general, researchers have also identified nudity as an important attention-attracting factor. In their eye-tracking study, Nummenmaa et al. (2012) exposed participants to 120 images depicting women or men either fully dressed or nude. Their data analysis revealed that nude bodies received more fixations and longer dwell times than clothed ones (Nummenmaa et al., 2012). In line with that result, Holland and Haslam (2013) found that women wearing lingerie were more objectified than women dressed in plain clothing. Based on such evidence, we hypothesized that the objectifying gaze is more pronounced with rising levels of nudity:

H2: The objectifying gaze depends on the degree of dress; the gaze will be more prevalent in response to pictures of partially dressed women than scantily dressed ones (H2a) and will be weakest in response to pictures of fully dressed women (H2b).

We also hypothesized that degree of dress of depicted women moderates the effect of exposure to sexually objectifying music videos. Upon viewing scantily dressed women in sexually objectifying music videos, subjects might demonstrate a greater activation of the mentioned concepts for less dressed women via the priming process. Therefore, in response to less dressed objects of a gaze later on, stronger objectifying gazes should emerge—again, because of the applicability of the prime—because less dressed objects of gazes align with objectified women in the video better than do more dressed objects. More formally, we hypothesize that:

H3: The effect of objectifying media on the objectifying gaze is more pronounced in response to images of partially dressed women, followed by response to scantily and fully dressed ones.

Method

We conducted an experimental laboratory study that combined survey data with eye-tracking measurements. We manipulated exposure to sexually objectifying media as a between-participants factor, used participant gender as an additional factor, and treated body shape (i.e., ideal size and plus size) and degree of dress (i.e., fully, scantily, and partially dressed) as within-participant experimental factors. We recruited 131 participants via social networking sites, e-mail, and fliers displayed at the university of Vienna in Austria. The sample was a convenience, nonstudent sample, and participants did not receive any incentives for partaking in the study. We excluded one participant who lacked eye-tracking data due to a technical failure, as well as another who showed extremely poor deviation results following final calibration. The final sample thus consisted of 129 participants (68 women, 61 men) aged 18–65 years, whose mean age was 27.47 years (SD = 9.06) and 47% of whom had a university degree. By self-reported sexual orientation, 91.5% of the sample (n = 118) identified as heterosexual, 5.4% (n = 7) as homosexual, and 3.1% (n = 4) as bisexual. The randomization of age, $t(127) = -.303$, $p = .763$; body mass index, $t(127) = .973$, $p = .332$; and level of education (i.e., university degree or no university degree; $\chi^2 = .15$, $df = 1$, $p = .697$) was successful.

Procedure

After participants provided their informed consent, they completed individual laboratory sessions. We randomly assigned each participant to the experimental (n = 59) or control condition (n = 70). One of the two experimenters—one man and one woman—seated each participant in front of a computer, where he or she watched three music videos in random order while wearing headphones. Subsequently, each participant completed a questionnaire addressing demographic information. After that, the experimenter placed each participant in front of an eye tracker, where he or she viewed 18 photographs of women in random order. The exposure time for each photograph was 4,000 ms (see for this Gervais et al., 2013; Hall et al., 2014; Nummenmaa et al., 2012). After every photograph, we presented a centered fixation cross for 1,500 ms. For the entire experiment, a divider placed between the participant and the experimenter insured privacy. After finishing the study, the experimenter debriefed each participant prior to dismissal.

Media priming stimuli

Following previous experimental studies in the context of objectification theory (e.g., Aubrey & Gerding, 2015; Karsay & Matthes, 2016; Mischner, Van Schie, Wigboldus, Van Baaren, & Engels, 2013), we exposed

participants in the experimental condition to three sexually objectifying music videos of women pop singers and, in the control condition, to three music videos by the same artists that depicted substantially less or no sexually objectifying content. To consistently identify visual sexual objectification, we followed Aubrey and Frisby's (2011) definition: (a) high degree of body exposure, (b) multiple close-up shots of sexual body parts, and (c) dance moves in sexually suggestive manners in the explicit presence of a male audience. We browsed current music videos of women pop singers and selected three videos (Beyoncé's "Partition," Iggy Azalea's "Work," and Rihanna's "Pour It Up") that best fit the criteria of visual sexual objectification. For the control condition, we chose three videos of the same artists (Beyoncé's "XO," Iggy Azalea's "Bounce," and Rihanna's "Diamonds"). We conducted a pilot test of all six videos and reported the results in a previous study (Karsay & Matthes, 2016).

