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Music and Aggression: The Impact of Sexual-Aggressive Song Lyrics on Aggression-Related Thoughts, Emotions, and Behavior Toward the Same and the Opposite Sex

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Three studies examined the impact of sexual-aggressive song lyrics on aggressive thoughts, emotions, and behavior toward the same and the opposite sex. In Study 1, the authors directly manipulated whether male or female participants listened to misogynous or neutral song lyrics and measured actual aggressive behavior. Male participants who were exposed to misogynous song lyrics administered more hot chili sauce to a female than to a male confederate. Study 2 shed some light on the underlying psychological processes: Male participants who heard misogynous song lyrics recalled more negative attributes of women and reported more feelings of vengeance than when they heard neutral song lyrics. In addition, men-hating song lyrics had a similar effect on aggression-related responses of female participants toward men. Finally, Study 3 replicated the findings of the previous two studies with an alternative measure of aggressive behavior as well as a more subtle measure of aggressive cognitions. The results are discussed in the framework of the General Aggression Model.

Keywords: aggression; music; misogynous; men-hating; media violence

Previous research has shown that different trait and state variables could increase sexual aggression of men toward women, such as alcohol abuse (Abbey, McAuslan, Ross, & Zawacki, 1999), pornography (Cowan, Lee, Levy, & Snyder, 1988), sexually degrading language (Murnen, 2000), peer support for sexually aggressive behavior (Schwartz & DeKeseredy, 1997), the predisposition of hypermasculinity (Mosher & Anderson, 1986), socialization processes (Lisak & Roth, 1990), and even subliminal sex priming (Mussweiler & Förster, 2000). All of these variables share the characteristic of determining men's cognitive associations concerning women. Once formed, cognitive associations can have a considerable

impact on attention, information processing (storage, retrieval), and subsequent behavior (e.g., Fiske & Taylor, 1991). For example, a sexually aggressive man's strong association between women and violence could lead him to interpret women's behaviors as adversarial and antagonistic and encourage him to behave aggressively toward women (Chen & Bargh, 1997).

To reduce male sexual aggression, it is an important challenge for research to identify sources of information that determine men's cognitive associations concerning women. Misogynous music may be one such information source that plays an important role in the development of men's cognitive associations regarding women. Given that music is omnipresent in our daily private and public life, the role played by music deserves more attention than it has received to date. Every day, young Germans spend a considerable amount of time listening to music. For example, in a cross-sectional study of 433 high school students within the age range of 16 to 19 years, Babisch and Bohn (2005) found that these students listened to between 0.5 and 1 hour of music through personal media devices and earphones every day. In particular, the consumption of "misogynous music" (which is mostly found in rap and rock music) has increased throughout the past few years (Wikipedia, 2005). For example, the artist Eminem—famous for his

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rap music with extremely misogynous lyrics—sold 7.4 million copies of his album *The Eminem Show*. Because misogynous music is such a widespread, frequently consumed, and successful phenomenon in the music business, the present research investigates the impact of this music genre on men's aggression-related responses to women. More specifically, we examine whether misogynous music increases male aggression toward women. Moreover, the present studies also investigate whether men-hating music has a similar effect on aggression-related responses of women toward men.

RESEARCH ON MEDIA VIOLENCE

Research on media violence has shown that exposure to violence in mass media increases the frequency of aggression-related thoughts, affects, and behavior (e.g., Bushman, 1998; for a recent review, see also Anderson, Berkowitz, et al., 2003). This research was predominantly performed in the context of visual violence stimuli and showed that participants who were exposed to violent movies reported more aggression-related thoughts, affects, and behavior than did participants who watched nonviolent movies (e.g., Berkowitz, 1964; Bushman, 1998). Anderson, Berkowitz, et al. (2003) mentioned several variables that moderate the effect of media violence on aggression responses, such as the characteristics of viewers (e.g., aggressive predisposition), media content (e.g., attractiveness of perpetrator), or social environments (e.g., influence of parents or peers). Most research in this field was conducted within the theoretical context of the General Aggression Model (GAM). The GAM is mainly based on social-cognitive research (e.g., Bandura, 1986; Berkowitz, 1993; Bushman, 1998; Huesmann, 1988) and has been developed from aggression research in several different areas, including media violence. In line with Berkowitz (1984), we suggest that aggressive ideas promoted by violent media prime other semantically related thoughts. This priming explanation is, in turn, based on a concept derived from cognitive psychology, where activation is spread within a memory network (e.g., Collins & Loftus, 1975): thoughts (e.g., triggered by violent media) emit activation along associative cognitive pathways and thereby activate other related thoughts. Accordingly, other aggression-related cognitions and ideas (which must not be identical to those observed in the media) also may be evoked by the initial aggressive cognition. Moreover, within the same sort of associative network, thoughts are linked not only to other cognitions but also to behavioral and affective reactions (e.g., Bower, 1981). Therefore, according to GAM, exposure to media violence such as misogynous or men-hating

music acts as a priming stimulus that can evoke various associations consisting of aggressive thoughts, expectations, beliefs, and emotions related to violence, thereby finally even providing the starting point for aggressive actions (also see Anderson & Bushman, 2002; Bushman, 1998).

Although the predictions of GAM have been investigated in detail by previous studies, less research has been conducted on (nonvisual) acoustic violence stimuli in the mass media, such as violent music. Some research into the context of music and violence found that the exposure to violent music videos increased adversarial sexual beliefs (Peterson & Pfof, 1989), the acceptance of violence in dealing with interpersonal problems (Johnson, Jackson, & Gatto, 1995), teen-dating violence (Johnson, Adams, Ashburn, & Reed, 1995), antisocial behavior (Hansen & Hansen, 1990), and stereotypic sex-role behavior (Hansen, 1989). Correlational studies also have revealed that consumers of rap and heavy metal music reported more hostile attitudes and higher sexual activity and drug use than consumers of other music genres (Rubin, West, & Mitchell, 2001). However, in these studies, visual and acoustic stimuli have either been confounded (research on violent music videos; e.g., Peterson & Pfof, 1989) or cause and effect could not be determined (correlational studies; e.g., Rubin et al., 2001). The present research will address the methodological problems of previous research by employing only acoustic stimuli in addition to real experiments to clearly determine cause and effect.

