THE EFFECTS OF VIOLENT GAME ROLE TAKING AND PROVOCATION ON BEHAVIORAL AGGRESSION

The causal relation between violent video game play and increased aggression is well established (Anderson et al., 2010; Bushman, Rothstein, & Anderson, 2010). However, the qualities of these video games and how they cultivate aggression have been largely unexplored (Anderson et al., 2010). The intent of the current study was twofold: To examine the effect of player role on behavioral aggression following violent video game play and to determine why this relation has not been discovered in other methodological contexts. Participants were randomly assigned to read brief vignettes describing their character as either deviant (invading the planet) or heroic (saving the planet). Participants were also randomly assigned to receive either low provocation or high provocation from the potential target of aggression. Further, a no-game-play condition was included to determine baseline aggression in high and low provocation conditions. It was hypothesized that individuals playing a deviant character would be more aggressive following violent video game play compared to those playing a heroic character, but only under conditions of low provocation. The results indicated that those playing as a deviant character were no more aggressive than those playing as a heroic character. This was the case in both high and low provocation conditions. Additional findings and implications are discussed.

THE EFFECTS OF VIOLENT GAME ROLE TAKING AND PROVOCATION ON BEHAVIORAL AGGRESSION

by

Christopher L. Groves

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_____ Advisor

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_____ Member

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_____ Member

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_____

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Introduction

Despite continuing debate regarding whether video game violence causes aggression (see Bushman et al., 2010; Ferguson & Kilburn, 2010), there exists a large body of empirical evidence that confirms this phenomenon (Anderson, et al. 2010; Heusmann, 2010). These effects are found regardless of cultural, gender, and measurement differences (Anderson, et al., 2010). While there is a wealth of experimental data suggesting a causal effect, it is unclear whether the violent video game and aggression effect is general or limited to specific types of games. As some have noted, variation in violent video game characteristics may moderate the strength of the effect (Anderson, et al. 2010; Arbogast, Lishner & Groves, 2011). One such possible game characteristic is the role that the video game's protagonist fulfills.

As the video game industry continues to expand (Entertainment Software Association, 2012), character roles have become increasingly diverse. For many games, players no longer are limited to traversing a virtual landscape as the classic hero archetype but can select their protagonist based on a variety of motivations and characteristics. Two of the most common roles that these protagonists fulfill are the classic hero and the deviant character.

Individuals sit on the edges of their seats and get goose bumps when watching movies or reading books. They experience fear when protagonists are threatened (Vorderer, Wulff & Friedrichsen, 1996). They feel joy and melancholy when protagonists experience these emotions (Doveling, Scheve & Konijn, 2011; Wied,

Zillmann, & Ordman, 2004). It seems as though we are deeply influenced by the fictional characters to which we are exposed. We may assume their roles as we engage in the narratives to which they belong. Through this role assumption we may even modify our behavior (Cohen, 2001, Felson, 1996). One might speculate that the power of these roles may be even stronger within a video game context given the interactive nature of the medium. The following study is designed to examine the effects of this role taking. To be more specific, it examines how aggressive individuals behave following violent video game play as either a heroic or a deviant character. It also serves to replicate findings obtained in Spring of 2011 in which those playing a deviant character were significantly more aggressive than those playing a heroic character, but only when participants played alone and not with a partner. Further, it explicates the potential reasons for why this relation has not been discovered in previous research.

The General Aggression Model

To date, most research on violent video games and aggression uses the general aggression model (GAM) as the basis for forming hypotheses and predictions. It is a socio-cognitive, developmental model that uses situational, personological, and biological variables to provide a framework that incorporates several domain-specific aggression theories to predict aggression (DeWall & Anderson, 2009). In essence, the GAM combines a multitude of theoretical models of aggression to produce a single, dynamic model that accounts for any potential influence on aggression.

Information processing within the GAM can be broken down into three stages (see figure 1 on page 4). First, raw, sensory information is collected. Second, this sensory information influences cognition, affect, and arousal. Third, cognitive appraisal and decisions are made regarding behavioral outcomes. It is important to note that these appraisal processes include both automatic (immediate appraisal) and controlled (reappraisal) processes. Once the individual has performed the action, the behavior feeds back to the situation and personological inputs can then guide the next episodic cycle (DeWall &Anderson, 2009). In the present research, the constructs of interest are primarily ones which would fall within the first and third stage of the GAM model.