Eye-tracking stimuli

Stimuli for the eye-tracking measurement encompassed 18 photographs of women models retrieved from two online fashion stores (see APPENDIX), all of whom stood in an upright posture in front of a light-colored background. We answered the call for further research in regard to body shape (Gervais et al., 2013) by differentiating ideal size and plus size models. We use the term *ideal* to describe the body norm conveyed by the fashion and advertising industries. Although all plus size models were clearly overweight, none were massively obese. Furthermore, we varied the degree of dress by showing photographs of fully, scantily, and partially dressed models. In the fully dressed condition, models wore clothes covering their shoulders and legs; scantily dressed women showed their cleavage and thighs, whereas partially dressed women wore black underwear or a black bikini. We saved stimuli at a resolution of 972 × 1,137 pixels. Images had onscreen dimensions of approximately 40 cm in height and 34 cm in width and appeared before participants on a 17-inch monitor.

We conducted a pretest with 37 other participants (13 women, 24 men) aged 19–36 years (M = 28.62, SD = 9.82) whom we recruited via e-mail and social networking sites. Pretest participants rated six preselected stimuli images on a 7-point scale (1 = *do not agree*, 7 = *totally agree*) according to the degree to which the models matched the current ideal of beauty, were attractive, and displayed nudity. Results of a series of paired t-tests indicated that the ideal size models matched the current ideal of beauty (M = 5.99, SD = .86) better than the plus size ones (M = 2.28, SD = .74), $t(36) = 18.50$, $p < .001$, and were more attractive according to pretest participants' ratings (M = 5.10, SD = .82) than the plus size models (M = 4.17, SD = 1.20), $t(36) = 4.19$, $p < .001$. The manipulation of the degree of dress also showed

satisfactory results, $F(2, 213) = 346.31$, $p = .001$, $\eta^2 = .765$; post hoc analysis revealed that fully dressed models displayed less nudity ($M = 1.58$, $SD = 1.21$) than scantily dressed ($M = 3.63$, $SD = 1.46$) and partially dressed ones ($M = 6.58$, $SD = 0.60$), the latter two of which clearly differed.

Measures

We measured participants' gaze with an eye-tracking system (SMI iView X™ RED with a sampling rate of 120 Hz. Although viewing was binocular, only the right eye movements were monitored for all participants (regarding this standard procedure, see Henderson, Weeks, & Hollingworth, 1999). An experimenter conducted a 5-point calibration test at the beginning of the experiment and a 5-point validation test at the end of each session.

To operationalize the objectifying gaze, we defined two areas of interest (AOI): the head and sexual body parts (Gervais et al., 2013). For indicators of the objectifying gaze, we measured dwell time (i.e., total time spent looking at each area of interest) and the first fixation time for each area as indicators for the objectifying gaze (regarding this choice, see Dixson et al., 2011; Gervais et al., 2013; Nummenmaa et al., 2012). For the AOI of the head, we defined an oval form of the head showing the face, ears, and neck, whereas for the AOI of sexual body parts, we drew two rectangles over the chest and hips, respectively. A slight variation of the coverage of the AOIs across models emerged due to their different body shapes. For ideal size models, the mean coverage was 2.36% ($SD = .14$) for the head, 3.51% ($SD = .21$) for the chest, and 4.33% ($SD = .32$) for the hips; for plus size models, the mean coverage was 2.86% ($SD = .21$) for the head, 4.83% ($SD = .44$) for the chest, and 5.73% ($SD = .66$) for the hips. A series of unpaired t-tests revealed that the defined AOI differed between the two body shapes: head, $t(16) = -5.86$, $p = .001$; chest, $t(16) = -8.08$, $p = .001$; hips, $t(16) = -5.73$, $p = .001$.