Furthermore, some experimental studies conducted entirely without visual stimuli revealed that music with violent lyrics increases aggression-related thoughts and affects (Anderson, Carnagey, & Eubanks, 2003), whereas other studies revealed no effect of violent lyrics on aggression-related variables (e.g., Ballard & Coates, 1995). Finally, and most relevant to our work, there is some previous research on the impact of misogynous song lyrics on sexual aggression of men toward women. For example, in a study by Barongan and Hall (1995), male college students listened to rap music with either misogynous or neutral song lyrics. Afterward, they viewed three different vignettes, which were either neutral, sexual-violent, or assaultive. Finally, they were asked to select one of the three vignettes to be shown to a female confederate. Participants who had listened to the misogynous music were significantly more likely to select the assaultive vignette. Another study by Wester, Crown, Quatman, and Heesacker (1997) yielded mixed results: male participants listened to either (a) sexually aggressive lyrics without music, (b) music with sexually aggressive lyrics, (c) the same music as in (b) but without sexually aggressive lyrics, or (d) no music or lyrics at all. Negative attitudes of men toward women did not

differ with regard to the four experimental conditions. However, participants who listened to sexually aggressive lyrics reported their relationships with women to be more conflict-ridden. The main problem of this previous research is the lack of behavioral aggression measures; this will be addressed by the present research.

To summarize, previous research on the impact of violent song lyrics (a) mainly focused on attitudes, cognitions, and affects (e.g., Anderson, Carnagey, et al., 2003) rather than on real aggressive behavior and (b) rarely differentiated between misogynous and nonmisogynous song lyrics—in the cases where this was differentiated, aggressive target behavior was not clearly investigated (e.g., passing on an assaultive vignette; Barongan & Hall, 1995) or mixed results were obtained (Wester et al., 1997; for an overview to limitations of research on media violence, see also Freedman, 2002). In addition, previous studies were limited to men's reaction to women and did not enable a comparison between sex of participant and sex of target. To the best of our knowledge, as yet there has been no study investigating the influence of sexually aggressive song lyrics on women's reaction to men or women or men's reaction to men. Therefore, no baseline is available to assess the effect of misogynous lyrics on aggressive responses.

THE PRESENT RESEARCH

In a series of three studies, we investigated the impact of misogynous and men-hating song lyrics on aggression-related thoughts, emotions, and behavior toward the same and the opposite sex. In Study 1, male and female participants listened to misogynous or neutral song lyrics and, subsequently, their actual aggressive behavior toward a male or a female confederate was measured. Study 2 attempted to shed light on the underlying psychological mechanisms by measuring aggression-related cognitions and emotions. Furthermore, Study 2 widened the scope of Study 1 with regard to the effect of men-hating music on aggressive inclinations of women toward men: Participants were exposed to misogynous, men-hating, and neutral song lyrics and then the listeners' aggression-related cognitions and emotions were measured. Study 3 intended to replicate the findings of the previous two studies by employing additional measures of aggressive inclinations and behavior. In short, the aim of the present research was to investigate whether male and female participants are prone to be influenced by violent music. More specifically, we tested the impact of misogynous song lyrics on aggressive responses of men toward women as well as more aggressive responses of women toward men after being exposed to men-hating music.

STUDY 1

Overview and Hypotheses

The aim of the first study was twofold. First, we tried to find first evidence for our main prediction that misogynous song lyrics increase aggressive responses of men toward women. Second, we wanted to extend previous research on music and aggression by showing that misogynous song lyrics not only affect aggression-related cognitions and emotions but also actual aggressive behavior. Male and female participants were exposed either to misogynous or to neutral song lyrics. Afterward, in a seemingly unrelated second marketing study, they were asked to add hot chili sauce to a sandwich prepared for either a female or male confederate. The amount of added chili sauce is a valid indicator of the intensity of aggressive behavior (cf. Brooks, 1992; McGregor et al., 1998).¹ In their experimental research, McGregor et al. (1998) successfully employed the administration of hot sauce as an aggression measure. Our procedure is very similar to that used by these authors.

To summarize, we expected that (a) men who listened to misogynous music were more aggressive toward women than were women who listened to misogynous music, (b) men who listened to misogynous music were more aggressive toward women than toward men, and (c) men who listened to misogynous music were more aggressive toward women than were men who listened to neutral music. No differences in aggressive behavior toward the male or female confederate as a function of music genre were expected for female participants.

Method

Participants and design. One hundred and sixty-one students (88 men, 73 women) from the Ludwig-Maximilians-University, Munich, participated in this study for course credit. Ages ranged between 19 and 60 years ($M = 27.13$, $SD = 7.97$). The study was based on a 2 (music genre: misogynous vs. neutral) \times 2 (sex of participants) \times 2 (sex of confederate) factorial design.

Material. We collected suggestions from psychology students for contemporary rock, pop, and rap songs that met the following characteristics: four songs had to have clearly misogynous content and four songs had to have no misogynous content. The lyrics of the four songs of each category had to belong to comparable music genres and to be of about the same length. To increase the strength and ecological validity of the experimental manipulation, all participants listened to a song with English lyrics and also to one with German lyrics. Within the misogynous lyrics category, we used

the following songs: “Superman” (Eminem), “Self-Esteem” (Offspring), “Marie” (Joachim Deutschland), and “Alles FaM” (Böhse Onkelz). Participants in the neutral song lyrics condition listened to “It’s My Life” (Bon Jovi), “Let Me Entertain You” (Robbie Williams), “Bochum” (Herbert Grönemeyer), and “Hallo Klaus” (Nickerbrocker und Biene). To control serial effects, we varied whether participants first listened to a German or to an English song.

