

CENTER FOR ETHICAL EDUCATION

Building character in youth

PRACTICING GOODNESS

PLAYING A PROSOCIAL VIDEOGAME

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ABSTRACT

The effects of violent media on behavior have been studied for decades. Less studied are the effects of prosocial media on behavior (Hogan, in press), especially in terms of video games. Following the design of Bushman and Anderson (2001) participants were assigned to one of three video game conditions: violent, prosocial, neutral. After playing for ten minutes, participants completed three stories (Car Accident, Persuading a Friend, The Room [about a messy roommate]) writing what would happen next (what would the protagonist do, say, think, feel). Responses were scored for violent (harmful, aggressive), prosocial (helpful, empathic, supportive), and neutral remarks. Across conditions there were no significant differences for aggressive responses. Importantly, the number of prosocial remarks in the prosocial condition was significantly greater than in the aggression or neutral conditions. Those in the prosocial condition produced more prosocial endings to stories. Playing video games creates social biases that influence feelings, attitudes, and behavior. Which biases are created are influenced by what kind of game is played. Playing positive games may increase the likelihood of thinking, feeling, and behaving morally and suppress the violent priming of videogame media generally. Media may be used in multiple positive ways to build moral character.

INTRODUCTION

The effects of violent media on behavior have been studied for decades and have shown consistent negative effects. Cross-sectional studies show links between violent media and aggressive behaviors. Longitudinal studies demonstrate long-term effects of exposure to violent media such as violent and even criminal behavior (e.g., Huesmann, Moise, Podolski, & Eron, 2003). Laboratory studies using violent stimuli show increases in aggressive thoughts, feelings, and behaviors following exposure (e.g., Anderson & Bushman, 2001). A small but quickly growing body of research looks to media not only as a cause of antisocial behavior, but also as a potential aid in child development.

Several studies show the potential positive effects of media use. A classic pair of studies by Friedrich and Stein (1973, 1975) investigated the effects of different television programs on prosocial behavior in children ages 3-5. In the first study, the children were divided into three conditions, the prosocial program (*Mr. Rogers' Neighborhood*), the aggressive cartoon (*Batman, Superman*), and a neutral condition. After four weeks, the children in the prosocial condition were more obedient, persistent at completing tasks, and self controlled. These effects lasted for at least two weeks, when follow up testing was done. In their 1975 study, Friedrich et al. found that prosocial effects of television programming can be amplified by further "training." Specifically, it was found that role playing and discussion of the program after its conclusion led to a generalization of the helping behaviors displayed in the program (Friedrich et al., 1975).

A recent study by the American Federation of Scientists (AFS) (2006) discusses in detail the beneficial effects of video and computer learning games for skill development, recommending the use of video games as training for career skills, such as strategic and analytical thinking. Games provide contextual bridges between learning and application; increase time on task; maintain

motivation and goal orientation despite failure; and provide learners with cues to keep them learning. The positive aspects of video gaming have yet to be developed and widely distributed.

In the last few years, prosocial development through video games has also been studied. In one study by Fontana & Beckerman (2004), an educational video game was used to teach 2nd grade students violence prevention strategies. Significant changes were found in the experimental group's sensitivity and knowledge of others and in their ability to successfully manage potential conflicts when compared to the control group. However, the prosocial skills learned were limited and the participants were not tested for generalization beyond these skills.

Another study by Chambers & Ascione (1987) studied the effects of violent and prosocial video games on donating and helping behavior in 3rd, 4th, 7th, and 8th grade students. Students were less apt to donate nickels or sharpen pencils for the experimenter after participation in the aggressive condition (boxing video game) than for the neutral condition. However, the prosocial condition (Smurfs rescue game) had no effect on donation and helping behavior relative to the neutral condition. The absence of prosocial facilitation in this condition could be explained by a number of methodological shortcomings mentioned by the authors such as the length of play time and the nature of the prosocial game used.