The application to the potential effects of game character role within violent video game contexts arises when considering appraisal processes. Individuals who participate in repeated acts of aggression within a violent video game context are continually rewarded for this behavior. These aggressive responses eventually become automatized and reappraisal of aggressive acts becomes less prevalent – this process then generalizes to other contexts outside of a violent video game setting:

> Findings [show] that through repeated practice and exposure, complex judgments and choices become automatized, requiring little or no mental energy or conscious awareness. A "shoot first, ask questions later" mentality may result from learning through repeated experience or cultural teaching that members of various groups represent threats and therefore should be perceived as dangerous even in neutral or ambiguous situations (Dewall & Anderson, 2009, p. 19).

It is possible that individuals who take on a deviant role may be more likely to adopt this "shoot first, ask questions later" mentality as a result of the duties and expectations associated with the role (e.g., there is no need to avoid killing innocent civilians in the game). In contrast, individuals who take on a heroic role may adopt a more selective "ask questions first, shoot later" mentality (e.g., only kill bad characters in the game). As explained by the GAM, this tendency, if repeated, may automatize the behavior which will then generalize to other contexts. This learning of aggressive tendencies is an aspect of the GAM that is an advancement over other models (Schmierbach, 2010). Figure 1 provides an illustration of a single episodic cycle as portrayed by the GAM.

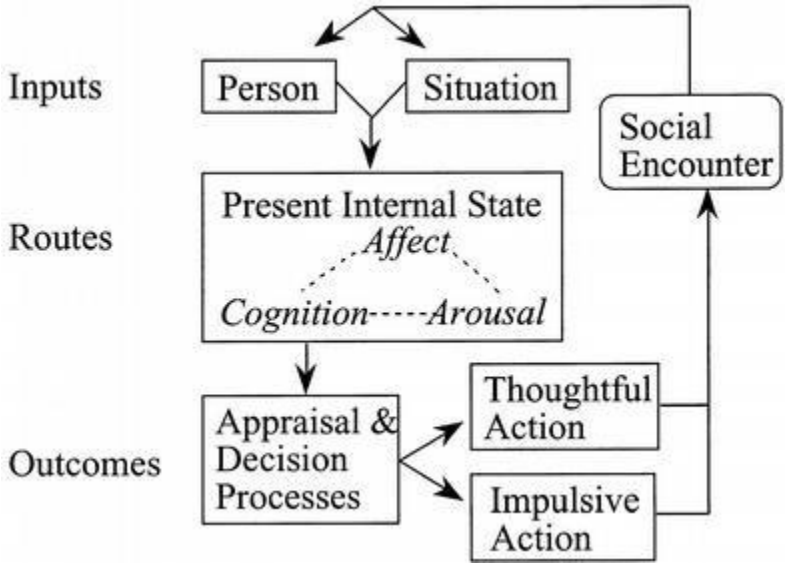


Figure 1. One episode cycle as conceptualized by the general aggression model. Adapted from "Violent Video Games: Specific Effects of Violent Content on Aggressive Thoughts and Behavior," by C. A. Anderson, N. L. Carnagey, M. Flanagan, A. J. Benjamin, J. Eubanks, J. C. Valentine, 2004, *Advances in Experimental Social Psychology*, *36,* p. 202. Copyright 2004 by Elsevier Inc.

Despite a theoretical basis for the hypothesized increased aggression as a result of playing violent video games depending on whether one takes on a heroic or deviant role, significant empirical differences between heroic and deviant roles have not been found following violent video game play. A recent meta-analysis is the only context, that I am aware, in which the effect of heroic and deviant role taking in violent video games on aggression has been investigated thus far. In this meta-analysis, 27 methodologically rigorous experimental studies were examined and coded for deviant or heroic role taking (Anderson, et al. 2010). No evidence of moderation was found; however, a closer look at the meta-analysis revealed a large portion of the studies included in this analysis utilized an increasing provocation pattern in the behavioral aggression measure. Typically, individuals are provoked in some form (e.g., given negative feedback on an essay or "blasted" with increasing noise volumes), before they are given the opportunity to retaliate (e.g., fill out an evaluation of a researcher who had previously criticized their work or return noise blasts of a selected volume level). This type of provocation may be responsible for the undiscovered differences between character role types.