We calculated the mean dwell time and mean first fixation time for all AOIs for each photograph. Afterward, we computed a difference score by subtracting dwell time means for the head from dwell time means for the sexual body parts (i.e., total dwell time of both chest and hips). The same procedure was applied to first fixation time means. Difference scores reflected relative visual attention according to the direction of the gaze on the body or sexual body parts and its magnitude (e.g., for application of difference scores, see Greenwald, Nosek, & Banaji, 2003). Positive values indicated an objectifying gazing behavior that referred to longer times looking at the sexual body parts than at the head, whereas negative values indicated a preference for looking at the head instead of the sexual body parts. Values ranged from −3,134.95 to 3,181.79 ms ($M = -506.64$, $SD = 1040.44$) for dwell time and from 285.99 to 2,175.23 ms ($M = 77.21$, $SD = 242.11$) for first fixation time.

Results

We submitted difference scores to a 2 (body shape: ideal size or plus size) × 3 (degree of dress: fully, scantily, or partially dressed) × 2 (participant gender: man or woman) × 2 (experimental condition: sexually objectifying music videos or non-sexually objectifying music videos) mixed model design. We entered both experimental condition and participant gender as between-participants factors and both body shape and degree of dress as within-participant factors. To rule out experimenter effects, we included the examiner as a covariate. Cell sizes for between-participants factors ranged from 26 to 35 for the experimental condition (n^{men} = 26, n^{women} = 33) and control condition (n^{men} = 35, n^{women} = 35). Maulchy's test of sphericity showed a violation in degree of dress and thus, we applied Greenhouse–Geisser corrections. A summary of all main and interactions effects can be seen in Table 1.

We conducted a post hoc power analysis using G*Power 3 (Faul, Erdfelder, Lang, & Buchner, 2007). For the 2 × 2 ANCOVA with experimental condition and participants' gender as the between-participants factor and the experimenter as covariate, analysis indicated that the statistical power at an alpha level of $p < .05$ with a sample size of 129 was .36 for detecting small effect sizes ($f = 0.10$) and .80 for detecting moderate effect sizes ($f = 0.25$). After we corrected for nonsphericity, statistical power for the within-factors of body shape and degree of dress and the interaction of body shape × degree of dress was >.97 for small and moderate effects, meaning that our analysis had sufficient power for detecting moderate

Table 1. Main and interaction effects explaining dwell time and fixation time for the difference score.

	Dwell Time				Fixation time			
Source	df	*F*	η^2	*p*	df	*F*	η^2	*p*
Between Subjects								
Experimenter (Ex)	1	.137	.001	.712	1	2.036	.015	.156
Experimental condition (Co)	1	.649	.005	.422	1	3.039	.023	.084
Participants' gender (Ge)	1	.815	.007	.368	1	1.824	.014	.179
Co × Ge	1	1.938	.016	.166	1	.713	.005	.400
Within Subjects								
Body shape (Bo)	1	.051	.000	.822	1	.520	.000	.427
Bo × Ex	1	.764	.000	.384	1	1.149	.001	.286
Bo × Co	**1**	**5.023**	**.003**	**.027**	1	.225	.000	.636
Bo × Ge	1	.088	.000	.767	**1**	**5.490**	**.005**	**.021**
Bo × Co × Ge	1	3.429	.002	.066	1	1.651	.002	.201
Degree of dress (De)	1.86	2.474	.002	.091	1.87	.005	.000	.994
De × Ex	1.86	.274	.000	.744	1.87	.180	.000	.821
De × Co	1.86	.911	.001	.397	1.87	.402	.001	.656
De × Ge	**1.86**	**3.281**	**.003**	**.039**	1.87	.424	.001	.641
De × Co × Ge	1.86	.549	.001	.578	1.87	.162	.000	.836
Bo × De	2	.893	.001	.411	2	.217	.000	.805
Bo × De × Ex	2	.489	.001	.614	2	.017	.000	.983
Bo × De × Co	2	.148	.000	.862	2	2.777	.005	.064
Bo × De × Ge	2	1.989	.002	.139	2	1.180	.002	.309
Bo × De × Co × Ge	2	1.286	.001	.278	2	.876	.002	.418

effects. Although we had a rather large sample for an eye-tracking study, statistical power was not strong enough to detect three- or four-way interactions.