A pretest with 24 participants (age: $M = 26.67$, $SD = 12.31$; 11 women, 13 men) from the same participant pool as Study 1 was conducted to ensure that the misogynous songs were perceived as more misogynous and aggressive than the neutral songs. Participants listened to all eight (four neutral, four misogynous) songs and assessed to what extent the single song lyrics were misogynous (0 = *not at all*, 10 = *definitely*) and aggressive (0 = *not at all*, 10 = *definitely*). As intended, misogynous songs were perceived as more misogynous ($M = 7.54$, $SD = 2.07$) and aggressive ($M = 7.50$, $SD = 2.04$) than neutral songs (misogynous: $M = 0.71$, $SD = 1.31$), $F(1, 23) = 274.66$, $p < .001$, $\eta^2 = .93$ (aggressive: $M = 2.23$, $SD = 2.01$), $F(1, 23) = 8.71$, $p < .01$, $\eta^2 = .28$.

Procedure. After being welcomed by the experimenter, participants learned that they would participate in two different market surveys. The first one dealt with music lyrics and music preferences, the second with the taste of hot spices. After participants listened to the two songs, they indicated how much they liked each song, how much the song fit their personal preferences, and whether they would recommend the song. All items were on a scale from 0 (*definitely not*) to 9 (*definitely yes*). For each song, these items were highly correlated ($\alpha = .96$ for the English songs; $\alpha = .90$ for the German songs, respectively) and were thus averaged. In addition, participants answered some filler questions with regard to their general music preferences and their purchasing preferences for these songs.

Afterward, the second component of the study (that dealing with preferences for different spices) was introduced. The experimental procedure of the second part of Study 1 was similar to the one used in the study by McGregor et al. (1998). Participants were informed that hot and sweet chili sauces were being examined that day. At that moment, a female or male confederate knocked at the door of the experimental lab, stepped in, and introduced himself or herself as the new participant for the spice-testing marketing study. The experimenter told him or her that hot and sweet chili sauces were currently being tested. The confederate told the experimenter that he or she does not like hot spices at all and hoped to test only the sweet and not the hot

chilli sauce but that because of good payment, he or she would be willing to participate in this marketing study regardless of the flavor to be tested. After this introduction, the experimenter told the confederate to wait in the adjoining room to receive a sample of the sauce. We used four different male and four different female confederates who were—as far as possible—selected to be similar with regard to physical attractiveness, physical size, and communication attributes. All confederates were trained to react in a similar way to the experimenter and participants. In addition, all confederates were blind to the experimental condition.

Once the confederate left the lab, participants were told that because the experimenter needed to be blind to the experimental condition (i.e., whether hot or sweet chili sauce was administered to the confederate), it was necessary for the participants to administer the chili sauce to the male or female confederate. Next, the experimenter gave the participants a bottle of chili sauce, a small plastic cup, a plastic spoon, and a metal spoon. Participants were first instructed to test with the metal spoon what kind of chili sauce (hot or sweet) they were dealing with and then to pour the chili sauce into the small plastic cup with the plastic spoon. Actually, participants were always given hot chili sauce to test and to administer to the confederate. Subsequently, participants used the plastic spoon to place an undetermined quantity of hot chili sauce into the plastic cup. The participants were told that all quantities of chili sauce were useful for the marketing study and that, therefore, they were free to decide how much chili sauce to administer. However, it was clearly communicated to the participants that the person who received the chili sauce would have to consume all of it. Participants also were told that because the cups were hooded, the experimenter would not know how much chili sauce had been administered to the male or female confederate. Thus, the anonymity of their behavior was assured. The amount of chili sauce was measured in grams and used as a behavioral measure of aggression. After performing the hot chili task, participants left the experimental lab and were debriefed. During the debriefing, special care was taken to ensure that the participants did not leave with any negative feelings that may have emerged from potentially causing pain or distress to another person. Accordingly, participants were directly asked whether they experienced negative feelings concerning the experiment. We made clear to the participants that no other person had really eaten the administered chili sauce. None of the participants indicated having felt distress. They were thanked for participation, received their experimental requirement credit, and were dismissed.

TABLE 1: Means (SDs) of Added Hot Chili Sauce in Grams as a Function of Music Genre, Sex of Participants, and Sex of Confederate in Study 1

Song Lyrics/Sex of Participants	Sex of Confederate	
	Female	Male
Neutral/men	21.15 (13.31) <i>n</i> = 13	24.47 (20.89) <i>n</i> = 15
Misogynous/men	31.75 (21.05) <i>n</i> = 30	21.32 (13.97) <i>n</i> = 28
Neutral/women	23.58 (19.05) <i>n</i> = 12	20.50 (12.85) <i>n</i> = 12
Misogynous/women	20.62 (19.07) <i>n</i> = 26	24.96 (18.26) <i>n</i> = 23

Results and Discussion

Check for interfering effects. Male participants ($M = 28.64$, $SD = 8.97$) were significantly older than female participants ($M = 25.33$, $SD = 6.18$), $F(1, 158) = 7.13$, $p = .01$, $\eta^2 = .04$; however, age of participants was not significantly associated with the dependent variable and did not interact with the experimental conditions, $F < 1$, $p > .54$. Order of English versus German song had no effect on any of the dependent variables and was thus not considered further. Due to suspicion about the experimental hypotheses, 2 participants had to be excluded from further analyses.

Aggressive behavior. Means and standard deviations for the experimental conditions are shown in Table 1. A $2 \times 2 \times 2$ factorial analysis of variance (ANOVA) with music genre (misogynous, neutral), sex of participants, and sex of confederate as between-subjects variables revealed a marginally significant three-way interaction, $F(1, 151) = 3.02$, $p = .08$, $\eta^2 = .02$. Because omnibus ANOVAs often do not have sufficient power to detect such interactions, following recommendations by Rosenthal and Rosnow (1985) and Howell (1997), we conducted planned contrasts that tested the predicted patterns of results more directly. These analyses revealed a significant contrast between men who listened to misogynous song lyrics and administered hot chili sauce to the female confederate versus all other experimental conditions, $t(151) = -2.55$, $p < .02$. Further planned contrasts revealed that (a) men who listened to misogynous music administered more hot chili sauce to the female confederate than did women who listened to misogynous music, $t(151) = 2.32$, $p < .02$, (b) men who listened to misogynous music administered more hot chili sauce to women than to men, $t(151) = 2.12$, $p < .03$, and (c) men who listened to misogynous music administered marginally more hot chili sauce to women than did men who listened to neutral

music, $t(151) = 1.78$, $p < .08$. Post hoc analyses (Tukey) revealed no further significant differences between the single experimental conditions.