For the present study, we compared the effects of prosocial and violent video game play on story stem completion. The study is meant to be an extended replication of the Bushman et al. (2001) study on violent video games. Bushman et al. (2001) examined whether brief exposure to violent video gaming increased hostile expectation biases, "the tendency to expect others to react to potential conflicts with aggression" (p. 1680). They randomly assigned participants to a violent or non-violent game experience. After playing for 20 minutes, participants read and completed story stems about potential conflict situations. Those in the violent condition were more likely to describe the main character as behaving, thinking, and feeling aggressively than those in the non-violent condition. In this study, we used a similar design and examined the effects of playing a prosocial game on story stem completion.

METHOD

Participants

Participants were 72 college student volunteers from a mid-sized private University in the American Midwest who received course credit. The treatment of participants was in accordance with the ethical standards of the American Psychological Association. Several participants were eliminated from the analyses for the following reasons: one gave three times as many answers to each story as required; one gave too few answers; five were unable to play the game properly (it froze up or they got caught in a corner). So the final number used in the analysis was 65.

Materials

Videogame. Participants played a video game constructed with tools from the game *Never Winter Nights*. There were three conditions: violent, prosocial, and neutral. In all three conditions, participants try to earn points. In the violent version the participant earns points by killing marauding bandits. The prosocial scenario requires the participant to administer medicine to visibly ill characters so they don't die. In the neutral condition, participants gather as many bags of gold as they can before they disappear.

Stories. Three incomplete stories were presented to participants. Two stories were from Bushman and Anderson (2001): "Car Accident" is about a person driving home who gets hit from behind when he brakes suddenly for a yellow light. "Persuading a Friend" is about a woman who wants her best friend, who is saving her money to buy a stereo, to join her for a beach vacation. "The Room" was a story written by the researchers about a student whose roommate's laundry is taking over their room despite a promise to take care of it weeks before.

Scoring. Responses were scored for neutral, aggressive, and prosocial content (feelings, actions, thoughts, speech). Aggressive responses were those that would do harm to the other person in the story (e.g., yelling at them, intentionally manipulating them, throwing their things). Prosocial responses were those that supported the welfare of the other or the relationship (e.g., checking to see if the other driver was okay, helping the friend buy a stereo, apologizing, doing the roommate's laundry).

Procedure

Participants were randomly assigned to a condition and tested individually in single rooms with a computer. First they played the video game for ten minutes. Then they completed the three ambiguous story stems. Following story stem completions, participants provided demographic information, including indicating degree of experience with video game playing (7-point Likert-type scale).

RESULTS AND DISCUSSION

All analyses were conducted with a significance value of .05. The means and standard deviations for story responses by condition are listed in the table below.

Table. Means and Standard Deviations of Response Type Percentage (Neutral, Aggressive, Prosocial) by Condition (Neutral, Aggressive, Prosocial)

Condition	Aggressive Responses	Prosocial Responses	Neutral Responses
Aggressive (N=26)	.23 (.11)	.11 (.05)	.66 (.11)
Prosocial (N=20)	.17 (.07)	.15 (.05)	.65 (.10)
Neutral (N=19)	.21 (.10)	.10 (.06)	.69 (.09)

To examine whether condition had the expected effect, a multivariate analysis of variance (MANOVA) was conducted with aggressive, neutral, and prosocial responses as dependent variables, condition (neutral, aggressive, prosocial) and sex as factors, and experience with video game playing as a covariate. The multivariate was significant only for condition (Wilks' lambda = .79, $F_{(6,112)} = 2.31$, $p < .04$). The univariate analyses were significant for prosocial responses, $F_{(2,58)} = 4.07$, $p < .02$, but not for aggressive responses although it approached significance, $F_{(2,58)} = 2.99$, $p < .058$, or for neutral responses $F_{(2,58)} = .76$, $p < .47$.