Experimental condition and the gender of participants

Dwell time

We found no support for H1. Thus, we found no effect of the experimental condition on the objectifying gaze. Participants in the experimental condition ($M = -416.26$, $SD = 1{,}057.79$) did not show longer objectifying gaze durations than participants in the control condition ($M = -585.06$, $SD = 1{,}026.61$), $F(1, 124) = .649$, $p = .422$, $\eta^2 = .005$).

With RQ1, we wanted to know whether men and women showed equal objectifying gaze durations in response to pictures of women's bodies. Results showed that dwell time did not differ between men ($M = -581.99$, $SD = 1{,}016.42$) and women ($M = -439.04$, $SD = 1{,}064.46$), $F(1, 124) = .815$, $p = .368$, $\eta^2 = .007$). Answering RQ2, we tested the two-way interaction of experimental condition × participant's gender, which was not significant, $F(1, 124) = 1.938$, $p = .166$, $\eta^2 = .016$.

First fixation time

Although we found no support for H1, the effect was significant on a trend level, $F(1, 124) = 3.039$, $p = .084$, $\eta^2 = .023$. First fixation time in the experimental condition ($M = 118.96$, $SD = 328.18$) was slightly higher than that in the control condition ($M = 42.02$, $SD = 124.35$). Regarding RQ2, we found no difference, $F(1, 124) = 1.824$, $p = .179$, $\eta^2 = .014$, in gazing behavior between men ($M = 51.68$, $SD = 146.35$) and women ($M = 100.11$, $SD = 302.79$). We also identified no interaction effect of experimental condition × participant's gender from RQ1, $F(1, 124) = .713$, $p = .400$, $\eta^2 = .005$.

Women's body shape

Dwell time

To answer RQ3, we looked at the main effect of body shape, which indicated no significant difference between ideal size and plus size models, $F(1, 124) = .051$, $p = .822$, $\eta^2 < .001$. To answer RQ4, we tested the interaction effect regarding body shape × experimental condition, which was significant, $F(1, 124) = 5.023$, $p = .027$, $\eta^2 < .001$. As Figure 1 illustrates, participants in the experimental condition applied the objectifying gaze more frequently to ideal size models than to plus size ones. That result is a highly robust one, because the defined AOIs for ideal size women were smaller than those of plus size women.

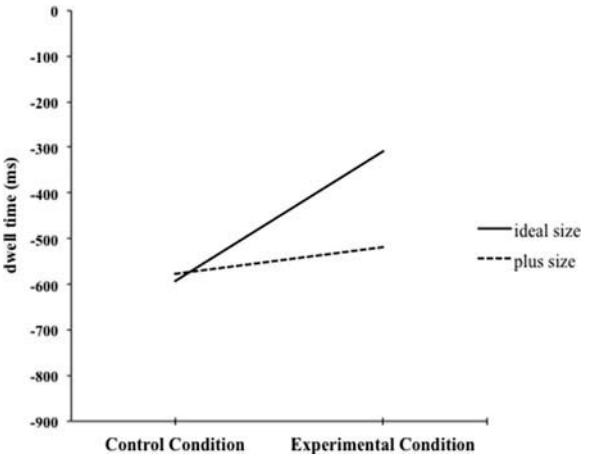

Figure 1. Two-way interaction: Difference score for dwell time (ms) by experimental condition and women's body shape.

First fixation time

For first fixation time, neither the main effect for body shape regarding RQ3, $F(1, 124) = .520$, $p = .427$, $\eta^2 < .001$, nor the interaction effect of body shape × experimental condition (RQ4) was significant, $F(1, 124) = .225$, $p = .636$, $\eta^2 = .001$.