Song evaluations. A 2 (music genre) $\times 2$ (sex of participants) $\times 2$ (song language: English vs. German) ANOVA with repeated measures on the last factor revealed a significant interaction between music genre and sex of participants, $F(1, 157) = 7.07$, $p < .01$, $\eta^2 = .04$. Male participants ($M = 3.97$, $SD = 2.96$) liked the misogynous songs more than did female participants ($M = 2.15$, $SD = 2.43$), $F(1, 107) = 9.18$, $p < .01$, $\eta^2 = .08$. In contrast, there were no sex differences regarding the neutral songs, $F(1, 50) = 1.28$, $p = .26$, $\eta^2 = .03$. However, an analysis of covariance (ANCOVA) revealed that song evaluations do not account for the interaction effect reported above (the three-way interaction between music genre, sex of participants, and sex of confederate concerning hot chili sauce remained marginally significant, $p = .08$, when the evaluations of the two songs were entered as covariates).

To summarize, male participants who listened to misogynous song lyrics reacted more aggressively to the female than to the male confederate. As expected, no differential effect of song lyrics on aggression toward the female and male confederates was found for women. To elucidate the underlying psychological processes, Study 2 examined whether misogynous song lyrics also showed different sex effects on aggression-related cognitions and emotions, which are the main mediators of aggressive behavior according to the General Aggression Model (GAM; Anderson, 1997; Anderson, Anderson, & Deuser, 1996; Anderson & Bushman, 2002). Moreover, Study 2 included an experimental condition in which participants were exposed to songs with men-hating song lyrics.

STUDY 2

Overview and Hypotheses

Male and female participants were exposed to either misogynous, men-hating, or neutral song lyrics. Next, participants indicated to what extent they experienced feelings of vengeance after listening to the song lyrics. Vengeance is known to be an important aggression-related emotion (Geen & Stonner, 1973), especially in conflictual (intimate) relationships between men and women (Finkel, Rusbult, Kumashiro, & Hannon, 2002). Subsequently, and referring to methodologically related prior research (e.g., Bushman & Geen, 1990) that investigated the effects of violent media on the priming of aggression-related cognitive-associative networks, participants listed thoughts about typical attributes of

men and women. Misogynous song lyrics should result in a temporary high accessibility of aggression-related cognitive and emotional constructs. Therefore, we expected male participants to report the highest level of negative and deprecatory attributes describing women, as well as the highest levels of vengeance, after they had listened to misogynous song lyrics when compared to men-hating or neutral songs lyrics. A similar effect was expected for female participants who listen to men-hating song lyrics.

Specifically, with regard to male participants, we expected men who listened to misogynous music to report more negative cognitions about women and experience more vengeance than (a) women who listened to misogynous music and (b) men who listened to men-hating and neutral music. With regard to female participants, we expected women who listened to men-hating music to report more negative cognitions about men and vengeance than (a) men who listened to men-hating music and (b) women who listened to misogynous and neutral music.

Method

Participants and design. One hundred and fifty-two students (75 women, 77 men) with ages ranging between 19 and 54 years ($M = 27.24$, $SD = 7.82$) participated in exchange for partial credit toward their introductory psychology experimental requirement. The study was based on a 3 (music genre: misogynous vs. men-hating vs. neutral) \times 2 (sex of participant) factorial design.

Materials. We used the same four misogynous and four neutral songs as in Study 1. Within the additional men-hating lyrics condition, we exposed participants to the following songs: "You Oughta Know" (Alanis Morissette), "Can't Hold Us Down" (Christina Aguilera), "Ich find dich scheiße" (Tic Tac Toe), and "Neue Männer braucht das Land" (Ina Detar). Pretests revealed that the lyrics of these songs were perceived as more men-hating ($M = 5.42$, $SD = 2.32$) than the misogynous ($M = 0.33$, $SD = 0.92$) and neutral song lyrics ($M = 0.73$, $SD = 1.29$), $F(2, 22) = 51.17$, $p < .001$, $\eta^2 = .82$. Furthermore, misogynous ($M = 7.50$, $SD = 2.04$), $F(1, 23) = 144.01$, $p < .001$, $\eta^2 = .86$, and men-hating songs ($M = 6.35$, $SD = 2.17$), $F(1, 23) = 38.40$, $p < .001$, $\eta^2 = .63$, also were perceived as more aggressive than neutral songs ($M = 2.23$, $SD = 2.01$). Misogynous and men-hating songs only differed marginally with regard to perceived aggressiveness, $F(1, 23) = 3.60$, $p = .07$, $\eta^2 = .14$.

Procedure. Participants learned that the experiment was about how different songs affect the performance of various tasks. They were asked to listen to two songs (one English, one German) and to complete several psychological tasks. Participants then listened to the

randomly assigned songs (misogynous, men-hating, neutral), reported their feelings of vengeance, and listed what they considered to be positive and negative attributes of men and women.

Vengeance was measured with the following items: (a) "I often think about what should happen to people who have done an injustice to me" and (b) "If somebody was unfair to me, I wish that person to be punished" (0 = *never*, 10 = *very often*). Both items were highly correlated ($r = .48$, $p < .01$), and were therefore pooled in a vengeance scale ($\alpha = .65$). Next, cognitions and beliefs about typical attributes of men and women were measured with a free association task. Participants were instructed to write down typical attributes of women and, subsequently, typical attributes of men. To prevent serial effects, half of the participants first wrote down female and then male attributes while the other half first wrote down male and then female attributes. Two independent raters who were blind to the experimental condition rated the participants' answers according to the two dimensions of positive (e.g., warm, reliable, sexy, etc.) and negative (e.g., deceptive, unreliable, selfish, etc.). The raters had a high overlap of 95%. Disagreements were resolved by discussion.

To prevent serial effects, half of the participants first reported their actual emotions and subsequently their cognitions, whereas the other half first reported their cognitions and then their emotions. The experiment ended once participants had reported their cognitions and emotions. Participants were thoroughly debriefed about the aim of the study; as in Study 1, we made a special effort to ensure that participants did not leave with any negative emotions.