Overall there were no significant differences in the number of neutral responses across conditions. It was expected that the neutral condition would have primarily neutral responses but this was not the case. The neutral condition looked much like the violent condition (see the chart). There were no significant differences in the number of aggressive responses across conditions (although it approached significance for a lesser number in the prosocial condition). There were more violent than prosocial responses in all three conditions, suggesting a priming effect for video game playing in general. But in paired comparisons within condition, more aggressive than prosocial responses were given in both the aggressive condition ($t(25) = 4.49$, $p < .001$) and the neutral condition ($t(17) = 3.04$, $p < .007$). In fact there were no significant differences between the aggressive and neutral conditions for either aggressive or prosocial responses. Shooting bandits and picking up bags of gold had similar effects on story completion.

The prosocial condition had an effect in the expected direction, significantly increasing the number of prosocial responses in comparison to the other conditions. Within the prosocial there was no significant difference between the number of prosocial and the number of aggressive responses given ($t(19) = .861$, $p < .40$). This suggests that there was a high baseline level of aggression in participants and that perhaps what is happening in the prosocial condition is a suppression or replacement of violent responses.

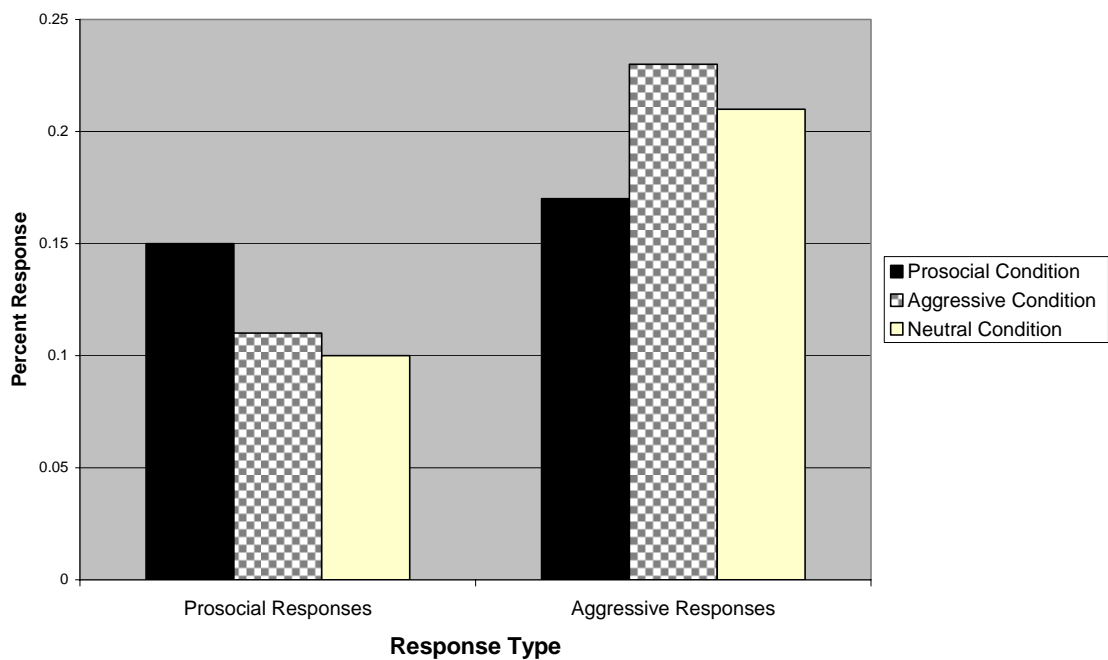
Although these results are preliminary, prosocial priming in video game playing may have at least short-term positive effects on thought, feelings, and behavior. The results also suggest that aggressive responses are primed by the act of playing a video game, in that there were no significant differences for aggressive responses across conditions. It is not clear what the prosocial mechanism was for increased prosocial responses in the prosocial condition. Perhaps it has something to do with the role adopted (helper of others) or the repeated practice (visual, proprioceptive, goal attempts) of helping

others, or a “prosocial attribution bias” (in contrast to the hostile attribution bias postulated by Bushman & Anderson, 2001) in which positive motives are ascribed to other people’s behavior..

Playing positive games may increase the likelihood of thinking, feeling, and behaving morally or suppress the violent priming of the media generally. Media may be used in multiple positive ways to build moral character. It is time to explore those options.

CHART

Response Type by Condition



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