Degree of dress

Dwell time

The predicted main effect of degree of dress on the objectifying gaze (H2) found no support, $F(1.86, 230.27) = 2.474$, $p = .091$, $\eta^2 = .002$, per conventional criteria. Moreover, the hypothesized interaction effect of degree of dress × experimental condition (H3) was not significant, $F(1.86, 230.27) = .911$, $p = .397$, $\eta^2 < .001$. Thus, degree of dress did not moderate the effect of objectifying music videos on the objectifying gaze. Last, we examined all possible two- and three-way interactions, and except for one, none were significant (Table 1). The interaction between degree of dress × participant's gender was significant, $F(1.86, 230.27) = 3.281$, $p = .039$, $\eta^2 = .003$. Women and men differed in their gazing behavior while viewing models in differing degrees of dress; whereas gazing behavior among men and women was similar for partially dressed models, fully and scantily dressed models received more objectifying gazes from women than from men.

First fixation time

We found no main effect of degree of dress (H2) for first fixation time ($F(1.87, 231.85) = .005$, $p = .994$, $\eta^2 < .001$), and the interaction effect of degree of dress × experimental condition (H3) was not significant, $F(1.87,$

231.85) = .402, p = .656, η^2 < .001. Furthermore, we tested all possible two- and three-way interactions, and only that of body shape × participant's gender was significant, $F(1.87, 231.85) = 5.490$, p = .021, η^2 = .005, indicating that women demonstrated longer first fixation times than men when viewing ideal size women.

Last, we ran the entire analysis with heterosexual participants (n = 118) only. The results of that analysis corresponded to the results for all participants regardless of sexual orientation insofar as significance occurred for the same effects. However, for dwell time, the interaction of degree of dress and participants' gender was significant only on the trend level. In addition, instead of using a difference score as the dependent variable, we performed separate analyses for the AOI of sexual body parts and the AOI of the head; however, we found no relevant deviations from the aforementioned results using the difference score. We chose to report the difference score instead of separate findings for sexual body parts versus the head because the difference score conformed better to our understanding of the objectifying gaze.

Discussion

By focusing on body parts and the lascivious moves of women singers and dancers, objectifying music videos impose an objectifying gaze upon their viewers. When watching such videos, viewers can hardly avoid adopting the objectifying gaze, for the sexually objectifying content receives the camera's focal attention. However, though researchers have shown that exposure to objectifying videos can heavily affect an array of potentially negative cognitive and attitudinal outcomes for both men and women (Ward, 2016), none have examined whether objectifying music videos can also alter the gaze with which individuals view others. Based on priming theory, we posited that the mediated objectifying gaze that viewers adopt when watching objectifying videos can subsequently prompt a real objectifying gaze in response to pictures of women. Our results provide some evidence for that reasoning.

We detected an interaction effect of our experimental condition and body shape in terms of dwell time. After exposure to objectifying videos, viewers were more likely to gaze for longer at the sexual body parts (i.e., chest and hips) of ideal size women than those of plus size women. In other words, objectifying music videos, which are likely to depict ideal size artists and dancers, can subsequently prompt individuals to objectify pictures of ideal size women with their gazes. Our finding is in line with priming theory. Because the bodies of ideal size models in our experiment more closely matched those of the objectified models present in music videos, the ideal size models were thus more applicable to the visual prime (Janiszewski &

Wyer, 2014; Kristjánsson & Campana, 2010). It can be speculated that individuals could apply that gaze during interpersonal encounters as well.

Although for many women the objectifying gaze is an everyday experience (e.g., Holland et al., 2017), the results of our study show that interpersonal objectifying experiences differ among women (Fredrickson & Roberts, 1997) —chiefly, that women who correspond to the current body ideal are more often targets of the objectifying gazes of individuals exposed to sexually objectifying music videos. Likewise, Holland and Haslam (2013) reported that thin women are more objectified and receive more attention toward their body than the face, compared to overweight women. Our results also partially align with findings from Gervais et al. (2013) suggesting that women whose body shape fit the cultural ideal were most likely to attract an objectifying gaze. However, in some cases, women with a low ideal body shape were more likely to attract the gaze than women with an average body shape (Gervais et al., 2013). Thus, the authors suggested that women with bodies that fit the cultural ideal of beauty are most at risk for objectifying gazes, followed by women with a low ideal body shape. Because we did not include women with an average body shape, we cannot make a statement regarding this body shape. We discuss this issue in the limitations.