Results and Discussion

Check for interfering effects. There were no significant order effects on any of the dependent variables, and thus, these are not considered further. Female ($M = 27.67$, $SD = 9.58$) and male participants ($M = 26.39$, $SD = 6.29$) did not differ in age, $F < 1$.

Reported typical female and male attributes. Cell means and standard deviations for reported positive and negative female and male attributes are shown in Table 2. A 3 (music genre: misogynous vs. men-hating vs. neutral) \times 2 (sex of participant) \times 2 (reported positive minus negative attributes of men vs. women) ANOVA with repeated measures on the last factor revealed a significant three-way interaction, $F(2, 146) = 4.25$, $p < .02$, $\eta^2 = .06$. Planned contrasts revealed that men who listened to misogynous music reported more negative attributes of women than (a) women who listened to misogynous music, $t(146) = 3.78$, $p < .001$, and (b) men who listened to neutral and men-hating music, $t(146) = -3.72$,

TABLE 2: Means (SDs) of Difference Scores for Retrieved Positive and Negative Attributes of Men and Women as a Function of Music Genre and Sex of Participant in Study 2

Song Lyrics	Male Participants		Female Participants	
	Male Attributes	Female Attributes	Male Attributes	Female Attributes
Neutral	-0.08 (1.50) <i>n</i> = 24	0.75 (1.73)	-0.58 (1.38) <i>n</i> = 24	1.25 (2.11)
Misogynous	0.24 (1.54) <i>n</i> = 25	-1.04 (1.43)	-0.48 (1.53) <i>n</i> = 23	0.87 (1.89)
Men-hating	-0.11 (1.03) <i>n</i> = 28	0.32 (1.36)	-0.75 (1.48) <i>n</i> = 28	0.01 (1.87)

TABLE 3: Means (SDs) for the Experienced Emotion of "Vengeance" as a Function of Music Genre and Sex of Participants in Study 2

Song Lyrics	Sex of Participants	
	Male	Female
Neutral	4.27 (2.52) <i>n</i> = 24	4.42 (2.40) <i>n</i> = 24
Misogynous	6.06 (2.60) <i>n</i> = 25	3.63 (2.11) <i>n</i> = 23
Men-hating	4.91 (2.35) <i>n</i> = 28	4.23 (2.34) <i>n</i> = 28

$p < .001$. In addition, women who listened to men-hating music reported marginally more negative attributes of men than men who listened to men-hating music, $t(146) = 1.70$, $p < .10$. However, they did not report more negative attributes about men than women who listened to neutral or misogynous music, $t < 1$. Post hoc analyses (Tukey) revealed no further significant differences between the single experimental conditions.

Reported emotion of vengeance. Cell means and standard deviations for vengeance are shown in Table 3. Ratings of reported vengeance were subjected to a 3 (music genre) \times 2 (sex of participant) ANOVA. Results revealed a significant interaction between music genre and sex of participants, $F(2, 146) = 3.65$, $p < .05$, $\eta^2 = .05$. Planned contrasts revealed that men who listened to misogynous music reported more vengeance than (a) women who listened to misogynous music, $t(146) = 3.52$, $p < .01$, and (b) men who listened to neutral and men-hating music, $t(146) = 2.52$, $p < .02$. However, no significant differences were found for female participants, all $|ts| < 1$. Post hoc tests (Tukey) revealed no further significant differences between the experimental conditions.

Song evaluations. A 3 (music genre) \times 2 (sex of participants) \times 2 (song language) ANOVA with repeated measures on the last factor was performed. In contrast to Study 1, the interaction between music genre and sex of participants was not significant, $F(2, 146) = 1.47$, $p = .23$, $\eta^2 = .02$. In addition, all main effects and the remaining interactions were not significant. Further analyses (ANCOVA) revealed that song evaluations of both songs had no impact on the dependent variables' reported attributes (all F s < 1.59 , all p s $> .20$) and vengeance (all F s < 1 , all p s $> .35$). All interactions reported above in context of the main analyses were still significant ($p < .05$) when song evaluations were controlled as covariates.

To sum up, misogynous song lyrics increased male, but not female, participants' negative cognitions toward women and their feelings of vengeance compared with men-hating or neutral song lyrics. A similar (but less pronounced) tendency concerning reported negative cognitions toward men was observed for female participants who were exposed to men-hating song lyrics. Female participants' level of reported vengeance was not affected by different music genres.

A flaw of Study 2 was that the assessment of only one emotion (vengeance) and valenced associations of men and women may have been too limited. Probably, this procedure implies much experimenter demand. Thus, further measures of aggression were needed. Study 3 addresses this point by employing alternative measures of aggressive behavior, cognitions, and emotions. Another shortcoming of Study 2 was that the employed misogynous songs seem to be more negative to women than the men-hating songs were negative toward men. In our pretest, the ratings for the misogynous songs was $M = 7.4$ and the rating for men-hating songs was $M = 5.4$. These differences in negativity communicated by the two types of songs could explain the less-pronounced findings for men-hating music (as opposed to misogynous music). Thus, Study 3 employed alternative misogynistic, men-hating, and neutral song lyrics that were better matched with regard to strength, arousal, and negativity.

STUDY 3

Female and male participants listened to two different misogynous, men-hating, or neutral songs. Afterward, aggressive cognitions (word-completion task), attitudes toward women and men (reported typical attributes of women and men), positive and negative emotions (PANAS), as well as actual aggressive behavior toward female and male target persons were measured. We expect increased aggressive inclinations of men toward women after listening to misogynous rather than men-hating or

neutral song lyrics. A similar increase in aggressive inclinations was expected for women who listened to men-hating rather than misogynous or neutral song lyrics.

Method

Participants and design. One-hundred and seven students (56 women, 51 men) with ages ranging between 18 and 49 years ($M = 24.11$, $SD = 5.17$) participated in exchange for partial credit toward their introductory psychology experimental requirement. The study was based on a 3 (music genre: misogynous vs. men-hating vs. neutral) \times 2 (sex of participant) between-subject design.

