



RESEARCH ARTICLE

# Morality in Gaming: Observer Perceptions of Player versus Character Actions

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## Abstract

The debate on the impact of violent video games and its influence on players continues despite mixed findings. Using the lens of third person perception research, we explored moral judgments of laypersons, those often at the crux of these public debates. Study 1 investigated whether the player or character is perceived by an outside observer as responsible for moral decisions made within the narrative of a violent video game. Study 2 investigated how those perceptions may impact the observers' perceptions of the player's future negative behaviors and personality traits. Study 1 and 2 used a 2 (condition: rescuing vs. harvesting) x 2 (role: player vs. character) mixed ANOVA with role as a repeated measure. We created a brief recording of gameplay leading to a moral decision in *Bioshock*, an interactive, first-person shooter game, shown to participants. Participants were asked to rate perceived morality of player and character actions. Study 1 showed that participants ( $N = 51$ ) held the observed player more morally responsible for in-game behaviors than the character within the game. Replicating and advancing Study 1, Study 2 ( $N = 227$ ) showed support for *you are what you eat* heuristic, in that observers were more likely to view the negative behaviors of the in-game characters as indicators of negative personality traits of the player. These insights are crucial in the broader societal discourse on the potential link between violent video games and real-world aggression

Keywords: heuristics, moral-decision making, perceived morality, violent video games

## Morality in Gaming: Observer Perceptions of Player versus Character Actions

A heavily debated topic in technology interaction is the extent to which violent video games influence real-world behaviors and aggression (Anderson & Bushman, 2001; Anderson et al., 2010; Ferguson & Kilburn, 2010; Ferguson et al., 2020; Hilgard et al., 2019; Higher Education Video Game Alliance (HEVGA), 2018; Markey & Ferguson, 2017; Teng et al., 2019). Multiple meta-analyses of violent video game research inundate the psychological scientific community (Anderson et al., 2010; Ferguson, 2007a, 2007b, Ferguson & Kilburn, 2009; Prescott et al., 2018) with the most recent analysis demonstrating a small, but consistent effect of aggression linked to violent video games (Mathur & VanderWeele, 2019). Contrary to these findings, there is

continued debate suggesting that methodological flaws, sensationalism, and publication bias explain the inconclusive findings (Ferguson, 2007a, 2007b, Markey et al., 2015).

Regardless of mixed and inconclusive evidence from researchers, the media has portrayed those who play violent video games as violent or immoral people in real life (Carey, 2013, New York Times), creating a moral alarm of the 21<sup>st</sup> century following a series of school shootings that began with the Columbine shooting in the late 1990's (Markey & Ferguson, 2017). Markey and Ferguson (2017) found a nearly 300 percent increase in violent video game research following the Columbine shooting. More recently, former President Donald Trump blamed violent video games for the Parkland school, Florida shooting in 2018 (Ducharme, 2018, Times). These tragedies spur political outrage of blaming violent video games for mass school shootings and corrupting youth, creating false stereotypes and perceptions of those who play these games for entertainment.

In 2015, the American Psychological Association (APA) created a Task Force on Violent Media to review the APA resolution on violence in interactive media and video games to ensure the APA resolution accurately represented the latest scientific research (APA, 2015). In 2020, a revision clearly stated that violence should not be attributed to violent video games, as violence (e.g., mass

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shootings, killings) is a much more complex problem. One of the gaps identified in this resolution was lack of knowledge regarding negative outcomes associated with game characteristics, how the game is played and how game play is perceived by the players (APA, 2020). With the overwhelming amount of research in the field, and with still no consensus in sight on the true effects of violent video games (Ferguson et al., 2020), more recent studies have begun to address this gap in knowledge.

During the COVID-19 pandemic of 2020-2021, video game usage surged as individuals sought indoor entertainment, with first-person shooter (FPS) games, like Call of Duty, dominating sales (Entertainment Software Association, 2021; Pascoulis, 2021). These games, rich in violent content and moral dilemmas, offer a unique platform to study moral decision-making and its potential real-world implications (Hodge et al., 2019). A vast number of individuals engage in violent video game play, and there is a pervasive belief, both in public opinion and academic circles, that such gaming correlates with real-life immoral actions and character. While numerous studies have inquired into players' in-game moral choices and their psychological underpinnings (Ellithorpe et al., 2015; Lin, 2011; Mahood & Hanus, 2017; Gao et al., 2017; Hodge et al., 2019; Walter & Tsifti, 2018), there remains a gap in understanding how external observers judge these players. Given the prevailing public sentiment linking violent gaming to immoral behavior, our study seeks to explore this perception further.

### The Perceived Morality of the Player

Research has explored the moral and emotional dynamics of video game players. For instance, Lin (2011) highlighted that players often morally disengage from in-game characters, especially when their violent actions are seen as justifiable and in-game characters are perceived as heroes. Results showed that game players (i.e., participants) judged the character they were playing as more morally justified when shooting at monsters versus humans, reported more guilt killing humans over monsters, and females reported more shame when killing humans (Lin, 2011). This research suggests that moral disengagement can lead to reduced empathy towards in-game victims. Similarly, Gao et al. (2017) found that players' aggression levels were influenced by their empathy and the perceived morality of in-game actions. Gao et al.'s (2017) research is consistent with Lin (2011) while extending upon it. The research suggests that violent in-game behavior can produce emotional responses when the perceived target is human, but provide more moral justification for in-game behavior when the opponent is non-human or the player feels justified in their killing behavior. While these studies provide valuable insights into players' internal moral judgments and emotional responses, we know less about how observers perceive the broader effects of violent video games on players in general.

### How the Observers Perceive Players?

Research has primarily focused on players in video games, with less exploration into how observers perceive these players and characters. The third person perception effect, a concept rooted in mass communications research, posits that individuals often perceive media's harmful effects as more pronounced on others than on themselves (Davison, 1983; Salwen & Dupagne, 1999). This perspective has been applied across a variety of media contexts

including politics and advertising (Cohen & Davis, 1991), pornography (Gunther, 1995), and, more recently, violent video games (Boyle et al., 2008; Boyle et al., 2013; Scharrer & Leone, 2006, 2008; Zhong, 2009). One heuristic within this domain is the "you are what you eat" principle, suggesting that the more someone consumes negative content (e.g., those who listen to rap music with violent lyrics), the more it is believed to affect them (i.e., more violent behavior) (Eveland et al., 1999). Bandura's moral disengagement theory (2016) provides a framework for understanding these perceptions. For instance, Lin (2011) found that game characters are often viewed as heroes, and their violent actions are morally disengaged by players and observers alike, as these actions are seen as necessary for a 'greater good.' This aligns with the 'you are what you eat' heuristic, where repeated exposure to specific content, such as violence, is believed to influence a person's behavior and moral judgments. Extending this understanding, Gao et al. (2017) explored the roles of empathy and character justification in aggression. Their findings indicated that empathy levels and the moral justification of characters' actions significantly affect players' aggression, with moral perceptions varying based on whether violence is seen as justified.

Boyle et al. (2008) explored third person perception in the realm of violent video games, suggesting individuals employ heuristic strategies to gauge the potential impact of violent video game media. They posited that as perceptions of negative content effects increase, so does opposition to that content. In their study, participants viewed a violent clip from Grand Theft Auto 2 (GTA2) and then assessed perceived effects on themselves and others, including behavioral tendencies and support for government censorship. Results indicated that participants believed others were more influenced by video games than they were, and the perception of the game's impact on others was a significant predictor for supporting censorship. This suggests that participants relied on straightforward judgments about the game's effects rather than a nuanced third-person perspective. In essence, the more one is perceived to play violent games, the more they are seen as embodying the traits of in-game characters.

Boyle et al. (2013) extended this research by examining whether pre-existing beliefs affect third person perceptions after manipulating a news story with strong negative or positive valence regarding the effects of violent video games. Brief exposure to news stories had no impact on perceptions, more stable beliefs (i.e., maternalism, paternalism, media vulnerability) influenced third person perceptions, and those with prior use of video games perceived lower effects of violent video games on others. While previous research has focused on how *players* perceive the morality of game play and in-game behavior, Boyle et al.'s (2013) research explores how *outsiders* or *others* make assessments of those playing violent video games based on manipulated news coverage (i.e., media influence).

Related to the third person perception effect is the fundamental attribution error (FAE), a concept where individuals ascribe behaviors more to inherent traits than situational factors (Ross, 1977). This idea has been explored in the context of violent video games by Walter and Tsifti (2018) using Grand Theft Auto IV (GTA4). In their research, participants either played or observed the game. Post-game assessments revealed that players attributed their in-game antisocial behavior to societal violence, while observers linked it to the character's inherent traits. Despite some limitations, such as a small sample size, this study is pioneering in its exploration of FAE within violent

video game contexts. Walter and Tsfaty's findings shift the focus from investigating and understanding the players' experience and moral decision-making processes to understanding perceptions of those who are often the individuals making moral judgments and claims, the observers/laypersons. Collectively, these studies deepen our understanding of how heuristics and moral decision-making theories apply in the context of video game morality. Our study extends this framework by examining how observers' perceptions of player morality are influenced by in-game actions, adding a new dimension to the existing literature on moral judgments in video game environments.

### The Current Research

The Pew Research Center reports that Americans are relatively divided on the link between video game violence and actual violence, with 40% of the public agreeing that there is a relationship between actual violence and violent video game play, and only a slight 53% majority that disagree, leaving 7% that are unsure (Duggan, 2015). While past research has shown various possible explanations for the associations between violent video game play and associations with the morality of the player and perceived morality of the player, there have been few research studies to date exploring the moral judgments of laypersons, those participating in and evaluating public debates of such important topics (Rothmund et al., 2015). Thus, the current research examined how the in-game behavior of players of violent first-person shooter games is perceived by others. Additionally, the research will investigate the degree to which observers attribute the in-game behavior of the player to the player's personality traits and moral character, rather than to the character in the game. More importantly, this research posits a new and often overlooked question in the literature, does the moral context of the video game impact how outsiders perceive those playing the video game? (explains how our study deepens and extends previous research on this topic)

First, adding to Lin's (2011) research findings that type of harmed opponent influenced the players' moral judgments of their own actions, the current study explored how observers' moral judgment and emotional responses were influenced based on the actions of the player/character (e.g., save or kill). Thus, this research examined how those viewing an individual playing a violent first-person shooter game perceive in-game decisions. Specifically, do observers view in-game decisions as indications of gameplay experience or as the player's poor moral character. The following hypotheses were posited:

**Hypothesis 1:** Participants who view the in-game character behaving violently will rate the player as being less moral than the character

**Hypothesis 2:** In contrast, participants who view the in-game character behaving in a prosocial manner will rate the player as being more moral than the character.

Second, aligning with Boyle et al's (2008) theoretical discussion on third person perception, Study 2 will replicate Study 1 (thus providing increased confidence regarding the reliability of the main findings) and explore how perceptions of the player will impact the observer's perceptions of the player's engagement in potential future negative behaviors (e.g., cheating to get ahead), and attribute negative personality traits for players who engaged in antisocial behavior within the game. In addition, we explored whether observers would choose to

kill or save the character in the video game, if they were put in the player's position. The following hypothesis was posited:

**Hypothesis 3:** Participants who view the in-game character behaving violently will rate the player as holding more negative personality traits and engaging in more negative behaviors in other areas of their lives outside of the game compared to participants who view the in-game character behaving prosocially.

### STUDY 1

Study 1 investigated whether the player or character is perceived by an outside observer as responsible for decisions (i.e., prosocial vs antisocial) made within the narrative of a violent video game.

### Methods

#### Participants

Fifty-eight students from a medium-sized mid-Atlantic university volunteered to participate in this study by registering for the study on the university's psychology research pool website. Only those at least 18 years of age who did not participate in a related study were able to register for the study. The study was entitled, "Perceptions of Gaming", and participants were informed that they would watch a short clip of a video game that was being played by another person and then answer questions about the clip they were shown. They received course credit for their participation. Seven participants were excluded from the study due to failing the manipulation check (i.e., incorrectly selecting the moral decision). Thus, the final sample consisted of 51 participants (31 women; 20 men). Participants ranged in age from 18 to 28 ( $M = 20.02$ ,  $SD = 2.20$ ). A little more than half (52.9%) self-categorized as Caucasian/white, 19.6% self-categorized as African-American, 7.8% self-categorized as Asian-American, 5.9% self-categorized as Latino/Latina, and 13.7% self-categorized as other. Participants' self-reported experience with video games represented the full range of the scale, with endpoints *none at all (never played)* (1) to *extremely experienced (play daily)* (7), ( $M = 3.65$ ,  $SD = 1.84$ ).

#### Materials

**Media Lab.** This study used MediaLab Research Software version 2014 by Empirisoft to present the contents of the study. The video game *Bioshock*, a first-person shooter, was used to create moral choice stimulus. *Bioshock* was selected as the game's moral choices were preexisting and integrated into gameplay and the in-game reward system requiring no additional manipulation on the part of the researchers. MediaLab was used to randomly assign participants to either the saving condition or the harvesting (i.e., killing) condition, to administer the *Bioshock* narrative (i.e., the background of what is happening in the video game), questionnaires, and debriefing form as well as to present the recording of the video game.

**Observational recording.** The observational recordings of the two conditions (saving or harvesting the little girl character) were filmed within the Gaming Lab of the

university. The recordings were of the television screen depicting the video game *Bioshock* during game play. The game player was not shown in the recording. The two versions of the recording were identical except for the moral decision at the end of the recording.

### Ethical Statement

The research reported was conducted in accordance with the principles of research ethics established by the American Psychological Association. The data are available to any researcher for the purpose of reproducing the results. The data can be found at the Open Science Foundation.

### Procedure

Participants arrived at the laboratory and were taken to separate individual testing rooms, each containing a computer and a set of speakers. Participants then completed the informed consent form if they were willing to participate and assigned confidential unique identification codes used throughout the remainder of their participation. The computers were pre-set to the opening screen containing a brief narrative of the storyline of the video game *Bioshock*. In four paragraphs, the narrative provided a brief synopsis of the game including an overview and the goal of the game. The narrative explained that *Bioshock* is an interactive, first-person shooter game in which the character must escape a submerged city while being attacked by human enemies. During gameplay, the player will have opportunities to increase the survival chances of their character by harvesting resources from “*Little Sisters*” for an immediate reward or saving them for a delayed reward. After reading the narrative, participants viewed one of two randomly assigned recordings of game play lasting about 15 minutes. Most of the recording consisted of the *Bioshock* character fighting off the armies of altered humans and finding his way through the collapsed city. This portion of the clip was identical for all participants. The final minutes of the recording contained a moral decision with which the player was faced. The player must decide to either rescue a little girl character (called “the little sister”) who is pleading for help or to “harvest” (i.e., kill) the little girl character to earn in-game rewards. Approximately half the participants viewed the character saving the little girl, while half viewed the character harvesting the little girl. When the recording ended, participants completed questionnaires assessing their reactions to the recording.

**Manipulation check.** Participants first answered one question that served as the manipulation check. The question asked “*Bioshock* requires a decision to either harvest or rescue the little sister. Was the little sister harvested or rescued?” Participants either selected “harvest (kill) the little sister” or “rescue (save) the little sister” to answer the question. The data from those who incorrectly answered this question ( $n = 7$ ) were excluded from analyses.

**Moral judgment measure.** Participants then answered six questions using 7-point scales that assessed their perceptions of the player’s morality and of the in-game character’s morality. Using scales with endpoints *not at all* (1) and *extremely ethical* (7), the first two questions asked “how ethical was the decision of the” person playing the game/character in the game? Using scales with endpoints *completely unacceptable* (1) and *completely acceptable* (7), the next two questions asked “how morally

acceptable was the decision of the” person playing the game/character in the game? Using scales with endpoints *completely unjustifiable* (1) and *completely justifiable* (7), the next two questions asked “how morally justifiable was the decision of the” person playing the game/character in the game? The three items assessing the player’s morality were highly correlated ( $\alpha = .86$ ), so they were averaged to create a player morality index. Similarly, the three items assessing the character’s morality were highly correlated ( $\alpha = .74$ ) and were averaged to create a character morality index.

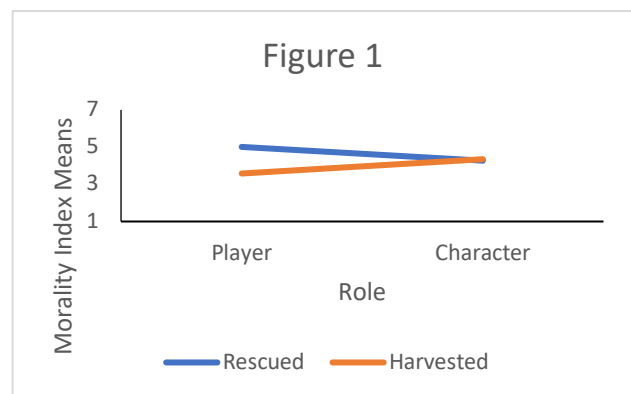
**Video game experience.** Participants then responded to one item that assessed their level of video game experience. Using a scale with endpoints *none at all (never played)* (1) to *extremely experienced (play daily)* (7), the item stated “please rate your previous video gaming experience.”

**Demographic assessment.** In the final section of the questionnaire, participants completed four demographic questions about their age, gender, class standing, and ethnicity.

**Debriefing.** After completion of the questionnaire, participants read a debriefing script that explained the purpose of the study. Participants were also given the opportunity to ask questions about the study and its purpose.

### Results

The data from the morality indices were then analyzed using a 2 (condition: rescuing vs. harvesting) x 2 (role: player vs. character) ANOVA with role as a repeated measure. The ANOVA revealed a significant condition main effect,  $F(1, 49) = 5.27, p = .03, \eta^2 = .10$ . Not surprisingly, when the little girl was saved ( $M = 4.64, SD = 1.27$ ), the target was rated higher on the morality index than when the little girl was harvested ( $M = 3.96, SD = 1.35$ ). The ANOVA also revealed a condition x role interaction effect,  $F(1, 49) = 11.79, p = .001, \eta^2 = .19$ . Participants ratings of the morality of the *character* were no different when the little girl was saved ( $M = 4.27, SD = 1.34$ ) than when she was harvested ( $M = 4.35, SD = 1.26$ ). However, participants rated the morality of the *player* significantly different when the little girl was saved ( $M = 5.01, SD = 1.20$ ) than when she was harvested ( $M = 3.58, SD = 1.44$ ) (see Figure 1).



**Figure 1: Means of Player and Character Morality Indices for Participants Who Viewed a Rescue or a Harvest in Study 1.**

### Discussion

Study 1 demonstrates that those who view an individual playing a violent video game tend to hold the player more morally responsible for the in-game behaviors than the character within the game. This perception of responsibility holds true for both moral and immoral in-game behaviors (i.e., a player is viewed as moral if engaging in a moral behavior within the game and viewed as immoral if engaging in an immoral behavior within the game), and aligns with the fundamental attribution error (Ross, 1977). Extending this theory to video game play, results show that observers may overlook the narrative context of video games when making moral judgments. While the results from Study 1 provide insight into whether the player or character is perceived as responsible for decisions made within the narrative of a game, there were several weaknesses. First, the sample size was relatively small ( $N = 51$ ). Second, although the one in-game moral decision was evaluated by participants in Study 1, no additional measures assessing participants' perceptions of the player were included. Thus, Study 1 is unable to explain how the player of a violent video game is more broadly perceived by spectators. Third, no measures were included to begin to explore possible factors that could be related to the moral judgments of participants who view the player of a violent video game.

## STUDY 2

As an extension of Study 1, the goal of Study 2 was to replicate Study 1 and address the weaknesses identified above. First, in Study 2, a larger sample ( $N = 227$ ) participated with the goal of ensuring reliable findings. Despite the fact that there was enough statistical power to support the Study 1 hypotheses, we still believed that a larger sample for Study 2 was more consistent with typical sample sizes. However, it was not so large that it would yield significant findings for very small effects. Ultimately, we believe that a second study with a larger sample would increase our confidence in the reliability of the findings and ability to generalize these findings to college student populations. Increasing the size of the sample impacted the statistical power of Study 2. Second, measures were included to assess participants' perceptions of the morality of the game player beyond the game decisions as well as the personality of the game player. These measures were included to assess whether the broader morality and personality of video game players are judged based on their moral decisions within a video game. We hypothesized that spectators of violent video games will base their judgments of a player on behaviors that occur within the narrative of the game. If viewers witness highly moral gameplay, then they will perceive the player as a relatively more moral person overall than if viewers witness less moral gameplay. Similarly, if viewers witness highly moral gameplay, then they will be more likely to attribute positive personality traits to the player than if viewers witness less moral gameplay. Finally, measures of participants' emotional reactions to viewing the gameplay were included to assess whether emotion might be an important factor related to the judgments and perceptions of video game players.

## Methods

### Participants

Two hundred and sixty-three students from a mid-Atlantic university volunteered to participate in this study.

Participants registered for the study on the university's psychology research pool website and received course credit for their participation. Only those at least 18 years old were able to register for the study. The study was entitled "Perceptions of Gaming", and participants were informed that they would watch a short clip of an individual playing a video game and then answer questions about what they had seen. Thirty-six participants were excluded from the analyses due to failing the manipulation check (i.e., incorrectly selecting the moral decision). Thus, the final sample consisted of 227 participants (174 women; 53 men). Thus, participants ranged in age from 18 to 54 ( $M = 19.64$ ,  $SD = 3.53$ ). More than half (63.4%) self-categorized as Caucasian/white, 18.9% self-categorized as African-American, 10.1% self-categorized as Asian-American, 3.5% self-categorized as Latino/Latina, and 4.0% self-categorized as other. Participants self-reported experience with video games represented the full range of the scale ( $M = 2.86$ ,  $SD = 1.75$ ).

## Materials and Procedure

**Observational recording.** MediaLab Research Software by Empirisoft was again used to present the materials. The observational recordings of the two conditions (saving or harvesting the little girl character) used in Study 2 were very similar to those used in Study 1. The only difference is that the gameplay that proceeded the in-game moral decision was shorter so that the entire video was 12 minutes long rather than 15.

**Manipulation check.** Participants first answered the same one question manipulation check used in Study 1. As in Study 1, the data from those who incorrectly answered this question ( $n = 36$ ) were excluded from analyses.

**Emotion Measures.** Participants then completed two questions using 5-pt Likert scales regarding the type of emotion evoked by watching the video. From a scale of *Not at All* (1) to *Extremely* (5), the first question asked, "To what degree did watching the game play make you feel positive emotions (happy, content, satisfied)?" and the second question asked, "To what degree did watching the game make you feel negative emotions (anger, disgust, or fear)?"

**Moral judgment measure.** Participants then answered the same six moral judgment measures that were used in Study 1. As in Study 1, the three items assessing the player's morality ( $\alpha = .83$ ) and the three items assessing the character's morality ( $\alpha = .81$ ) were highly correlated, so they were averaged to create a player morality index and a character morality index.

**Moral perceptions measure.** Participants then completed a questionnaire assessing their perceptions of the individual playing the game. Using a 7-pt Likert scale ranging from *Very Unlikely* (1) to *Very Likely* (7), participants responded to ten questions assessing the perceived morality of the video game player. Participants responded to items such as "How likely is the individual playing the game to take advantage of others?" or "How likely is the individual playing the game to never cheat on his/her taxes?" The ten questions were highly reliable ( $\alpha = .82$ ) and were averaged to create a negative moral perceptions index.

**Personality Measure.** Participants completed a questionnaire assessing their perceptions of the degree to which the player possessed certain positive and negative personality traits. The measure consisted of 18 personality traits, nine positive traits and nine negative traits. Using a



5-pt scale ranging from *Not at All* (1) to *Extremely* (5), participants read the following instructions: “Based on game play...indicate how much you feel each personality trait applies to the individual playing the game”. The positive personality traits were generous, friendly, reliable, affectionate, helpful, brave, gentle, nice, and optimistic. The negative personality traits were selfish, vulgar, aggressive, violent, intolerant, impulsive, dishonest, unreliable, and deceitful. The positive and reverse-scored negative personality traits were highly correlated ( $\alpha = .91$ ) and were averaged to create a positive personality index.

**Mitigating Factors Measure.** Participants read a list of four hypothetical scenarios and indicated to what degree each scenario may have changed the player’s in-game decision to either harvest or save the little sister. The scenarios included the player receiving a real-world reward for exhibiting immoral behavior in the game, playing the game in front of an audience, being observed while playing, and being forced to play the game. After each scenario, participants provided ratings on scales ranging from *Very Unlikely* (1) to *Very Likely* (5) the likelihood that the player’s decision may have been different from the decision that they witnessed the player make.

**Participant’s choice.** Participants answered one question that assessed what decision they would have made (i.e., harvest or rescue the little sister) if faced with the same moral decision as the player of the video game they observed.

**Video game experience and demographic assessment.** Participants answered one question assessing their video game experience and several demographic questions that were identical to those used in Study 1.

## Results

### Morality Index

The data from the morality indices were analyzed using a 2 (condition: rescuing vs. harvesting) x 2 (role: player vs. character) ANOVA with role as a repeated measure. The ANOVA revealed a significant condition main effect,  $F(1, 225) = 62.09, p < .001, \eta^2 = .22$ . When the little girl was saved ( $M = 4.68, SD = 1.33$ ), the target was rated higher on the morality index than when the little girl was harvested ( $M = 3.53, SD = 1.44$ ). Consistent with Study 1, the ANOVA also revealed a condition x role interaction effect,  $F(1, 225) = 38.61, p < .001, \eta^2 = .15$ . Participants ratings of the morality of the *character* were similar when the little girl was saved ( $M = 4.38, SD = 1.42$ ) or when she was harvested ( $M = 3.78, SD = 1.25$ ). However, participants rated the morality of the *player* much differently when the little girl was saved ( $M = 4.98, SD = 1.24$ ) than when she was harvested ( $M = 3.28, SD = 1.16$ ) (see Figure 2).

### Emotion Measures

The two items measuring participants’ self-reported positive and negative emotions in response to watching the gameplay were analyzed using a 2 (condition: rescuing vs. harvesting) x 2 (emotion: positive vs. negative) ANOVA with emotion as a repeated measure. The ANOVA revealed only a significant main effect for emotion,  $F(1, 225) = 232.49, p < .001, \eta^2 = .51$ . Overall, participants reported that viewing the video clip of an individual playing *Bioshock* evoked more negative emotions ( $M = 3.36, SD = 1.17$ ) than positive emotions ( $M = 1.67, SD = 0.87$ ).



**Figure 2: Means of Player and Character Morality Indices for Participants Who Viewed a Rescue or a Harvest in Study 2.**

### Moral Perceptions Index

For the moral perceptions index, a one-way ANOVA with condition as the independent variable revealed a significant condition main effect,  $F(1, 225) = 6.50, p = .01, \eta^2 = .03$ . Participants who viewed the moral decision to harvest the little sister perceived that the player would participate in more negative real life behaviors (such as cheating to get ahead or taking advantage of others) ( $M = 3.33, SD = 0.52$ ) than those who viewed the moral decision to rescue the little sister ( $M = 3.14, SD = 0.58$ ).

### Personality Index

The same one-way ANOVA used on the moral perceptions index was used on the personality index. It revealed a significant condition main effect,  $F(1, 225) = 20.49, p < .001, \eta^2 = .08$ . Participants who viewed the moral decision to harvest the little sister rated the player’s personality more negatively ( $M = 2.47, SD = 0.54$ ), than those who viewed the moral decision to rescue the little sister ( $M = 2.85, SD = 0.69$ ).

### Mitigating Factors Measures

The one-way ANOVA on the mitigating factors measures revealed no significant differences between those who viewed the moral decision to harvest the little sister and those who viewed the moral decision to rescue the little sister (all  $p$ -values  $> .28$ ).

### Participants’ Choice

A chi-square test on the participants’ choice variable assessing which decision (harvest or rescue the little sister) they would have made indicated that most (81%) reported that they would rescue the little sister rather than harvest her (19%),  $\chi^2(1, N = 227) = 87.58, p < .001$ . However, when the participants’ choice variable was crossed with the condition variable, participants who viewed the player rescuing the little sister were more likely to select that they would also rescue the little sister (90%) than those who viewed the player harvesting the little sister (70%),  $\chi^2(1, N = 227) = 14.23, p < .001$ .

### Correlations between Measures

Table 1 presents a correlation matrix containing the morality indices, the emotion measures, the moral perceptions index, and the personality index.



**Table 1: Correlations between Morality Indices, Emotion Measures, the Moral Perceptions Index, and the Personality Index.**

Measure	1	2	3	4	5	6
1. Player Morality Index	--					
2. Character Morality Index	.50**	--				
3. Positive Emotion	.30**	.26**	--			
4. Negative Emotion	-.14*	-.09	-.34**	--		
5. Moral Perceptions Index	-.31**	-.21**	-.27**	.39**	--	
6. Personality Index	.48**	.35**	.50**	-.47**	-.61**	--

Note. \* $p < .05$ , \*\* $p < .01$

## Discussion

Study 2 supported the findings from Study 1 in that those who viewed an individual playing a violent video game tended to hold the player more morally responsible for the in-game behaviors than the character within the game. While Study 1 established that observers attribute greater moral responsibility to the play than to the character within the game for in-game behaviors, Study 2 demonstrated that those who view an individual committing a violent behavior in a video game, believed that individual is more likely to commit negative real-life behaviors and possess more negative personality traits. This progression from Study 1's focus on in-game moral judgments to Study 2's exploration of attributions of real-life characteristics based on in-game behavior enhances our understanding of the broader moral implications of observing violent video game play. These complementary insights from both studies underscore the complex nature of moral perception in the context of video game environments, bridging the gap between virtual actions and perceptions of real-world dispositions.

## GENERAL DISCUSSION

In two studies, Hypothesis 1 was supported. Participants who viewed the in-game character behaving violently rated the player as being less moral than the character, and participants who viewed the in-game character behaving in a prosocial manner rated the player as being more moral than the character. Observers rated players as being less moral when in-game characters behaved violently and more moral when in-game characters behaved prosocially. These findings are in line with findings from Lin (2011) and Walter and Tsftati (2018) in that the saving or harming of the in-game "little sister" character influenced observers' perceptions of the player. In-game character prosocial or violent actions were seen as representations of the player's morality. In addition to replicating the findings of Study 1, Study 2 also supported Hypotheses 2 and 3. Participants rated the player as holding more negative personality traits and engaging in more negative behaviors in other areas of their lives outside of the game when the in-game character behaved violently than when the in-game character behaved prosocially.

Interestingly across both conditions viewed, observers overwhelmingly reported their inclination to make the prosocial choice presented in the game. However, a difference did exist across conditions with more observers indicating their prediction of making the prosocial behavior in the prosocial behavior condition (saving) than the violent behavior condition (killing). However, no differences were found between conditions related to the mitigating factors scenarios or reported emotions (positive

or negative) between observed conditions. A difference was observed between the overall emotional state of observers after viewing game play with more observers reporting feeling more negative emotions than positive emotions.

These findings build upon the previous works of Boyle et al. (2008) and the third person perception effect. Matching with the theories presented in Boyle et al. (2008), observers reported violent in-game actions made by characters as indicators of future violent or negative behaviors in real life. Aligning with the FAE, observers were more likely to view the negative behaviors of the in-game characters as indicators of negative personality traits of the player, the individual controlling the character. Without knowledge of the player or their situation, the observer was more likely to assume the negative behaviors/choices were reflective of the player's moral character in the real world.

## Contributions

The current study bridges psychology, ethics, and game design, showing how players' in-game behaviors influence perceptions of their real-world morality, as seen through psychological lenses like the 'you are what you eat' heuristic and fundamental attribution error. This integration offers novel insights for game design, emphasizing the ethical implications of narrative choices and their impact on player perception, thereby marking a significant interdisciplinary contribution to these fields. First, this research provides evidence that observers perceive player morality based on their in-game behaviors, extending the work of Lin (2011) and aligns with the use of *you are what you eat* heuristic. Secondly, it builds upon Walter and Tsftati (2018) and Boyle et al. (2008) by exploring the impact of observer perceptions on player personality traits and future behaviors. These findings are congruent with the common psychological theory of FAE in that observers are prone to link the negative behaviors made by an individual with a perception of negative personal morality and personality traits, rather than situational factors such as being a character within game play.

## LIMITATIONS

Limitations to the current study include similar limitations experienced by previous studies including a small sample size for Study 1 and the relatively brief exposure time of participants to gameplay videos in Study 1 and Study 2. Though the limitation of small sample size was experienced in Study 1, Study 2 increased the sample size from 51 to 227 reducing the negative impact of a small sample size on the interpretation of results. Additionally, our sample demographics limit its generalizability across



different cultural contexts, which may have varying moral perceptions and philosophies. For both Study 1 and 2, observers were limited in their exposure to gameplay footage, Study 1 included 15 minutes and Study 2 included 12 minutes. Though this exposure to stimulus materials is brief, it is like much of the previous gameplay research which is typically less than 30 minutes. As has been found in previous literature with brief exposure times, even after only limited observation, observers rated violent behavior as being representative of the player's morality (Boyle et al., 2008; Lin, 2011; Gao et al., 2017).

## FUTURE DIRECTIONS

Following Boyle et al. (2013) research investigating pre-existing beliefs impact on third person perceptions, future research should address pre-existing beliefs of laypersons/observers of those who play violent video games in relation to their observations of the player versus character perceived morality within violent video game play. This will further aid in understanding whether laypersons are capable of changing pre-existing beliefs and attitudes. Future research could also explore how cultural norms and values shape moral judgments in video game environments, broadening our understanding of culture's impact on moral perceptions. Research should also extend exposure time to stimulus gameplay to investigate the impact of long-term exposure on observer perceptions of player morality. Conceivably, longer exposure times may reduce the strength of the third person effect as observers are presented with more information about the situation, context, and player. Furthermore, observers may become desensitized to the violent and negative behaviors as exposure times increase thereby reducing the association between in-game character actions and the player.

## CONCLUSIONS

This research provides insights into how laypersons perceive player morality in violent video games, a perspective that is essential for both policymakers and educators. We call upon these key stakeholders to consider our findings in their practices and policies. For policymakers, this means crafting regulations and public guidance that are informed by an understanding of how video game content is perceived in terms of morality and real-world implications. For educators, these insights offer an opportunity to develop more effective educational programs and discussions around media literacy, specifically addressing the complexities of interpreting video game content. By doing so, we can foster a more informed and nuanced approach to the societal impacts of video gaming. This research, therefore, not only contributes to academic discourse but also serves as a crucial foundation for actions that can enhance the social impact and understanding of video games in our society.

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## DECLARATION

- i) **Ethics approval and consent to participate**  
The research reported was conducted in accordance with the principles of research ethics established by the American Psychological Association.
- ii) **Consent for publication**  
The reported findings have not been previously published nor is the manuscript being simultaneously submitted elsewhere.
- iii) **Availability of Data and Material (ADM)**  
The data will be made available to any researcher for the purposes of reproducing the results of replicating the procedure. The data can be found at the Open Science Foundation at the following link [https://osf.io/gn6jh/?view\\_only=655fc988f1bf4b48b20dfb64aa0cfc83](https://osf.io/gn6jh/?view_only=655fc988f1bf4b48b20dfb64aa0cfc83).
- iv) **Competing interests**  
We have no conflicts of interest.
- v) **Funding**  
We have no financial support to disclose.
- vi) **Authors contributions**  
All authors contributed to the study conception and design, material preparation, data collection and analysis. The first draft of the manuscript was written by all authors and all authors commented on previous versions of the manuscript. All authors read and approved the final manuscript.

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