Men in our sample were not generally more likely than women to use an objectifying gaze. Gervais et al. (2013) also did not find in their eye-tracking study support of a gender effect, expect for on an interaction effect suggesting that men first fixated women's waist faster compared to women. Overall, our finding corroborates results from an emerging body of research demonstrating that both men and women objectify women (e.g., Bernard et al., 2012; Holland & Haslam, 2013; Vaes et al., 2011). Objectification theory (Fredrickson & Roberts, 1997) provides a possible explanation why women (also) applied the objectifying gaze. Women from Westernized countries might have likely internalized the belief that it is important for women to conform to beauty ideals to be valued by men. Thus, women might have felt encouraged to apply the objectifying gaze to images of women after being primed with sexually objectifying music videos. They might have evaluated pictures of women by applying a male gaze behavior, the objectifying gaze. Arguably, the objectifying gazes of women could, therefore, augment women's reported negative consequences of receiving men's objectifying gazes, including poorer cognitive competence (Gervais et al., 2011; Guizzo & Cadinu, 2017), body shame, and social physique anxiety (Calogero, 2004; Miles–McLean et al., 2015). Indeed, women who receive objectifying stares from other women might interpret those stares as appearance-related evaluations, which can prompt body surveillance or body dissatisfaction (Calogero et al., 2009; Tylka & Sabik, 2010).

Inconsistent with our hypotheses, we found no main effect of degree of dress or an interaction effect with experimental condition. Accordingly,

differing degrees of dress—fully, scantily, and partially dressed—did not generate differences in participants' gazing behavior. Previous research has suggested that increased levels of nudity attract increased visual attention to sexual body parts (Lykins et al., 2008; Nummenmaa et al., 2012) and that women wearing lingerie received more attention than women dressed in plain clothing (Holland & Haslam, 2013). We could not validate those findings, perhaps due to the stimuli that we used. In all three degrees of dress, the models' body shape remained visible; clothing did not fully cover the models' body shape, which was thus visible, as were their sexual body parts. If the sexually objectifying music videos primed participants to apply a sexually objectifying gaze, then they could easily do so for models in all three degrees of dress. Furthermore, we did not manipulate the degree of sexualizing dress (Graff, Murnen, & Smolak, 2012), but rather the degree of skin exposure. Further research is required to shed light on the role of degree of dress.

In the context of objectification theory, our findings imply that, indeed, sexually objectifying media convey an objectifying gaze, which is subsequently adopted by the viewers. It is theorized—and widely confirmed by a large body of research (Ward, 2016)—that these kinds of media influence viewer's self-perception (e.g., increased self-objectification). With the findings from our study, we extend existing tents of objectification theory by suggesting that sexually objectifying media use is likely to influence not only the perception of the self, but also the perception of others (i.e., other objectification). Clearly, more research is needed to substantiate our initial findings.

Alternative explanations

It is important to discuss three alternative explanations for the priming effect on the objectifying gaze. The first is that the sexually objectifying media content might have elicited sexual arousal among participants and thus directed their attention to the models' sexual body parts. If sexual arousal was the trigger, because the overwhelming majority of the sample was heterosexual, then we would have also expected differences in the gazing behavior of men and women. However, our results indicated no such difference.

Second, one might argue that media-induced self-objectification, not priming, could have been the trigger for the objectifying gaze. Researchers have shown that exposure to sexually objectifying music videos can elevate women' state of self-objectification (Aubrey & Gerding, 2015; Karsay & Matthes, 2016). Self-objectification, in turn, was positively correlated with the objectification of both women and men (e.g., Lindner et al., 2012; Puvia & Vaes, 2013). When self-objectifying, individuals evaluate and value their bodies based on ideal body characteristics frequently presented in

contemporary media environments. Thus, ideal size models represent the standard by which women evaluate themselves. In fact, a key mechanism is upward comparison (Franzoi et al., 2012), meaning that women tend to compare their bodies far more to thin, idealized models (Tylka & Sabik, 2010) than to plus size models. A self-objectification explanation would therefore predict that an objectifying gaze prompted by objectifying music videos would be stronger for women than for men. However, our results did not support that explanation.

