

# Superman vs. BAD Man? The Effects of Empathy and Game Character in Violent Video Games

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## Abstract

Recent findings indicate that events in video games, as well as players' perceptions of game characters, moderate well-established video game effects. This includes the level of identification with game characters, and players' interpretation of whether or not the actions of the characters are conceived as moral. In the present study, it was tested whether manipulating empathy for well-known game characters influences video game effects in a violent beat-'em-up game. As was expected, playing the comic hero Superman led to more prosocial behavior (i.e., returning a lost letter) than playing the evil villain Joker. A similar positive effect was observed for inducing game characters as warm and empathic before playing. Compared to a neutral text, participants in the empathy text condition judged the violence in the game as less justified, irrespective of game character. When looking at hostile perception, an interaction was found between empathy and game character. For Superman, empathy led participants to interpret neutral faces as less aggressive. When playing the evil Joker, however, empathy even increased hostile perception. This is in line with previous findings that empathy may not be positive per se. In fact, it may backfire depending on the interaction of game characters and the empathy players feel for them.

## Introduction

### *Violent video games and identification*

VIDEO GAMES HAVE BECOME an integral part of our daily lives. Playing video games has become mainstream, and interacting with virtual agents may even trigger psychological reactions similar to those in interactions with humans.<sup>1</sup> Numerous studies have shown that playing violent video games has negative effects on cognitions, emotions, and behavior, including a decrease in empathy and prosocial behavior and an increase in aggression.<sup>2</sup> In addition to the game content itself, however, identification with violent characters increases aggression for both watching TV<sup>3</sup> and playing video games.<sup>4-6</sup> The inherent characteristics of video games further support identification. Players may adopt novel identities, "try on" ideal characteristics,<sup>7</sup> share game characters' goals, and experience their feelings, which may further intensify the perceived joy of playing the game.<sup>6</sup> Observing and modeling behavior, attitudes, and emotional reactions of others is an important aspect in social learning theory.<sup>8</sup> Through the process of wishful identification, which provides a glimpse of "what if..." players may perceive the character as a role model for their own future behavior.<sup>4</sup> This is further supported by the high degree of freedom of action in video games, including norm-breaking behavior (i.e., killing human

characters), which otherwise leads to negative (social) consequences.<sup>9</sup>

As violence makes video games especially appealing<sup>10</sup> and with media frequently presenting violent "heroes",<sup>11</sup> the role of identification with a violent video game character<sup>4</sup> or feeling empathy for a violent character<sup>12</sup> are important aspects in explaining negative video game effects. So far, few studies have directly compared the effects of video game characters<sup>5,12</sup> that differ with regard to users' perception of their morality (good vs. evil).<sup>5,13,14</sup> The present study was designed to close this empirical gap. Therefore:

**H1: Compared to a positive hero character, playing the evil villain should lead to more hostile perception bias and less prosocial behavior after the game.**

### *Empathy's role in media perception*

Empathy, the ability to understand and share in another's emotional state or context,<sup>15</sup> is often used in violence and aggression prevention as a protective factor and educational instrument.<sup>16</sup> Empathy is also applicable to the fictional context (fantasy empathy<sup>17</sup>) and has been demonstrated to play an important role in media perception.<sup>5,18,19</sup> Shifting the focus toward a victim in a video game, for example, enhances empathy in players.<sup>12</sup> Based on these findings:

**H2: Inducing empathy will lead participants to perceive the violence in the game as less justified**

Finally, it was expected that empathy induction has differential effects depending on the game character played. In line with recent findings:<sup>5</sup>

**H3: Empathy will reduce aggression and enhance prosocial behavior when playing a well-known, positively connoted comic character, while the opposite is expected when playing a famous villain.**

## Material and Methods

### Participants and design

Sixty undergraduate students ( $M_{Age}=22.13$ ,  $SD=3.77$ , ranging from 17 to 37 years; 20 males) were randomly assigned to one of the four conditions in a  $2 \times 2$  (character: Superman vs. Joker  $\times$  induction: empathy vs. neutral) between-subjects design.

### Empathy induction

Similar to empathy manipulations in other studies,<sup>20</sup> half of the participants read a bogus Wikipedia article before playing the game, in which Superman was described as coming from a loving family, whereas the Joker was introduced as having had a violent childhood in which he suffered from his physically aggressive father. The other half read the neutral original version of this article describing their respective video game character. All participants provided correct answers to the two control questions that were presented at the end of the experiment, indicating that they had read the text carefully.

### Control variables

Control variables that serve as potential moderators were assessed prior to the manipulation, including video game experience, familiarity with their game character, empathy (Interpersonal Reactivity Index<sup>17</sup>;  $\alpha=0.83$ ), and trait aggression (K-FAF<sup>21</sup>;  $\alpha=0.92$ ). After the game phase, participants indicated their perception of different aspects of the game, each tested with a single item (e.g., effort to win in the game).

### Dependent measure

Hostile perception bias was measured with a face perception task using stimuli from the Karolinska Directed Emotional Faces database.<sup>22</sup> Participants were shown 16 matrices

with 30 faces per matrix. Each matrix remained on the screen for 3 seconds. Six matrices contained only neutral faces, whereas the remaining 10 matrices showed up to 23 (or 77%) angry faces. Participants indicated their perceived level of aggression in the faces for each matrix (Likert scale from 0 to 10). Matrices with angry faces were used only as fillers because a hostile perception bias is defined as the tendency to interpret neutral faces as hostile.<sup>23</sup> Matrices were presented in random order.

Prosocial behavior was measured with the "lost letter technique."<sup>24</sup> A fully stamped and addressed letter that was not mentioned in the instructions was placed on the floor outside the lab such that it could easily be detected. Picking up the letter and directly returning it to either the experimenter or the addressee (on campus) was counted as prosocial behavior. Finally, participants indicated their perceived level of how justified violence was by rating how much they agreed that the opponent in the game deserved being physically assaulted.

### Procedure

After a first questionnaire with demographic and trait measures (see above) and after reading the bogus Wikipedia texts, participants played the violent beat-'em-up game *Mortal Combat vs. DC Universe* on the Playstation 3<sup>®</sup> (Sony) against the opposite character (Superman or Joker) in a short training phase, and then against random nonplayer characters (NPC) for approximately 15 minutes. In the "easy" game mode that was used, the NPC was fighting back but could be defeated easily to prevent frustration in game novices. The *Mortal Combat* series is known for its high level of bloody violence and the simple game play that rewards hits and kicks as well as other physical attacks. Playing was followed by the second part of the questionnaire, which included the dependent variables. Finally, participants were remunerated and thanked. On their way out, participants passed the apparently lost letter lying on the floor outside the laboratory.

## Results

A series of  $2 \times 2$  (character: hero vs. villain  $\times$  induction: neutral vs. empathy) between-subjects ANOVAs was calculated for all relevant variables. Prosocial behavior was analyzed with Pearson's chi square test (dichotomous dependent variable: forwarding the lost letter or not). As effect size measure,  $\eta^2$  will be reported, indicating the percentage of the dependent variable's variance explained by the independent variables in the sample data.<sup>25</sup>

TABLE 1. MEANS AND STANDARD DEVIATIONS (IN PARENTHESES) OF CONTROL MEASURES (ON A SCALE FROM 1 TO 5, WITH HIGH NUMBERS INDICATING HIGH APPROVAL)

	Superman		Joker		p-Value
	Empathy	Neutral	Empathy	Neutral	
Familiarity with character	4.13 (1.06)	4.36 (1.15)	3.67 (1.35)	3.93 (1.44)	>0.05
Game outcome (no. of wins minus losses)	1.04 (0.75)	0.88 (0.87)	1.08 (0.57)	1.14 (0.91)	>0.05
Perceived handling	3.33 (1.23)	2.79 (1.05)	3.00 (1.36)	3.40 (0.91)	>0.05
Satisfaction with assigned character	4.33 (1.18)	3.71 (1.44)	2.73 (1.67)	2.93 (1.44)	<0.01
Effort to win	4.60 (0.63)	4.21 (1.12)	4.13 (1.25)	4.67 (0.49)	0.06

TABLE 2. MEANS AND STANDARD DEVIATIONS (IN PARENTHESES) OR PERCENTAGES OF THE DEPENDENT VARIABLES

	Superman		Joker	
	Empathy	Neutral	Empathy	Neutral
Hostile perception bias (scale 0–10)	1.44 (1.00)	1.93 (1.20)	2.61 (1.04)	2.04 (1.31)
Prosocial behavior (picked up letters in %)	7.1	33.3	6.7	0
Acceptance of violence in the game as justified	1.67 (1.13)	2.65 (1.69)	1.47 (0.74)	2.13 (1.25)

**Manipulation check**

As expected, there were no significant differences, main effects, or interactions between the four experimental conditions with regard to control variables (e.g., handling), thus indicating that the random assignment to groups was satisfactory ( $p > 0.05$ ; see Table 1). Not surprisingly, however, the participants in the Superman condition ( $M = 2.55, SD = 1.30$ ) were happier with their character ( $M = 4.03, SD = 1.32$ ) than Joker players ( $M = 2.83, SD = 1.53; F(1, 55) = 10.07, p < 0.01, \eta^2 = 0.15$ ), thus reflecting the well-established picture of the two characters as hero and villain respectively. In addition, there was also a trend for the empathy text to increase the (self-reported) effort to win when playing Superman but to reduce the effort when playing Joker,  $F(1, 55) = 3.64, p = 0.06, \eta^2 = 0.06$ . In all following analyses, these two variables, as well as gender and age, are controlled for, but yield no significant results in all analyses.

**Effects on dependent variables**

Descriptive statistics of participants' scores on the dependent variables are shown in Table 2.

**Effects of video game character on dependent variables**

As expected, hostile perception bias was influenced by game character,  $F(1, 51) = 8.40, p < 0.01, \eta^2 = 0.12$ . After playing the Joker ( $M = 2.33, SD = 1.20$ ), neutral human faces were perceived as more hostile than after playing Superman ( $M = 1.69, SD = 1.11$ ). Furthermore, analysis revealed that the character also significantly affected players' prosocial behavior,  $\chi^2(1) = 4.25, p < 0.05$ . Odds ratio indicated that the letter was 6.2 times more likely to be picked up after playing Superman (20.7%) than after having played Joker (3.3%; see Fig. 1).

**Effects of the empathy induction on dependent variables**

Participants who read the empathic Wikipedia text reported that violence against their opponent in the game was less justified ( $M = 1.57, SD = 0.94$ ) than those who read the neutral text ( $M = 2.38, SD = 1.47$ ),  $F(1, 51) = 4.85, p < 0.05, \eta^2 = 0.32$ .

**Interaction effects on dependent variables**

Empathy affected hostile perception bias differently depending on the character played in the game. While empathy had the expected ameliorating effect on hostile perception bias in the hero condition (Superman), players of Joker found neutral human faces more aggressive after reading the em-

pathic text,  $F(1, 51) = 4.30, p < 0.05, \eta^2 = 0.06$  (for the interaction, see Fig. 2). A simple effects analysis revealed that this interaction effect and the character main effect (Hypothesis 1) were both due to the difference between the two empathy groups ( $M_{\text{Joker}} = 2.61, SD = 1.04$  vs.  $M_{\text{Superman}} = 1.44, SD = 1.00, F(1, 24) = 9.49, p < 0.01, \eta^2 = 0.27$ ) but not between neutral conditions ( $M_{\text{Joker}} = 2.04, SD = 1.31$  vs.  $M_{\text{Superman}} = 1.93, SD = 1.20, F(1, 23) < 1, p > 0.05$ ). No significant interaction was found for prosocial behavior ( $p > 0.05$ ).

**Discussion**

This study examined the effects of the moral nature of a character (good or bad) in a violent video game on the player. In addition, it was tested whether the induction of empathy has moderating effects. Participants who played the hero character (Superman) showed more helping behavior and less hostile perception bias than those who played the evil Joker. It also further supports that well-known icons of pop culture have strong effects on both media users' perceptions and behavior.<sup>26</sup> This is in line with earlier research showing that if players act in congruence with their idealized heroes, they experience satisfaction.<sup>27</sup> Most interestingly, however, empathy was found to have differential effects on cognitions in both character conditions. In the present study, empathy in the hero condition revealed its well-known positive powers found with real and fictional violence.<sup>28</sup> In contrast, empathy with the violent Joker increased the negative violent video game effects<sup>2</sup> on cognition. Hence, empathy may backfire depending on avatar characteristics in video games, which is in line with earlier studies.<sup>5,29</sup>

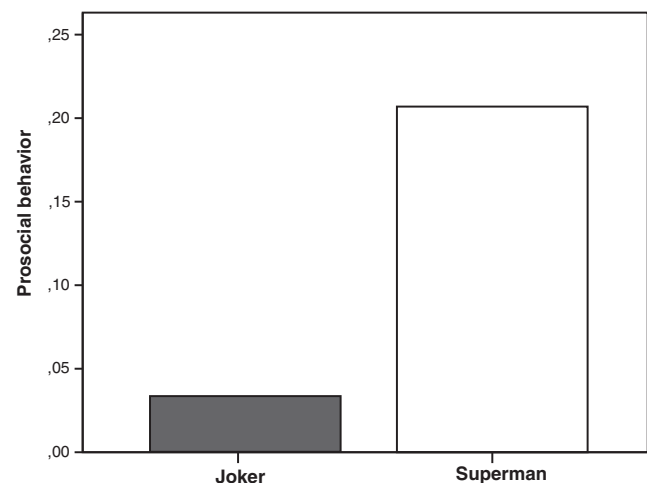
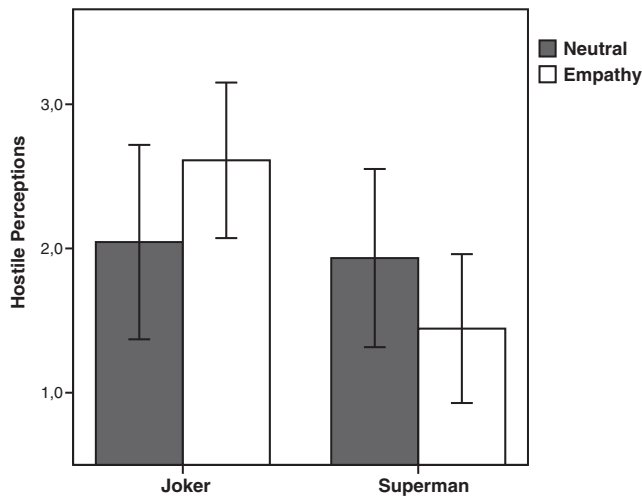


FIG. 1. Prosocial behavior (picked up lost letter) for participants who had played Joker or Superman (in %).



**FIG. 2.** Hostile perception bias for participants playing Joker or Superman as a function of having read the empathy or the neutral text. Error bars indicate  $\pm 2$  standard error of the mean.

With regard to the mechanism underlying these differential effects, we may speculate that, for the Joker character, the adverse effect of empathy is likely to result from reading the story about his violent childhood. This affected moral concerns because it provides an excuse for his later deeds as a “victim of circumstances,” resulting in participants’ greater acceptance of violence in the game as justified. When violence is morally justified, aggression is disinhibited.<sup>30</sup> Research has shown that this also applies to violent video games.<sup>6</sup> In the present study, disinhibition of aggression was observed as a pronounced hostile perception bias—neutral faces were perceived as angry and aggressive. It remains to be tested whether these adverse effects of empathy will also be effective when coupled with unfamiliar game characters or characters that are not perceived as morally biased.

Future studies should test an alternative explanation of the mechanism underlying empathy induction. In the present study, we cannot rule out the possibility that the increase in aggression was due to empathy changing the level of identification with the game character<sup>4</sup> rather than affecting (only) moral concerns. With respect to limitations, it should be noted that, in the present study, most participants did not play video games on a regular basis ( $M = 2.07$ ,  $SD = 1.03$ ; scale from 1 to 4). Future studies should include more habitual gamers to understand further the processes underlying the effects.

In conclusion, this study demonstrated that empathy might serve as an amplifier for already established attitudes that affect cognition. However, this amplifying effect holds for both characters, thus widening the gap between “good” and “evil.” Loaded with a positive background story, empathy boosts positive effects. Loaded with a violent or negative story, however, empathy may even worsen the consequences of playing a violent video game, potentially by providing an excuse for acting violently. It therefore seems necessary to decide carefully when (or for whom) perspective taking might be beneficial and when it might have dangerous consequences.<sup>6</sup> As media violence is suspected to lead to a violent and desensitized personality in the long run,<sup>31</sup> a closer analysis of the presentation and choice of video game char-

acters becomes increasingly important. Future research should not only study the violent content of games, but also the role of empathy, its mechanisms, and how it may be used to induce positive and long-lasting behavioral effects that might even lead to beneficial changes in personality.<sup>32</sup>

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