Materials. In Study 3, we used songs that were not used in Studies 1 or 2. In a pretest, 9 participants assessed 12 songs and indicated to what extent they were misogynous, men-hating, and arousing and to what extent they elicited positive feelings (on a scale from 0 = *not at all* to 10 = *extremely*). From these 12 songs, we selected 2 neutral, 2 misogynous, and 2 men-hating songs. Within the misogynous condition, we exposed participants to the following German songs: "Nach mir" (Herbert Grönemeyer) and "OK" (Farin Urlaub). Within the men-hating condition, we used the following songs: "Männer sind Schweine" (Die Ärzte) and "Du liebst mich nicht" (Sabrina Setlur). Finally, within the neutral condition, we used the following songs: "Kopfüber in die Hölle" (Die Ärzte) and "Der Weg" (Herbert Grönemeyer). We tried to match the genres and artists across the experimental conditions as much as possible. Because in the previous studies we found no differences between songs with English and German lyrics, in the following study we only used songs with German lyrics. Paired sample *t* tests revealed that the employed misogynous songs were perceived as more misogynous ($M = 5.39$, $SD = 2.95$) than were the men-hating ($M = 1.67$, $SD = 2.73$), $t(8) = 3.12$, $p = .01$, and neutral songs ($M = 1.06$, $SD = 1.72$), $t(8) = 3.97$, $p = .01$. Furthermore, men-hating songs ($M = 5.83$, $SD = 2.17$) were perceived as more men-hating than the misogynous ($M = 1.22$, $SD = 2.06$), $t(8) = -3.70$, $p = .01$, and neutral songs ($M = 0.83$, $SD = 1.66$), $t(8) = 4.79$, $p = .001$. Concerning arousal, no differences were observed between misogynous ($M = 4.28$, $SD = 1.44$) and men-hating songs ($M = 3.72$, $SD = 1.00$), $t(8) = 1.41$, $p = .20$, misogynous and neutral songs ($M = 3.64$, $SD = 1.62$), $t(8) = 2.23$, $p = .06$, or between men-hating and neutral songs, $t(8) = 0.19$, $p = .85$. Finally, with regard to eliciting positive feelings, no differences were observed between misogynous ($M = 4.06$, $SD = 1.65$) and men-hating songs ($M = 5.00$, $SD = 2.21$), $t(8) = -1.24$, $p = .25$, misogynous and neutral songs ($M = 4.28$, $SD = 1.20$), $t(8) = -0.42$, $p = .69$, or between men-hating and neutral songs, $t(8) = 0.93$, $p = .38$.

Procedure. As in the previous two studies, participants learned that the experiment was about how music affects performance of various tasks. After participants listened to the misogynous, men-hating, or neutral songs, they first worked on a word-completion task (which was labeled as an indicator of verbal intelligence). In context of this word-completion task, participants were given 18 word fragments with missing letters. They were instructed to complete the word. These words could be either completed aggression-related (e.g., gun) or not aggression-related (e.g., fun). The number of words completed as aggression-related was used as a dependent measure for aggressive cognitions. Previous research successfully employed word-completion tasks to measure psychological constructs such as mortality salience (e.g., Greenberg, Pyszczynski, Solomon, Simon, & Breus, 1994).

Next, specific cognitions about women and men (i.e., typical attributes of men and women) were measured with a free association task, as in Study 2. Participants were instructed to write down typical attributes of women and typical attributes of men (order was counterbalanced). Two independent raters who were blind to the experimental condition rated the participants' answers according to the two dimensions of positive (e.g., warm, reliable, etc.) and negative (e.g., unreliable, selfish, etc.). The independent raters had a high overlap of 96%. Disagreements were resolved by discussion. After this free recall measure, participants reported their positive and negative emotions by employing the PANAS (Watson, Clark, & Tellegen, 1988).

Finally, to measure aggressive behavior in an established way (cf. Pedersen, Gonzales, & Miller, 2000), participants were then told that the experiment was over. The experimenter only asked them to do a final favor: specifically, participants were informed that the experimenter needed their help to assign instructions to participants of a subsequent study. Moreover, they learned that the subsequent experiment addressed the suspected association between temperature and intellectual performance. Thus, participants of this subsequent experiment should keep their left hand in cold ice water while they worked on tasks concerning intellectual performance. Participants of the present study also were told that keeping the hand in ice water could be very painful, especially when this procedure lasted longer than 25 s. Furthermore, due to methodological issues, it was important that an unrelated person rather than the experimenter assign the time allotment. Therefore, participants of the present study were asked to assign the time for 2 subsequent participants to keep their hand in ice water. The name of these 2 participants was written on a sheet of paper, where one name was female and the other was male. Next to both

names, participants indicated how many seconds the person should keep her or his hand in ice water while working on the intellectual performance tasks² (order of presentation of these two names was varied). Afterward, participants were thoroughly debriefed about the aim of the study. Special attention was given to inform participants that they did not harm anybody in the context of the ice water task. We directly asked participants whether they experienced distress or any negative emotions. No participant reported distress or negative emotions.

Results and Discussion

Check for manipulation and interfering effects. Male participants ($M = 25.67$, $SD = 5.34$) were significantly older than female participants ($M = 22.70$, $SD = 4.68$), $F(1, 103) = 9.18$, $p = .003$, $\eta^2 = .08$. Age also was significantly associated with aggressive behavior toward women and men, $F(1, 98) = 5.17$, $p = .03$, $\eta^2 = .06$; age negatively correlated with the assignment of ice water to the male target person ($r = -.16$, $p = .09$) but was not associated with the assignment of ice water to the female target person ($r = .01$, $p = .95$). However, age was not confounded with experimental conditions; all reported effects remained significant ($p < .05$) if age was controlled for as a covariate. Further analyses revealed that age was not significantly associated with the word-completion task ($F < 1$, $p > .95$) or the reported typical attributes of men and women ($F < 1$, $p > .74$). Two participants had to be excluded due to suspicion of the experimental hypotheses.

Aggressive behavior (time assignment of ice water). Means and standard deviations are depicted in Table 4. A 3 (music genre) \times 2 (sex of participant) \times 2 (sex of target) ANOVA with repeated measures on the last factor revealed a significant three-way interaction, $F(2, 101) = 3.32$, $p = .05$, $\eta^2 = .06$. Planned contrasts revealed that men who listened to misogynous song lyrics assigned longer times of ice water treatment to the female target person than (a) women who listened to misogynous music, $t(99) = 3.81$, $p < .001$, and (b) men who listened to neutral and men-hating song lyrics, $t(99) = 2.45$, $p < .02$. Women who listened to men-hating music assigned longer times of ice water treatment to the male target person than did women who listened to neutral and misogynous music, $t(99) = 1.96$, $p = .05$, but did not differ from men who listened to men-hating music, $|t| < 1.25$. Post hoc analyses (Tukey) revealed that men who listened to men-hating music responded more aggressively toward the male target person than did women who listened to neutral music ($p < .02$). No further significant differences between the single experimental conditions occurred.

TABLE 4: Means (SDs) for Assigned Aggression ("Ice Water") to Female and Male Target Persons as a Function of Music Genre and Sex of Participant in Study 3

Song Lyrics/Sex of Participants	Sex of Confederate	
	Female	Male
Neutral/men	26.67 (16.31) <i>n</i> = 15	28.27 (14.83)
Neutral/women	24.39 (15.00) <i>n</i> = 18	25.50 (16.59)
Misogynous/men	51.12 (35.20) <i>n</i> = 17	40.00 (19.12)
Misogynous/women	21.00 (13.83) <i>n</i> = 19	24.32 (12.56)
Men-hating/men	41.00 (30.32) <i>n</i> = 19	52.95 (44.79)
Men-hating/women	32.94 (22.71) <i>n</i> = 17	39.41 (25.55)

Aggressive cognitions (word-completion task). A 3 (music genre) \times 2 (sex of participant) ANOVA revealed a significant two-way interaction between music genre and sex of participants, $F(1, 99) = 4.31$, $p < .03$, $\eta^2 = .08$. Planned contrasts revealed that men who listened to misogynous music reported more aggressive cognitions than (a) women who listened to misogynous music, $t(99) = 2.29$, $p < .025$, and (b) men who listened to neutral and men-hating music, $t(99) = 2.95$, $p < .01$. Moreover, women who listened to men-hating music reported more aggressive cognitions than (a) men who listened to men-hating music, $t(99) = 2.27$, $p < .03$, and (b) women who listened to neutral and misogynous music, $t(99) = 2.32$, $p < .03$. Post hoc tests (Tukey) revealed no further significant differences between the experimental conditions.

Reported typical female and male attributes. Cell means and standard deviations for reported positive and negative female and male attributes are shown in Table 5. As in Study 2, we used difference scores as dependent measures. A 3 (music genre) \times 2 (sex of participants) \times 2 (attribute difference for women vs. men) ANOVA with repeated measures on the last factor revealed a marginally significant three-way interaction between music genre, sex of participant, and reported attribute difference for women versus men, $F(2, 99) = 2.50$, $p < .09$, $\eta^2 = .05$. Planned contrasts revealed that men who listened to misogynous music did not report more negative attributes of women than (a) women who listened to misogynous music or (b) men who listened to neutral and men-hating music, all $|ts| < 1$. However, women who listened to men-hating music reported more negative attributes of men than (a) men who listened to men-hating music, $t(146) = -2.81$, $p < .01$, and (b) women who

TABLE 5: Means (SDs) for Aggressive Cognitions as a Function of Music Genre and Sex of Participant in Study 3

Song Lyrics	Sex of Participants	
	Female	Male
Neutral	1.00 (1.03) <i>n</i> = 18	0.67 (0.82) <i>n</i> = 15
Misogynous	1.11 (0.99) <i>n</i> = 19	2.24 (2.68) <i>n</i> = 17
Men-hating	2.06 (1.52) <i>n</i> = 17	1.21 (1.03) <i>n</i> = 19

listened to neutral and misogynous music, $t(146) = -3.85$, $p < .001$. Additional post hoc analyses (Tukey) revealed no further significant differences between the experimental conditions.

Positive and negative emotions. A 3 (music genre) \times 2 (sex of participant) \times 2 (type of emotion: positive vs. negative) ANOVA revealed a marginally significant interaction between type of emotion and music genre, $F(2, 99) = 2.37$, $p < .10$, $\eta^2 = .05$. Planned contrasts revealed that participants who listened to misogynous and men-hating music reported fewer positive emotions than did participants who listened to neutral music, $t(146) = -1.67$, $p < .099$. However, no interactions with sex of participants were found, all $|ts| < 1$. Post hoc tests (Tukey) revealed no further significant differences between the experimental conditions.

Song evaluations. A 3 (music genre) \times 2 (sex of participants) ANOVA was performed. The interaction between music genre and sex of participants was not significant, $F(2, 99) = 2.18$, $p = .12$, $\eta^2 = .04$. In addition, all main effects were not significant (all $F_s < 1.55$, all $ps > .21$). Further analyses (ANCOVA) revealed that evaluations of both songs had no impact on the dependent variables "assigned ice water" (all $F_s < 1$, all $ps > .51$) and vengeance (all $F_s < 1$, all $ps > .35$), aggressive cognitions (all $F_s < 2.23$, all $ps > .13$), and reported attributes (all $F_s < 1.54$, all $ps > .21$). All interactions reported above in context of the main analyses were still (marginally) significant (ice water: $p = .08$; aggressive cognitions: $p = .01$; reported attributes: $p = .10$) when song evaluations were controlled as covariates.

In summary, Study 3 mostly replicated the main findings of the previous two studies: After listening to misogynous song lyrics, male participants were increasingly prone to react aggressively toward women. This effect was clearly shown for aggressive behavior and aggressive cognitions. Furthermore, we found evidence that men-hating song lyrics could have a similar effect on aggressive reactions of women toward men: Listening to men-hating song lyrics substantially increased women's recognition of negative male attributes. No

gender-specific impact of sexual aggressive song lyrics was found for positive and negative emotions. This somewhat unexpected finding might be due to the fact that positive and negative emotions as measured by PANAS have no specific direction to an aggression target. Accordingly, future research should employ emotional aggression measures addressing more interpersonal emotions (e.g., the emotion of vengeance, which we measured in Study 2).

GENERAL DISCUSSION

Research on media violence has shown that aggressive music increases the accessibility of aggression-related cognitions, attitudes, and emotions. However, besides unspecific aggressive lyrics, aggressive music often contains misogynous and men-hating song lyrics. Because research on media aggression mainly neglected gender differences both in terms of examining the aggressive music stimulus and the reactions of the listeners, we investigated effects of aggressive misogynous and men-hating song lyrics on aggression-related thoughts, emotions, and behavior of male and female participants toward a confederate of the same or the opposite sex. First, in Study 1, participants were exposed to misogynous or neutral song lyrics. Male participants exposed to misogynous music administered more hot chili sauce to a female confederate than did women who listened to misogynous music and (marginally) men who listened to neutral music. Furthermore, men who listened to misogynous music also administered more hot chili sauce to the female rather than the male confederate. As expected, no differential effect of misogynous song lyrics on aggressive behavior was observed for female participants. To shed light on the underlying psychological processes and to generalize our previous findings, in Study 2, male and female participants were exposed to misogynous, men-hating, or neutral song lyrics. Male participants who listened to misogynous music reported more negative attributes of women than did women who listened to misogynous music and men who listened to neutral and men-hating music. Moreover, women who listened to men-hating music reported marginally more negative attributes of men than did men who listened to men-hating music. With regard to reported vengeance, only men were prone to be affected by misogynous music; no differential effects for vengeance and music genre were found for female participants. Finally, Study 3 replicated the findings of the previous two studies by employing additional measures of aggression and better-matched misogynous and men-hating songs. Specifically, men who listened to misogynous song lyrics assigned longer times of ice water treatment (a measure for aggressive behavior) to the female target person than did

women who listened to misogynous music and men who listened to neutral and men-hating song lyrics. Moreover, women who listened to men-hating music assigned longer times of ice water treatment to the male target than did women who listened to neutral and misogynous music. A similar pattern of results was found for reported aggressive cognitions.

*Implications, Limitations,
and Directions for Future Research*

Our results are mainly in line with predictions of the GAM (Anderson & Bushman, 2002) regarding how exposure to media violence affects internal cognitive and affective states. At the same time, our findings also extended the applicability of this model to the effects of sexually aggressive song lyrics on aggression between both sexes. Furthermore, our results support the assumption of Anderson, Carnagey, et al. (2003) that violent songs not only influence aggression-related variables but also directly affect actual aggressive behavior. In summary, with regard to the impact of misogynous song lyrics on aggressive responses of men toward women, the GAM provides a useful framework for investigating and illustrating the effects of sexually violent song lyrics on aggressive cognitions, emotions, and behavior. However, although our findings mainly supported the GAM, an exception was that women did not react aggressively to misogynous music and men did not react aggressively to men-hating music. Thus, at least some of the results reported in the present article failed to provide support for a cognitive association model of aggression (GAM). Accordingly, the relationship between priming and aggression-related cognitions, emotions, and behaviors might be more complex than articulated in recent models of media violence. Thus, further theorizing should integrate gender-specific effects of media violence into the framework of GAM.

An overview from Freedman (2002) concludes that research on media violence generally suffers from weak effects, which often result from dated stimulus material or low control over arousal evoked by the violent media stimulus. The present results suggest that the low effect sizes obtained by many previous media violence studies might stem from neglecting the impact of sex of media aggression recipient, sex of aggression target, and direction of sexually aggressive content of the violent media (i.e., whether aggressive media content is directed toward women or men). Our results, which indicated that men who listen to misogynous music do not react more aggressively toward male target persons and women who listen to men-hating music do not react more aggressively toward female target persons, support this explanation for the low effect sizes common in media violence research. Moreover, future studies might find

stronger effects when a priori influences (such as hostile personality, hostile home environments, or sexual promiscuity) suggested by current models of sexual aggression (e.g., Malamuth, Sockloskie, Koss, & Tanaka, 1991) are additionally considered in research designs.

It should be kept in mind that the comparison of misogynous, men-hating, and neutral nonviolent music differs in ways that might artifactually produce differences in aggression-related dependent variables. This issue addresses whether the obtained misogynous versus men-hating versus neutral song results were in fact due to systematic differences in specific music used rather than the different genres. In the present three studies, music characteristics of comparison songs were controlled in various ways. The misogynous, men-hating, and neutral songs were matched as much as possible by the same music style, artist, level of aggression, negativity, and arousal level. Moreover, several misogynous, men-hating, and neutral songs from different artists were used in our experiments. Across the studies, there were six different misogynous, four misandrist, and four neutral songs by different artists. Nevertheless, given the significant societal relevance of media violence effects, further investigation and generalization of this phenomenon is warranted.

Conclusion

Overall, the present research mainly focused on the impact of misogynous music on men's aggression toward women because this kind of aggression is a much more serious and frequent problem in society than female aggression toward men. Most important, our research showed that misogynous music increases aggressive responses of men toward women. As a consequence, music with misogynous lyrics should be considered as a potentially dangerous source that may elicit male sexual aggression. Male participants in our studies only listened to two different songs with misogynous lyrics and showed a considerable increase in aggression toward women. What can be said about this effect in real life, where men probably listen to hundreds of misogynous songs during their life span? The effect is likely to become even more pronounced and could probably lead to even more severe aggression against women, such as rape or other forms of aggressive assaults. If such a connection could be established in real life, misogynous song lyrics need to be considered in a more critical light than has so far been the case, and might even require censorship by law.

NOTES

1. For example, in one legal case, a cook was charged because he intentionally tried to harm two people by spicing their food with Tabasco sauce (*Arizona Daily Wildcat*, 1995, cited from McGregor et al., 1998).

2. Compared to the hot chili paradigm, this ice water paradigm has the advantage that participants also could react neutrally to a potential target of aggression. Because participants were told that the ice water allocations starts to become painful only after 25 s, they could react neutrally to the target person by assigning less than 25 s of ice water, which reduces potential experimenter demand.

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