Effects of songs with prosocial lyrics on prosocial thoughts, affect, and behavior

Tobias Greitemeyer

University of Sussex

Brighton, England

Author Note:

I am grateful to Colin Wayne Leach for suggestions on a previous draft of this manuscript.

Abstract

Previous research has shown that exposure to violent media increased aggression-related affect and thoughts, physiological arousal, and aggressive behavior as well as decreased prosocial tendencies. The present research examined the hypothesis that exposure to prosocial media promotes prosocial outcomes. Three studies revealed that listening to songs with prosocial (relative to neutral) lyrics increased the accessibility of prosocial thoughts, led to more interpersonal empathy, and fostered helping behavior. These results provide first evidence for the predictive validity of the General Learning Model (Buckley & Anderson, 2006) for the effects of media with prosocial content on prosocial thought, feeling, and behavior.

Key Words: prosocial behavior; music; media effects

Effects of songs with prosocial lyrics on prosocial thoughts, affect, and behavior

Exposure to media is omnipresent in people's daily life. For instance, listening to music—the topic of the present paper—is of substantial importance to many people: In Europe, according to Nielsen Interactive Entertainment, people spend an average of 10.55 hours per week listening to music. Similarly, the average American youth listens to music 1.5 to 2.5 hours per day, not including the time they are exposed to music via music videos (Roberts, Foehr, & Rideout, 2003). Other research (Rentfrow & Gosling, 2003) also revealed that people consider music an important aspect of their lives, which is at least as important as most other leisure activities. This has led to the suggestion that media exposure could be an important determinant of pro- (Mares & Woodard, 2005) and antisocial behavior (Robinson, Wilde, Navracruz, Haydel, & Varady, 2001). However, whereas negative effects of exposure to media with violent content on aggressive behavior are well-documented, research on the effects of media with prosocial content on prosocial tendencies has been relatively sparse. Thus, in the present research, the hypothesis is examined that exposure to songs with prosocial lyrics increases prosocial thoughts, affect, and behavior. So far, this has not been tested.

Research on Media Violence

It is well-documented that exposure to violent media promotes aggressive thoughts, feelings, and behavior, and decreases prosocial behavior (for an overview, see Bushman & Huesmann, 2006). For instance, correlational evidence indicated that consumers of rap and heavy metal music reported more hostile attitudes (Rubin, West, & Mitchell, 2001). Experimental studies corroborated this finding: Listening to aggressive (relative to neutral) song lyrics increased aggressive thoughts, hostile feelings (Anderson, Carnagey, & Eubanks, 2003), and aggressive action (Fischer & Greitemeyer, 2006; Hansen & Hansen, 1990).

Past research has also addressed the impact of violent video games on aggressive cognitions, affect, and behavior. For instance, playing a violent (relative to a neutral) video game increases the hostile expectation bias (Bushman & Anderson, 2002), state hostility and anxiety levels (Anderson & Ford, 1986), desensitization to violence (Bartholow, Bushman, & Sestir, 2006; Carnagey, Anderson, & Bushman, 2007), punitive behavior (Bartholow & Anderson, 2002), physical violence (Gentile et al., 2004), and criminal actions (Anderson & Dill, 2000), and decreases donations to a charity (Chambers & Ascione, 1987) and cooperative behavior (Sheese & Graziano, 2005). Recent longitudinal evidence (Anderson, Gentile, & Buckley, 2007) further revealed that exposure to violent video games had not only short-term effects, but also long-term consequences in that aggressive tendencies were significantly predicted by video game violence exposure five months earlier (even after controlling for Time 1 aggressive tendencies). In sum, the detrimental effects of exposure to violent media on aggression-related variables are well-documented.

Research on the Effects of Television on Prosocial Behavior

There is some indirect evidence for the possibility that exposure to prosocial songs increases prosocial tendencies: it has been shown that exposure to television with prosocial content has some positive effects. In an early study (Sprafkin, Liebert, & Poulos, 1975), children were exposed to a film about the dog Lassie. In the prosocial condition, Lassie saved her puppies by barking for help. In the control condition, no prosocial behavior was exhibited. Results revealed that children in the prosocial condition were more likely to help a puppy in need of help than children in the control condition. Two meta-analyses (Hearold, 1986; Mares & Woodard, 2005) corroborated this finding: Exposure to prosocial television content has beneficial effects on prosocial behavior.

Theoretical Perspectives

The effects of violent media on aggression-related variables have been mainly

explained by the General Aggression Model (GAM) proposed by Anderson and colleagues (e.g., Anderson & Bushman, 2002). This model integrates various theories, including social learning theory and related social-cognitive research, affective aggression model, social information-processing model, script theory, and excitation transfer model. According to the GAM, exposure to violent media activates an individual's internal states (cognition, affect, and arousal), which in turn change the interpretation of a potential conflict situation that results in aggressive behavior. The initial impulse to violent media is based on an automatic appraisal of the situation. However, when sufficient resources (e.g., cognitive capacity, motivation) are available a more thoughtful behavioral reaction could also occur. In addition, the model does not only account for short term effects of violent media exposure on aggression, but also for long term changes as a results of repeated encounters with violent media (i.e., each media exposure episode constitutes a learning trial).

Recently, this model has been expanded into a General Learning Model (GLM) to explain the effects of both violent *and non-violent* media on social behavior (Buckley & Anderson, 2006). As with the GAM, the GLM assumes that media exposure affects internal variables, consisting of cognition, affect, and arousal, which lead to behavior. However, rather than focusing only on the negative consequences of exposure to antisocial media, the GLM suggests that positive media can have positive effects. Thus, depending on the content of the media, either negative or positive effects of media exposure on social behavior are to be expected. That is, whereas antisocial media instigate aggression and aggression-related variables, prosocial media should foster prosocial outcomes. However, whereas many studies have documented the influence of violent media exposure on aggression and aggression-related variables, the effects of media with prosocial content on prosocial outcomes has not been examined. Thus, the predictive validity of the GLM for prosocial effects of media has not been tested.

The Present Research

For this reason, the present research examined positive effects of exposure to prosocial songs. The first two studies measured prosocial thoughts and affects, which are possible precursors, as outlined by GLM, of prosocial action. Specifically, the hypothesis was tested that listening to prosocial (relative to neutral) songs increased the accessibility of prosocial thoughts (Experiment 1) and led to more interpersonal empathy (Experiment 2). Finally, Experiment 3 addressed behavioral outcomes from listening to songs with prosocial content in that actual helping behavior was assessed.

Pilot testing

In all experiments, participants listened to two songs. To increase the ecological validity of the experimental manipulation, one song with English lyrics and one song with German lyrics were used. Artists and genres were matched across experimental conditions. Participants in the prosocial condition were exposed to: “Love generation” (Bob Sinclair) and “Kommt zusammen” (2raumwohnung). Participants in the neutral condition were exposed to: “Rock this party” (Bob Sinclair) and “Lachen und Weinen” (2raumwohnung).

These songs were pretested in two pilot studies. Participants were from the same participant pool as in the three main experiments. In both pilot studies, participants listened to either the two prosocial or the two neutral songs. In the first pretest, there were 40 participants (28 women, 12 men). After listening of each song, they rated to what extent the song lyrics were prosocial, how much they liked the song, and to what extent the song was arousing. All items were assessed on scales from 0 = *not at all* to 7 = *definitely*. As intended, the content of the prosocial songs was perceived as being more prosocial (English song: $M = 4.85$, $SD = 1.46$; German song: $M = 4.20$, $SD = 1.88$) than the content of the neutral songs (English song: $M = 2.55$, $SD = 1.73$; German song: $M = 0.65$, $SD = 0.81$), $t(38) = 4.54$, $p < .001$, $d = 1.44$; $t(38) = 7.75$, $p < .001$, $d = 2.45$, respectively. In contrast, there were no significant differences

with regard to liking (prosocial English song: $M = 3.00$, $SD = 2.18$; neutral English song: $M = 3.10$, $SD = 1.80$; $t(38) = 0.16$, $p = .88$, $d = 0.05$; prosocial German song: $M = 2.40$, $SD = 2.35$; neutral German song: $M = 3.15$, $SD = 1.84$; $t(38) = 1.12$, $p = .27$, $d = 0.36$) and arousal (prosocial English song: $M = 3.20$, $SD = 1.74$; neutral English song: $M = 3.00$, $SD = 1.86$; $t(38) = 0.35$, $p = .73$, $d = 0.11$; prosocial German song: $M = 1.60$, $SD = 2.21$; neutral German song: $M = 2.75$, $SD = 1.89$; $t(38) = 1.77$, $p = .09$, $d = 0.56$).

In the second pretest (39 women, 11 men), perceived arousal and mood were assessed. The Perceived Arousal Scale (Anderson, Deuser, & DeNeve, 1995) contains 31 adjectives describing feelings of arousal (e.g., *aroused*) or lack of arousal (e.g., *drowsy*). Lack of arousal items were reverse scored. Positive and negative emotions were assessed by employing the PANAS (Watson, Clark, & Tellegen, 1988). Arousal properties of the prosocial ($M = 2.88$, $SD = 0.74$) and neutral songs ($M = 3.03$, $SD = 0.79$) were relatively similar, $t(48) = 0.71$, $p = .48$, $d = 0.20$. In addition, there were no significant effects for mood, neither on the positive affect scale (prosocial: $M = 2.36$, $SD = 0.75$, neutral: $M = 2.12$, $SD = 0.77$), $t(48) = 1.08$, $p = .29$, $d = 0.32$, nor on the negative affect scale (prosocial: $M = 1.40$, $SD = 0.38$, neutral: $M = 1.48$, $SD = 0.50$), $t(48) = 0.60$, $p = .55$, $d = 0.18$. Thus, because the arousal and mood properties of the songs used were relatively similar, effects of the songs on prosocial thoughts, feelings, and behavior cannot be attributed to mood and arousal differences. (With was aimed for: inasmuch as both prosocial and neutral songs can affect arousal, the arousal route is scientifically less interesting than the cognitive and the affective route, respectively.)

Experiment 1

The aim of Experiment 1 was to test the effect of prosocial songs on prosocial thoughts. It was expected that listening to prosocial (relative to neutral) songs would increase the accessibility of prosocial thoughts.

Method

Participants and design. Participants were 34 students (19 women, 11 men, four participants did not indicate their sex) of the Ludwig-Maximilians University (LMU) in Munich, Germany, who were randomly assigned to one of the two song conditions (prosocial vs. neutral). There were 18 participants in the prosocial condition and 16 participants in the neutral condition.

Procedure and materials. Participants were welcomed by one female experimenter and learned that the purpose of the present study was to examine the impact of songs on thinking. To assess prosocial thought accessibility, a word completion task was used. Such a task has been successfully employed in previous research into the effects of violent media on aggressive thoughts (e.g., Anderson et al., 2003; Barlett, Harris, & Bruey, 2008).[1] Participants received a list of 18 word fragments. Their task was to fill in the missing letters to form a word. For instance, "hi___" can become the prosocial word "hilfe" ("help") or the neutral word "hier" ("here"). Accessibility of prosocial thoughts was the proportion of word completions that were prosocial (that is, number of prosocial thoughts divided by the total number of word fragments completed).

Then, participants responded to two control questions to verify that the prosocial and the neutral songs differed in content. For each song, participants rated to what extent the song lyrics were about helping and cooperation, respectively. These ratings were highly correlated and thus combined to a prosocial index (English song: $\alpha = .75$; German song: $\alpha = .82$). Finally, participants answered demographic questions, were thanked, and fully debriefed. Participants were tested in small groups of three to four people.

Results and Discussion

As intended, the content of the prosocial and the neutral songs clearly differed. The content of the prosocial songs was perceived as being more prosocial (English song: $M = 4.94$, $SD = 1.47$; German song: $M = 4.50$, $SD = 1.29$) than the content of the neutral songs

(English song: $M = 2.56$, $SD = 1.54$; German song: $M = 2.00$, $SD = 1.57$), $t(32) = 4.61$, $p < .001$, $d = 1.58$; $t(32) = 5.09$, $p < .001$, $d = 1.74$, respectively.

The effect of type of song on prosocial thought accessibility was reliable: Participants who had listened to the prosocial songs ($M = 0.21$, $SD = 0.11$) had higher prosocial word completion scores than those who had listened to the neutral songs ($M = 0.14$, $SD = 0.08$), $t(32) = 2.05$, $p < .05$, $d = 0.73$. Participant sex had no significant effect on prosocial thought accessibility, $t(28) = 0.49$, $p = .63$, $d = 0.19$.

As expected, listening to songs with prosocial content increased the accessibility of prosocial thoughts. Thus, these results provide first evidence for the hypothesis that exposure to prosocial media affects an individual's internal state that, as outlined by GLM, may instigate behavioral reactions. Before data on the effects of exposure to prosocial songs on helping behavior are presented, I first address a second main route on how media exposure may affect behavior: empathy as an indicator of affect. This was done in Experiment 2.

Experiment 2

Experiment 2 tested an important contributor to prosocial behavior, namely, empathy (Batson, 1991). It was expected that listening to prosocial (relative to neutral) songs would increase empathy toward others in need.

Method

Participants and design. Participants were 38 students (27 women, 11 men) of the LMU. There were 18 participants in the prosocial condition and 20 participants in the neutral condition.

Procedure and materials. As in Experiment 1, participants were welcomed by a female experimenter. They learned that they would take part in a marketing survey. After listening to each song, participants indicated their liking of the song. Participants then learned that another study was being conducted in which participants were asked to read essays from

other participants. Because the participant who was supposed to read the essays did not show up for the study, the participant was asked to read and respond to two essays (adapted from DeWall & Baumeister, 2006). The first essay stated that the author broke up with his girlfriend, although they had been together for quite a long time and had been very close. Recently, however, things had changed and she told him that she did not want to be tied down to just one person. The author stated that he was suffering severely. In the second essay, the author noted that he broke his leg during an intramural game. He had played for this team for three years, but now this season is over for him. In addition to this mental pain, his injury physically hurts. Life on campus is very difficult because of his crutches. He is really down and this is all he thinks about. Directly after each essay, participants indicated how sympathetic, compassionate, and soft-hearted they felt toward the author of the essay (see Maner & Gailliot, 2007). These items were highly correlated and thus pooled in an empathy scale (romantic relationship: $\alpha = .75$; broken leg: $\alpha = .72$).

As in Experiment 1, participants rated to what extent the song lyrics were about helping and cooperation, respectively. These ratings were moderately correlated and thus combined to a prosocial index (English song: $\alpha = .55$; German song: $\alpha = .68$). Finally, participants answered demographic questions, were thanked, and fully debriefed. All participants were tested individually.

Results and Discussion

As in Experiment 1, the content of the prosocial songs was perceived as being more prosocial (English song: $M = 4.22$, $SD = 1.32$; German song: $M = 4.28$, $SD = 1.77$) than the content of the neutral songs (English song: $M = 2.70$, $SD = 1.51$; German song: $M = 1.70$, $SD = 1.37$), $t(36) = 3.30$, $p < .01$, $d = 1.07$; $t(36) = 5.05$, $p < .001$, $d = 1.63$, respectively.

As expected, listening to prosocial songs increased empathy toward others in need. A 2 (type of song) X 2 (essay: romantic vs. broken leg) ANOVA with repeated measures on the

latter factor revealed a significant main effect for type of song, $F(1, 36) = 6.51$, $p < .05$, $\eta^2 = .15$. Participants who had listened to the prosocial songs (weighted $M = 7.05$) felt more empathy than those who had listened to the neutral songs (weighted $M = 5.78$). The interaction was not significant, $F(1, 36) = 0.22$, $p = .64$, $\eta^2 = .01$. Finally, participant sex had no significant effect on empathy, $F(1, 36) = 1.11$, $p = .30$, $\eta^2 = .03$.

Liking of songs did not differ among experimental conditions. In addition, when controlling for liking, the effect for type of song on empathy remained significant, $F(1, 34) = 6.14$, $p < .05$, $\eta^2 = .15$.

To summarize, Experiment 2 revealed that exposure to songs with prosocial lyrics fostered interpersonal empathy. In concert with Experiment 1, findings of Experiment 2 suggest that exposure to prosocial media activates two of the main routes (cognition and affect) proposed by GLM on how media exposure influences behavior.

Experiment 3

After Experiments 1 and 2 have shown that exposure to songs with prosocial content affects cognition and affect that, as outlined by GLM, may instigate behavioral reactions, Experiment 3 examines whether listening to prosocial songs indeed affects prosocial action. It was expected that listening to prosocial (relative to neutral) songs would foster prosocial behavior.

Method

Participants and design. Participants were 90 students (55 women, 35 men) of the LMU. They received 2 € (approximately $3.20) for their participation. There were 45 participants in the prosocial condition and 45 participants in the neutral condition.

Procedure and materials. At the onset, participants were welcomed by two female experimenters and learned that they would participate in a marketing survey on music preferences. Then, the second experimenter left the room, and the participants listened to the

songs. After listening to the songs, the first experimenter left the room, and the second experimenter, who was unaware of the participant's experimental condition, reentered the room. She gave the participants the 2 €, and explained that the university was collecting donations for a non-profit organization. Participants were told that it would be great if they would donate these 2 € but that it would be also fine if they did not donate. Upon saying this, the experimenter pointed at a box on which the non-profit organization's information was printed. The experimenter left the room for 2 min and then returned. Finally, participants were probed for suspicion, debriefed, and thanked. None of the participants indicated any relatedness among listening to the songs and the donation to the non-profit organization. The money was indeed donated to the non-profit organization.

Note that—because measurement of the possible mediators may prime the concept for all participants and thus change subsequent measures of pro- and antisocial action—prosocial behavior was assessed, but no possible mediators (see Spencer, Zanna, & Fong, 2005). In fact, previous research into the effects of violent video games (e.g., Lindsay & Anderson, 2000) has shown that measuring aggressive cognitions changes subsequent measures of aggressive behavior.

Results and Discussion

As predicted, participants who had listened to the prosocial songs were more likely to donate money than participants who had listened to the neutral songs, $\chi^2(1, N = 90) = 4.56$, $p < .05$, $w = .27$. Of the 45 participants who had listened to the prosocial songs, 24 donated. Of the 45 participants who had listened to the neutral songs, 14 donated. That is, 53% of the prosocial song condition helped, whereas 31% in the neutral song game condition did so. Participant sex had no significant effect on donating, $\chi^2(1, N = 90) = 0.12$, $p = .73$.

In summary, listening to songs with prosocial lyrics increased helping behavior. Thus, after Experiments 1 and 2 have shown that prosocial songs influence cognition and affect,

which—according to GLM—are two of the main routes on how media exposure leads to behavior, Experiment 3 in fact revealed that exposure to prosocial media promoted prosocial reactions. However, because prosocial behavior and the possible mediators were assessed in different studies, it remains unclear whether accessibility of prosocial thoughts and/or interpersonal empathy indeed constitute the mediating path from media exposure to action. In the present research, I wanted to provide first evidence for the effects of listening to prosocial songs on prosocial cognitions, affects, and behaviors. Clarifying the exact causal mechanisms awaits future research.

General Discussion

The aim of the present research was to examine the hypothesis that exposure to prosocial media fosters prosocial tendencies. In fact, listening to prosocial (relative to neutral) songs increased the accessibility of prosocial thoughts, led to more empathy, and instigated prosocial action. Whereas previous research has demonstrated that violent media increased aggression-related thoughts, feeling, and behavior (Bushman & Huesmann, 2006), the present research shows that media with prosocial content result in prosocial tendencies. Thus, media exposure affects social behavior and related variables not only negatively, but may also do so positively (see Greitemeyer & Osswald, 2007, for the effects of prosocial video games on prosocial behavior). Note also that across studies the effect for song exposure on thoughts, feeling, and behavior was medium to large.

Theoretical Implications, Limitations, and Future Research

As noted above, using the GAM as a framework, there has been abundant research demonstrating detrimental consequences of exposure to violent media on aggression-related variables. To also account for positive effects of media exposure, this model has been expanded into the GLM (Buckley & Anderson, 2006), but, as yet, the predictive validity of the GLM for the effects of exposure to prosocial media on prosocial tendencies has not been

tested. Thus, the present studies constitute the first empirical evidence that the effects of media exposure on social tendencies indeed depend to a great extent on the content of the media being consumed.

As proposed by GLM, the present set of studies showed that listening to songs with prosocial lyrics affected behavioral reactions as well as an individual's internal states (cognition and affect) that are assumed to elicit behavior. However, as noted above, the present research did not address whether exposure to prosocial media indeed led to behavioral reactions through these internal states. Thus, future research assessing internal states as well as behavioral reactions in one study would be informative in this regard. Nevertheless, based on the present results, it appears that the aim of GLM to bring the effects of media exposure on pro- and antisocial tendencies together within a common theoretical framework is not only a valuable endeavor, but is also supported by empirical evidence.

Previous research has demonstrated that violent media increased aggression and decreased prosocial behavior (Anderson & Bushman, 2001). Here, evidence was presented that listening to prosocial songs increased prosocial behavior. Thus, future research may examine whether exposure to prosocial songs does not only increase prosocial tendencies, but also decreases aggression and aggression-related variables.

The reader should be well aware that the present results are limited to the short-term: the effects of listening to prosocial songs on immediate thoughts, affects, and behaviors were examined. However, repeated exposure to media may affect long-term behavior (Huesmann & Miller, 1994). According to GLM, repeated encounters with prosocial media may yield long term changes in personality through the development and construction of knowledge structures. In addition, the present results materialized even though participants listened to only two songs. In real life, when people may repeatedly listen to prosocial songs, the positive effects on prosocial behavior might be even more pronounced. Thus, the media does not only

increase the likelihood of aggressive and violent behavior, but could be also effectively used to improve social interactions.

References

Anderson, C. A., & Bushman, B. J. (2001). Effects of violent video games on aggressive behavior, aggressive cognition, aggressive affect, physiological arousal, and prosocial behavior: A meta-analytic review of the scientific literature. *Psychological Science*, *12*, 353–359.

Anderson, C. A., & Bushman, B. J. (2002). Human aggression. *Annual Review of Psychology*, 53*,* 27-51.

Anderson, C. A., Carnagey, N. L., & Eubanks, J. (2003). Exposure to violent media: The effects of songs with violent lyrics on aggressive thoughts and feelings. *Journal of Personality and Social Psychology, 84*, 960–971.

Anderson, C. A., & Dill, K. E. (2000). Video games and aggressive thoughts, feelings, and behavior in the laboratory and in life. *Journal of Personality and Social Psychology*, *78*, 772–790.

Anderson, C. A., & Ford, C. M. (1986). Affect of the game player: Short term effects of highly and mildly aggressive video games. *Personality and Social Psychology Bulletin*, *12*, 390–402.

Anderson, C. A., Gentile, D. A., & Buckley, K. E. (2007). *Violent video game effects on children and adolescents: Theory, research, and public policy.* New York: Oxford University Press.

Anderson, C. A, Deuser, W. E., DeNeve, K. (1995). Hot temperatures, hostile affect, hostile cognition, and arousal: Tests of a general model of affective aggression. *Personality and Social Psychology Bulletin, 21,* 434-448.

Bartholow, B. D., & Anderson, C. A. (2002). Effects of violent video games on aggressive behavior. *Journal of Experimental Social Psychology,38,* 283-290.

Bartholow, B. D., Bushman, B. J., & Sestir, M. A. (2006). Chronic violent video game

exposure and desensitization to violence: Behavioral and event-related brain potential data. *Journal of Experimental Social Psychology, 42,* 532-539.

Barlett, C. P., Harris, R. J., & Bruey, C. (2008). The effect of the amount of blood in a violent video game on aggression, hostility, and arousal. *Journal of Experimental Social Psychology, 44,* 539-546.

Batson, C. D. (1991). *The altruism question: Towards a social-psychological answer.* Hillsdale, NJ: Erlbaum.

Buckley, K. E., & Anderson, C. A. (2006). A theoretical model of the effects and consequences of playing video games. In P. Vorderer & J. Bryant (Eds.), *Playing video games: Motives, responses, and consequences* (pp. 363-378). Mahwah, NJ: Lawrence Erlbaum Associates.

Bushman, B. J., & Anderson, C. A. (2002). Violent video games and hostile expectations: A test of the general aggression model. *Personality and Social Psychology Bulletin*, *28*, 1679–1686.

Bushman, B. J., & Huesmann, L. R. (2006). Short-term and long-term effects of violent media on aggression in children and adults. *Archives of Pediatrics and Adolescent Medicine*, *160*, 348–352.

Carnagey, N. L., Anderson, C. A., & Bushman, B. J. (2007). The effect of video game violence on physiological desensitization to real-life violence. *Journal of Experimental Social Psychology, 43,* 489-496.

Chambers, J. H., & Ascione, F. R. (1987). The effects of prosocial and aggressive video games on children's donating and helping. *Journal of Genetic Psychology*, *148*, 499–505.

DeWall, C. N., & Baumeister, R. F. (2006). Alone but feeling no pain: Effects of social exclusion on physical pain tolerance and pain threshold, affective forecasting, and

interpersonal empathy. *Journal of Personality and Social Psychology, 91*, 1-15.

Fischer, P., & Greitemeyer, T. (2006). Music and aggression. The impact of sexual-aggressive song lyrics on aggression-related thoughts, emotions and behavior toward the same and the opposite sex. *Personality and Social Psychology Bulletin. 32*, 1165–1176.

Greitemeyer, T., & Osswald, S. (2007). *Effects of prosocial video games on prosocial behavior.* Manuscript submitted for publication.

Hansen, C. H., & Hansen, R. D. (1990). The influence of sex and violence on the appeal of rock music videos. *Communication Research, 17,* 212-234.

Hearold, S. (1986). A synthesis of 1043 effects of television on social behavior. In G. Comstock (Ed.), *Public communication of behavior* (pp. 65-133). San Diego, CA: Academic Press.

Huesmann, L. R., & Miller, L. S. (1994). Long-term effects of repeated exposure to media violence in childhood. In L. R. Huesmann (Ed.), *Aggressive behavior: Current perspectives* (pp. 153-186). New York: Plenum Press.

Lindsay, J. L., & Anderson, C. A. (2000). From antecedent conditions to violent actions: A general affective aggression model. *Personality and Social Psychology Bulletin, 26,* 533-547.

Maner, J. K., & Gailliot, M. (2007). Altruism and egoism: Prosocial motivations for helping depend on relationship context. *European Journal of Social Psychology, 37,* 347-358.

Mares, M. L., & Woodard, E. (2005). Positive effects of television on children's social interactions: A meta-analysis. *Media Psychology*, *7*, 301–322.

Rentfrow, P. J., & Gosling, S. D. (2003). The do re mi's of everyday life: The structure and personality correlates of music preferences. *Journal of Personality and Social Psychology, 84,* 1236-1256.

Roberts, D. F., Foehr, U. G., & Rideout, V. (2003). *Generation M: Media in the lives of 8–18 Year-Olds*. Menlo Park, CA: Henry J Kaiser Foundation.

Robinson, T. N., Wilde, M. L., Navracruz, L. C., Haydel, K. F., & Varady, A. (2001). Effects of reducing children's television and video game use on aggressive behavior: A randomized controlled trial. *Archives Pediatrics and Adolescent Medicine, 155,* 17-23.

Rubin, A. M., West, D. V., & Mitchell, W. S. (2001). Differences in aggression, attitudes toward women, and distrust as reflected in popular music preferences. *Media Psychology, 3,* 25-42.

Sheese, B. E., & Graziano, W. G. (2005). Deciding to defect. The effects of video-game violence on cooperative behavior. *Psychological Science*, *16*, 354–357.

Spencer, S. J., Zanna, M. P., & Fong, G. T. (2005). Establishing a causal chain: Why experiments are often more effective than mediational analyses in examining psychological processes. *Journal of Personality and Social Psychology, 89*, 845-851.

Sprafkin, J. N., Liebert, R. M., & Poulos, R. W. (1975). Effects of a prosocial televised example on children's helping. *Journal of Experimental Child Psychology*, *20*, 119–126.

Watson, D., Clark, L. A., & Tellegen, A. (1988). Development and validation of brief measures of positive and negative affect: The PANAS scales. *Journal of Personality and Social Psychology*, *54*, 1063–1070.

Foot Note

1 The use of the word completion task may raise concerns about suspicion and demand characteristics. Thus, although during debriefing none of the participants indicated awareness of the true purpose of the experiment, future research using thought accessibility tasks that do not require conscious expression of remembering (such as a reading reaction time task or a lexical decision task) and are thus not as easily affected by demand characteristics as direct memory tasks would be of interest.