Third, one could argue that because we activated appearance anxiety or body appearance-related schemas among participants (e.g., Aubrey & Taylor, 2009), their gazes were arguably not sexual in nature. However, we specifically measured gazing behavior directed at sexual body parts. Furthermore, past eye-tracking research has indicated that higher body dissatisfaction among women predicted less visual attention to idealized body parts (Cundall & Guo, 2017; Janelle, Hausenblas, Ellis, Coombes, & Duley, 2009), which was evidently not the case in our study. Thus, our theoretical explanation is clearly superior—namely, that priming works for all target stimuli as long as they are applicable to the prime (Janiszewski & Wyer, 2014). As a case in point, the models that we presented to participants were comparable to the protagonists in the videos, particularly in terms of gender and age, which prompts us to conclude that priming is a more likely explanation. Moreover, priming is a frequently cited mechanism for the effects of sexualizing or objectifying media on various outcomes (e.g., Aubrey, Hopper, & Mbure, 2011; Dillman Carpentier, Northup, & Parrot, 2014; Karsay & Matthes, 2016; Kistler & Lee, 2009). However, more empirical research is clearly necessary, for at this point, we cannot entirely rule out alternative explanations, although current evidence indicates a priming process.

Limitations and future research

Generalizations from this study are limited in several ways. First, we differentiated between thin-ideal women and plus size women, but we did not include average size women. Because the findings of an eye-tracking study (Gervais et al., 2013) suggested that, in some cases, women representing the low ideal of beauty are more frequently objectified than average ideal women, more research investigating women with an average body shape is needed.

Furthermore, following Gervais et al. (2013), we exposed participants to photographs of models to observe their objectifying gazes. Because the women depicted were models for online fashion retailers, they all corresponded well to the current Western ideal of beauty, despite their various body shapes. Of course, in terms of external validity, it would have been better to observe participants' objectifying gazes in response to real women instead of models in photographs. In the future, researchers could replicate our findings with confederates.

Although we carefully selected music videos as priming stimuli, we did not account for all aspects regarding sexual objectification. Because we focused on visual presentations of sexual objectification, we did not manipulate the content of the lyrics, despite the near impossibility of doing so. As an alternative, we suggest that researchers show instrumental (e.g., karaoke) versions of music videos without lyrical content.

Given the fact that it was the first study investigating the objectifying gaze after priming participants with objectifying videos, replications are highly encouraged. Specifically, researchers should aim at increasing statistical power by raising the number of participants and/or by simplifying the research design. In future studies, researchers should consider more distinct areas (e.g., the waist), different perspectives (i.e., pictures from behind), and a greater spectrum of body shapes (e.g., Cundall & Guo, 2017). Furthermore, regarding the presentation of the stimulus material, researchers should perform not one, but several trials.

Moreover, we could not examine the long-term consequences of objectifying media content; however, in a long-term experimental setting, we would have disregarded potential negative consequences for both participants and objects of their objectifying gazes. Future research should apply correlational designs that measure past exposure to objectifying videos before tracking eye behavior, which could indicate long-term effects. Last, in future studies, researchers should test the role of potential mediators, including self-objectification, social comparisons, and sexual arousal, to investigate possible alternative explanations. Replications with other objectifying media (e.g., advertisements) are also necessary.

Conclusion

We found clear support for the assumption that both women and men can adopt the objectifying gaze elicited in media and apply it to pictures of ideal size women. Arguably, such gazing behavior can have negative consequences for both the subject and object of the objectifying gaze. What might follow is the compounding of the negative effects of objectifying media. For subjects, exposure to objectifying media has direct negative effects on women (and men), by, for instance, changing the standards how women are evaluated and evaluate themselves. In addition, objectifying media can foster an objectifying gaze toward other women. Being an object of an objectifying gaze could then prompt further negative outcomes, including body surveillance and body dissatisfaction.

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Appendix
Examples for models who served as eye-tracking stimuli

.	fully dressed	scantily dressed	partially clad
ideal size:			
plus size: