

# Effects of Prosocial Media on Social Behavior: When and Why Does Media Exposure Affect Helping and Aggression?

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## Abstract

Helping and aggression are core topics in social psychology. So far, abundant evidence that violent media decreases helping and increases aggression has been collected. However, recent theoretical and empirical work has demonstrated that the media may also increase prosocial outcomes and decrease antisocial outcomes. In fact, exposure to media with prosocial content increases the accessibility of prosocial thoughts, empathy, and helping behavior and decreases aggression and aggression-related cognition and affect. The present article reviews this research and provides an overview of when and why media exposure instigates helping and reduces aggression.

## Keywords

prosocial media, helping, aggression, media violence

It is often complained that psychology focuses on negative experiences and neglects aspects of human experience that make life worth living (Seligman & Csikszentmihalyi, 2000). The field of media research is a good example. Hundreds of studies document that consumption of violent media is associated with increased aggressive cognition, affect, and behavior and with decreased prosocial outcomes (for recent meta-analyses, see Anderson et al., 2010; Bushman & Huesman, 2006). Moreover, the processes underlying the effects of violent media on behavioral reactions are well understood (Anderson & Dill, 2000; Greitemeyer & McLatchie, 2011). In contrast, much less consideration has been devoted to possible positive effects of media exposure. Some early research has documented that television with prosocial content reduces aggression and increases altruism in children (for a review, see Mares & Woodard, 2005). What is striking, however, is that whereas media research in general has been flourishing, prosocial media research was almost nonexistent for quite some time. For instance, the just-mentioned meta-analysis by Mares and Woodard did not include a single study that was published after 1989. Moreover, research on prosocial television programming did not address *why* media exposure is related to behavior. Recently, however, some empirical evidence has been provided that not only reveals to what extent other forms of prosocial media exposure are associated with behavioral outcomes but also addresses what variables constitute the mediating path from media exposure to action. In what follows, I discuss a theoretical model and findings of recent

empirical investigations that highlight the importance of the content of the media being exposed for how media exposure affects prosocial and antisocial outcomes.

## General Learning Model (GLM)

The GLM (and its predecessor, the general aggression model) is a model of social behavior that has been applied to account for when and why media exposure elicits behavioral responses (Buckley & Anderson, 2006; Gentile et al., 2009). According to this model, person variables (such as sex) and situation variables (such as media exposure) may independently and sometimes interactively affect a person's internal state, consisting of cognition, affect, and arousal that are related to the media content. This internal state affects how events are perceived and interpreted, which in turn influence behavioral responses. According to the GLM, depending on the content of the media exposed, either negative or positive effects of media exposure on social behavior are to be expected. Whereas exposure to violent media is assumed to increase antisocial outcomes and decrease prosocial outcomes, exposure to prosocial media is assumed to increase prosocial outcomes and decrease antisocial outcomes. Moreover, the model suggests that repeated

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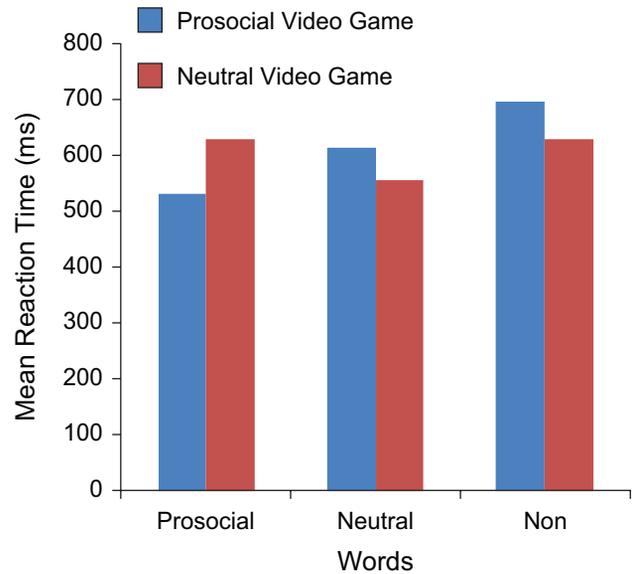
encounters with media exposure may yield long-term changes in personality through the development and construction of new knowledge structures.

Based on the GLM as a theoretical framework, recent research has studied when, why, and for whom exposure to video games with prosocial content and music with prosocial lyrics is associated with social behavior. Inasmuch as both prosocial and neutral media can affect arousal, the arousal route is arguably scientifically less interesting than the two other routes. Therefore, in most prosocial media studies, the media in the experimental conditions have been matched on arousal properties, and tests of the underlying mechanisms have focused on the cognitive and the affective route of the GLM.

### Effects of Video Games With Prosocial Content

The effects of playing video games with prosocial content (in which the predominant goal is to benefit another game character) on prosocial and antisocial outcomes have been documented in a series of empirical investigations. Gentile and colleagues (2009) provided correlational, longitudinal, and experimental tests of the hypothesis that playing prosocial video games is related to prosocial behavior. In a first correlational study, Gentile and colleagues (2009) found that prosocial video game exposure was significantly associated with helping behavior, cooperation and sharing, and empathy. Two longitudinal samples further revealed that prosocial video game exposure significantly predicted prosocial behavior 3 to 4 months later, even after controlling for prosocial behavior at Time 1. Finally, an experimental study showed that prosocial (relative to neutral) video game exposure increased helping and tended to decrease aggression. However, inasmuch as helping and aggression scores were dependent, it is not entirely clear whether this study addressed the effects of video game exposure on prosocial and/or aggressive behavior. Moreover, Gentile and colleagues did not directly test the psychological mechanism by which playing prosocial video games increases prosocial behavior.

These issues were addressed by Greitemeyer and Osswald (2010). In four studies, participants were randomly assigned to one of two experimental conditions: prosocial video game exposure or neutral video game exposure. For instance, participants in the prosocial video game condition played *Lemmings*, a game in which the player guides groups of small beings (“lemmings”) through different worlds. The goal is to take care of the lemmings and to save them by leading them to the exit. In the neutral video game condition, participants played *Tetris*, a game in which falling geometrical figures must be correctly positioned. Afterward, different helping measures were assessed. In one study, participants watched as a female experimenter was harassed by a male confederate who was instructed to play the role of her ex-boyfriend. The confederate shouted at the experimenter, kicked a trash can, and pulled her arm to force her to leave the room with him. It



**Fig. 1.** Mean reaction times as a function of video game condition (prosocial or neutral) and type of word (prosocial, neutral, or nonwords; Greitemeyer & Osswald, 2011).

was recorded whether the participant intervened or not. More than half of the participants who had played the prosocial video game intervened, whereas only about one fifth of the participants in the neutral video game condition did so. Note that the video games employed in these studies were relatively old. Modern, graphically sophisticated games may be more involving and thus should even affect helping behavior to a greater extent.

With regard to the underlying mechanism, it appears that the increased accessibility of prosocial thoughts accounts for the effect of prosocial video game exposure on prosocial behavior. In one study (Greitemeyer & Osswald, 2011), after either prosocial or neutral video game exposure, participants performed a lexical decision task. In such tasks, the associative strength between concepts in semantic memory is measured. If two concepts are closely related, they should produce faster reaction times (relative to two concepts that are less closely related). On a computer screen, either a word or a nonword appeared and the task of the participant was to decide as fast as possible whether this letter string was an existing word or not (by pushing one of two buttons). There were 32 trials, with 16 words and 16 nonwords. Of the 16 words, 8 were prosocial words (e.g., “help”) and 8 were words without prosocial content (e.g., “run”). As predicted, participants who had played a prosocial video game responded faster to prosocial words than did participants who had played a neutral video game. In contrast, reaction times to neutral words or nonwords did not differ (see Fig. 1). A further study (Greitemeyer & Osswald, 2010) revealed that the accessibility of prosocial thoughts indeed underlies the effect of video game exposure on helping behavior.

Playing prosocial video games is also (negatively) related to the accessibility of aggressive cognitions. In one study

(Greitemeyer & Osswald, 2009), after participants had played either a prosocial or a neutral video game, they completed three ambiguous story stems (e.g., one made an appointment with a friend to watch a movie, but the friend was late without apologizing). Participants were asked to list 20 things what the main character will do or say, think, and feel as the story continues (Bushman & Anderson, 2002). Coding of the number of aggressive behaviors, thoughts, and feelings revealed that participants who had played the prosocial video game were less likely to expect the character to say or do something aggressive, to have aggressive thoughts, and to feel angry.

Prosocial video game exposure affects not only the cognitive route of the GLM but also the affective route. Greitemeyer, Osswald, and Brauer (2010) tested the hypothesis that playing a prosocial video game increases prosocial affect (empathy) and decreases antisocial affect (schadenfreude). In one study, empathy was assessed by asking participants how sympathetic they felt toward another individual who had separated from his girlfriend and was suffering from his predicament. To assess schadenfreude (pleasure at another's misfortune), we measured the extent to which participants felt pleasure at the misfortune of Paris Hilton, who had to go to jail because she drove through Hollywood at high speed and without lights and no driver's license. As predicted, playing a prosocial (relative to a neutral) video game increased empathy and decreased reported schadenfreude. Inasmuch as empathy and schadenfreude were only weakly negatively related, it appears that schadenfreude is not simply the mirror image of empathy, and playing a prosocial video game seems to have distinct effects on empathy (increased) and schadenfreude (decreased).

In sum, exposure to prosocial (relative to neutral) video games is associated with increased prosocial outcomes and decreased antisocial outcomes. Thus, it appears that doing nice things to game characters during a video game generalizes to real-world social interaction in the form of more helpful behavior. This is particularly noteworthy because neutral video games have been shown to increase the accessibility of prosocial thoughts and to decrease aggressive thoughts, feelings, and behavior when compared to a no-game control condition (Sestir & Bartholow, 2010). Thus, it appears that the simple absence of antisocial media content has positive effects on pro- and antisocial outcomes but that these effects are even more pronounced for media with explicit prosocial content.

### Effects of Music With Prosocial Lyrics

As with research into the effects of video game exposure, most work has focused on negative aspects of exposure to music (Timmerman et al., 2008). For instance, listening to music with aggressive (relative to neutral) lyrics has been shown to increase aggressive cognition, affect (Anderson, Carnagey, & Eubanks, 2003), and behavior (Fischer & Greitemeyer, 2006). However, recent research has also pointed to possible positive effects of music exposure on social outcomes. In a series of studies (Greitemeyer, 2009a, 2009b), participants were randomly

assigned to listen either to music with prosocial lyrics or to music with neutral lyrics. Artists and genres were matched across experimental conditions. For instance, participants in the prosocial condition listened to "Love Generation," whereas participants in the neutral condition listened to "Rock This Party"—both songs performed by Bob Sinclair. Then, accessibility of prosocial thoughts, reported empathy, and helping behavior were assessed. Results consistently revealed that prosocial music exposure increases prosocial outcomes. For instance, after prosocial music exposure, 53% of the participants donated money to a nonprofit organization, whereas only 31% of the participants in the neutral music condition did so. In a natural setting, Jacob, Guéguen, and Boulbry (2010) found that patrons' tipping behavior in a restaurant was increased after listening to prosocial (relative to neutral) songs. Mediation analyses showed that affective, rather than cognitive, variables appear to constitute the mediating path from media exposure to action: Listening to music with prosocial lyrics increases empathy, which in turn evokes helping behavior (Greitemeyer, 2009b).

Listening to music with prosocial lyrics is associated not only with prosocial outcomes but also (negatively) with antisocial outcomes. In five studies, Greitemeyer (2011) tested and found support for the hypothesis that prosocial (relative to neutral) music exposure decreases the accessibility of aggressive thoughts, state hostility, and aggressive behavior. As with the effects of prosocial music exposure on prosocial behavior, affective variables constitute the mediating processes: Prosocial music exposure decreases state hostility, which in turn reduces aggression.

### Summary, Future Directions, and Implications

Most recent research into the effects of prosocial media exposure refers to the GLM as a conceptual framework for understanding media effects. The GLM integrates ideas from earlier domain-specific theories, such as social learning theory and excitation transfer theory, but is more parsimonious than the set of existing domain-specific theories. So far, the GLM fits quite well to the data. As illustrated by the model, the effects of media exposure on social outcomes are strongly affected by media content in that exposure to prosocial media increases prosocial outcomes and decreases antisocial outcomes. Moreover, the GLM suggests that cognitive, affective, and arousal variables may account for media exposure effects on behavioral responses, and this has also received strong support from empirical evidence. However, more research to clarify under which circumstances which variable evokes behavioral reactions is needed. For instance, it appears that different routes are the main forces driving the effect of music and video game exposure, respectively, on behavior. Prosocial music appears to affect both cognitive and affective variables, but only affective variables evoke behavioral reactions (Greitemeyer, 2009b, 2011). Prosocial computer game exposure also affects both cognitive and affective variables, but only cognitive variables

evoke behavioral reactions (Greitemeyer & Osswald, 2010). Likewise, exposure to violent video games (Anderson & Dill, 2000; Bartholow, Sestir, & Davis, 2005) and racing games (Fischer et al., 2009) influences cognitive and affective variables, but only cognition accounts for the effects on behavior. Although more research to further refine why media exposure affects behavior is needed, the GLM provides a useful framework for addressing the effects of media exposure on interpersonal behavior.

Some readers may wonder why we should care about the impact of prosocial media on our everyday life. Media research into the effects of violent media is warranted not least because of the widespread occurrence of violence in media depictions. However, not all media depict violent behavior, and there is even plenty of prosocial content in television, video games, and music. Content analyses (Woodard, 1999) showed that 50% of children's shows contained at least one social lesson. In a recent survey (Lenhart et al., 2008), 78% of teens who play video games witnessed people being helpful or generous while playing. There is also popular music with prosocial song lyrics; perhaps the best example is "We Are the World," performed by USA for Africa, which is the biggest-selling single of all time. Thus, research into the effects of media exposure with prosocial content is not only theoretically significant but also has important practical implications in that it highlights one way in which interpersonal encounters can be improved.

## Conclusion

The role of media violence in the occurrence of aggressive behavior is a topic of hot debate. For instance, some believe that excessive consumption of violent video games, such as first-person shooters, is an important precursor of aggression and violence, but this stance has been disputed by others. It is my hope that researchers will also address to what extent acts of benevolence in everyday life are precipitated by exposure to prosocial media.

## Recommended Reading

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## Declaration of Conflicting Interests

The author declared no potential conflicts of interest with respect to the research, authorship, and/or publication of this article.

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