Deviant and Heroic Roles

Before discussing this possibility, it is important to examine more fully the nature of the two roles under investigation. Traditional heroic roles typically include a series of characteristics that place limitations on aggressive behavior: heroes aggress only when it is required, they aggress in order to protect those who are close to them or are innocent,

and they ultimately value peace over conflict. The deviant role entails contrasting characteristics and motivations: the act of aggressing is intrinsically rewarding, aggression is used for personal gain, and conflict is valued over peace.

As individuals assume a role, they may come to adopt, at least to some degree, these characteristics and motivations. With a deviant role, one should aggress under the majority of contexts, whereas the heroic role implies aggression only under conditions of threat or unjust provocation. High provocation patterns that occur during the measurement of behavioral aggression are likely to activate this "defensive" tendency that the heroic role assumes and therefore may fit within the parameters required for a heroic player to aggress. In contrast, low provocation patterns are unlikely to call for aggression. Presumably, this difference is not as pronounced for the deviant role taker as the parameters for aggressive behavior are not limited to cases of defending oneself.

An additional question that remains unclear is the direction of the violent video game effect on aggression relative to the natural, baseline aggressive tendencies. This is evidenced by the scarcity of studies included in the most comprehensive meta-analysis to date (Anderson, et al., 2010) that contain a no-game-playing condition. For example, it is possible that nonviolent games, which are typically compared with violent games to create violent game play manipulations, evoke problem solving strategies and higher-order cognition that may in fact *reduce* aggression. Similarly, playing within a classic heroic role may produce positive concepts of the self that are closely related to their assumed role (e.g., integrity, pursuit of justice, honesty, etc…) and may thereby reduce

aggression. Consequently, to more fully understand the influence of violent player role on behavioral aggression following violent video game play, it is important to establish a behavioral baseline from which to examine the direction of effect.

Hypotheses

The purpose of the present research was to examine how violent game player role influences aggression following gameplay. It was hypothesized that playing a violent game while adopting a deviant role would produce higher behavioral aggression than would adopting a heroic role, but only if provocation by a potential target of aggression was low. In contrast, when provoked by the target of aggression, aggression would be high regardless of player role.

Method

Participants

One hundred fourteen participants were acquired using SONA system in which Introductory Psychology students from University of Wisconsin Oshkosh were enrolled. Participants received course credit or extra credit in return for participation. All participants were assigned to one of six conditions in a 2(provocation: high, low) x 3(game: deviant, heroic, no game) factorial design using randomized blocks.

Design

To test this hypothesis, a 2(provocation) x 3(character role) cell design was implemented. Participants were randomly assigned to play as a heroic character, play as a deviant character, or not play a game. They were also randomly assigned to receive either high provocation or low provocation from a potential target of aggression. Upon arrival, participants read a short vignette describing the character they would be playing. After a brief introduction to the game and controls, participants played for approximately 8 minutes. Participants were then asked to play a second game with an ostensible participant opponent whom they were able to "blast" with a selected noise volume and duration on winning trials; in contrast, the ostensible participant was able to "select" blast volumes and durations directed at the participant during losing trials. The ostensible

participant's selection of relatively low or high levels of noise on each trial constituted the manipulation of provocation. Behavioral aggression was measured by recording the intensity and duration of noise blasts selected to be administered to the ostensible participant opponent during each trial. Upon completion of the second game, participants were asked to fill out a questionnaire inquiring about their experiences during gameplay. Finally, participants were probed for suspicion and debriefed before being dismissed. It was predicted that participants who received the heroic vignette and received low noise blast levels on losing trials would administer lower intensity noise blasts and durations to the ostensible participant than would participants who received the deviant vignette or participants who received high noise blast levels on losing trials.

Procedure

Researchers were both male and female and they conducted experimental sessions with both male and female participants. The researcher met participants (individually) at a location separate from the testing room. Upon arrival, participants were led to the testing room by the researcher. Upon entry to the experiment room, participants read through and signed the consent form (Appendix A). Next, they were asked to read a written introduction to the study (Appendix B).

The introduction form provided a more thorough overview of the study and presented the cover story information. Participants were informed that the study was designed to determine what makes games enjoyable by examining single and multiplayer

game modes as well as various lengths of story lines. Participants also learned that all other participants in the study session were of the same sex. This was done to provide some control for gender catered behavior when interacting with other ostensible participants. They were also told that their identity would remain anonymous with regard to the other "participants" and the data they provided.

Manipulation of Player Role

Once participants read the introduction information, the researcher presented them with the first game. For participants randomly assigned to the no-game condition, the researcher immediately administered the behavioral aggression measure (see below). For all other participants, the researcher stated that they would be playing a modified version of Unreal Tournament 2004 as their first game. The researcher then assisted the participant in familiarizing themselves with the game for approximately five minutes. Participants were given information regarding the aspects of the gameplay including the purpose of the game (to eliminate as many enemies as possible), how to pick up new weapons, and how to replenish lost health points. The researcher then adjusted the mouse sensitivity appropriately until participants felt comfortable with character movement in the game. For the remainder of the five minute instruction period, the researcher stayed in the room to answer any questions that participants had. The researcher next returned participants to the main menu in preparation for the game play to begin.

Prior to playing the game, the researcher gave participants a brief description of the game and character they would be playing (Appendices C and D). They were told that because the study is focused on examining how the amount of story line affects enjoyment (as was mentioned in the introduction form), they should try to keep the description information in mind while playing the game. The researcher then removed the story line from an envelope and placed it in a display set up next to the participants' computer. The researcher did not examine the description page at any point throughout the study to maintain blindness to heroic and deviant condition. After the description page was displayed, the researcher told participants that he or she needed to check on the other individuals who were ostensibly participating in the same study (as stated in the introduction form) while the actual participant read through the description. The researcher then left the room for approximately two minutes before returning to continue with the study. Once the researcher returned, he or she began the eight minute game play period and informed participants that he or she would return once the eight minute limit had expired and that they do not have to open the door.

Measurement of Behavioral Aggression

After the eight minute game play period was completed, the researcher returned to the room and informed participants that the second game was to be played next. At this point, behavioral aggression was measured. Aggressive behavior was operationalized as the number of high noise levels selected by the participant to "blast" the opponent during

Taylor's Competitive Reaction Time Task (henceforth to be referred to as the CRT). The CRT is a computer program that requires participants to select a noise level and duration before clicking a "ready" button. Shortly after, a green box in the center of the screen appears (indicating that the participant's opponent is still selecting his or her noise level). The box then turns yellow and between one and two seconds later the box turns red. Participants were instructed to click the box as fast as they could once it turned red. Participants were told that their opponent is another participant but is actually the computer who is predetermined to win about half of the trials. If participants did not click the red box after two seconds, they lost the trial, if no click was made after three seconds, the trial was ended automatically with the participant losing the trial. These two mechanisms were included to reduce the chance that participants would realize that their ostensible partner was not a real person. Participants were able to select noise levels ranging from one (60 decibels [dB]) to 10 (105 dB). The length of exposure to these noise levels was also selected from one (0.5 seconds) to 10 (5 seconds). Prior to beginning the CRT, participants were exposed to the highest (10) and lowest (1) noise volume levels to demonstrate the range of noise blast intensity they and the ostensible participant could experience. As one might suspect, higher noise and duration levels were coded as higher aggressive behavior.

Several measures of aggressive behavior have been used in video game and aggression research. One of the popular options is having participants write a short essay before receiving criticism on their writing by the experimenter (provocation); afterward, participants are allowed to rate the experimenter or an essay written by the experimenter

(in which case, lower ratings of the experimenter or essay are coded as higher aggression) (Mahood, 2009). Other studies have recorded the number of "unnecessary kills" within the violent video game. However, as the violent video game literature has grown, researchers are beginning to standardize their behavioral aggression measure by using the CRT. As Anderson et al. (2010) point out, "high-quality experimental studies typically measure aggressive behavior using noise blasts, electric shocks, or hot sauce given to an ostensible partner (in the last case, the partner is known to hate spicy food)" (2010, p. 157). Further, the CRT has been demonstrated to possess strong construct validity with other indices of aggression, such as greater likelihood of being incarcerated and possession of genetic markers for aggression (Giancola & Parrott, 2008).

The researcher described how to play the CRT (which participants were told was called "Speedy Reflexes") before providing the story line information for the "Speedy Reflexes" game (which provided some reinforcement of the cover story). Again, the story line information was placed in the display next to the computer. The researcher then told participants that the game would inform them when it was complete and to open the door a crack in order to continue with the study.

Manipulation of Provocation

Participants randomly won approximately half of the reflex trials during the CRT. Upon losing one of these trials, participants who received high provocation experienced relatively loud "blasts" of noise for long durations (between 85 and 105 dB for between

3.5 and 5 seconds); those who received low provocation heard noise "blasts" at a lower volume for a shorter duration (between 60 and 80 dB for between 0.5 and 3 seconds). On trials in which the participant won, they believed they could administer a noise volume and duration between 60 and 105 dB that lasted from 0.5 to 5 seconds. A behavioral aggression score was created by averaging the volume and duration values across all 25 trials ($\alpha = .91$).

Once the CRT was completed, participants were asked to fill out two brief questionnaires (Appendices F and G). The questionnaire was divided into two primary sections. The first was regarding the first game that was played and served as a manipulation check for the character role assigned. To do this, participants were asked, "Based on the description of the game you were provided, how good or evil was your character?" The second questionnaire also served as a manipulation check for the provocation level they received. Specifically, participants responded to the question, "While playing the game, how aggressive did the other participant seem?" Again, the researcher left the room while the questionnaire was completed and participants were instructed to open the door a crack when finished.

When participants had finished the questionnaire and the researcher returned to the room, the researcher began the debriefing process. The researcher followed a script that was designed to assess participants' reactions to the study, determine a level of suspicion, and dehoax participants (Appendix H). During the dehoaxing portion of the debriefing process, participants were asked to read a short debriefing form that explained,

in more depth, what the study was actually about (Appendix I). Finally, participants were thanked for their time and dismissed.

Analyses

Manipulation of Character Role

Preliminary analyses included manipulation checks for provocation among all participants and character role for all participants who played the violent game. To check whether the manipulation of character role was successful, a 2(provocation: high, low) x 2(game: deviant, heroic) factorial Analysis of Variance (ANOVA) was conducted with perceived character valence as the dependent variable. If character role was successfully manipulated, a main effect for character role and no interaction with provocation level was expected. As predicted, those who adopted a heroic role perceived their character as more positive compared to those who played the deviant character, $F(1, 78) = 45.55$, $p < .001$, $\eta^2 = .37$. Also, there was no detected interaction with provocation, $F(1, 78) = .18$, $p = .67$, $\eta^2 = .002$. Further, there was no main effect for provocation, $F(1, 78) = .87$, $p = .63$, $\eta^2 = .002$.

Manipulation of Provocation

To determine whether provocation was successfully manipulated, a 2(provocation: high, low) x 3(game: deviant, heroic, no game) factorial ANOVA was conducted with perception of opponent's aggressiveness during the CRT as the dependent variable. If provocation was successfully manipulated, a main effect for

provocation and no interaction with character role was expected. The analysis confirmed that those under high provocation conditions perceived their opponent as more aggressive, $F(1, 113) = 58.80$, $p < .001$, $\eta^2 = .33$. An unexpected, significant interaction with character role was also found, $F(2, 113) = 4.18$, $p = .02$, $\eta^2 = .05$. Follow-up contrasts were conducted and determined that the difference between low and high provocation was smaller, albeit still significant, for those who did not play the game, $F(1, 113) = 7.23$, $p = .01$, $d = .95$, compared to those who played the game as a heroic character, $F(1, 113) = 14.58$, $p < .001$, $d = 1.14$, or as a deviant character, $F(1, 113) = 48$, $p < .001$, $d = 2.40$.

Behavioral Aggression

The primary analyses were conducted with a 2(provocation: high, low) x 3(game: deviant, heroic, no game) factorial ANOVA followed by a planned contrast among the violent game conditions to test the hypothesized interaction between character role and provocation. The results indicated that those receiving high provocation were subsequently more aggressive than those receiving low provocation, $F(1, 113) = 77.07$, $p < .001$, $\eta^2 = .42$. However, neither the game main effect, nor the Game x Provocation interaction were significant, $F(2,113) = .26$, $p = .77$ and $F(2, 113) = 1.43$, $p = .24$, respectively. This analysis was followed by an additional 3 vs. 1 contrast that compared those who played as a heroic character in the low provocation condition with those who played as a deviant character and those who played either the heroic or deviant character

in the high provocation condition. The results indicated that the combined high provocation heroic, high provocation deviant and low provocation deviant were significantly more aggressive following game play compared to low provocation heroic players, $F(1, 113) = 31.75$, $p < .001$ $\eta^2 = .33$. However, the residual remained statistically significant, $F(1, 113) = 29.95$, $p < .001$. This significant residual, along with examination of means suggest that this effect was primarily driven by a significant provocation main effect.

Table 1

Means and Standard Deviations for Primary Dependent Variable and Manipulation Checks

Character Role		Heroic Character		Deviant Character		No Game Played	
Provocation Level		Low Prov.	High Prov.	Low Prov.	High Prov.	Low Prov.	High Prov.
Aggression	*M*	*3*.71	6.20	3.92	6.28	4.40	5.94
	SD	1.37	1.33	.88	.91	1.55	1.55
Perception of Opponent's Aggression	*M*	3.43	5.60	2.17	6.25	2.68	4.43
	SD	1.96	1.85	1.54	1.83	1.92	2.03
Perception of Character's Valence	*M*	1.81	1.80	-.89	-1.3	-	-
	SD	1.63	1.47	2.19	2.36	-	-

Discussion

The present experiment tested the hypothesis that video game players undertaking a heroic role would be less aggressive than those undertaking a deviant role but only under low provocation conditions. The results failed to find support for the hypothesis; those playing the violent video game under a heroic role exhibited no differences in behavioral aggression following gameplay compared to those playing under a deviant role. This was the case under both high and low provocation.

The simplest explanation for this finding is that character role in violent video games does not influence subsequent aggression following gameplay. However, a number of other possibilities exist. First and foremost, it is possible that the current study failed to detect a difference in aggression between roles due to the subtlety of the role manipulation. Typically, video games involve story telling in a much more rich and diverse format than that employed in the current study. Some of the common features within video games that reinforce character roles are character appearance, direct and ambient storytelling, dialogue, environmental appearance, and the availability of choice regarding events in the game (e.g., assisting the victims vs. assisting the criminals). The manipulation of character role in the current experiment may simply have lacked the diversity and depth of stimuli required to elicit differential responses between participants playing as either role.

The availability of choice regarding the role that video game players take warrants further discussion. It should be noted that players make implicit associations between the

character and the self (Klimmt, et al., 2010), even when character roles are assigned. However, it is difficult to tell whether these effects influence behavior, and if so, how long they are likely to last as they may simply dissipate before behavioral aggression can be measured. Further, one cannot know precisely how the availability of choice might affect players' association with the role. It may be the case that choice is a prerequisite for implicit associations establishing themselves as strong enough to influence behavior. Dissonance theory (Festinger, L., 1957), might predict that those who choose their role may continue to behave in accordance with that role to reduce dissonance that may occur due to a failure match behavior with stated intentions.

A third possibility is that the provocation levels used in the current study were inappropriate for detecting differences between heroic and deviant role takers. This speculation primarily comes from unpublished research from the current lab in which differences between heroic and deviant players were indeed found (Groves, C. L., Lishner, D. A., & Chrobak, Q., 2011). In this case, provocation was not clearly distinguished between low and high but was instead relatively "moderate." It may be possible that the differences between these roles may only surface when provocation is seen as more ambiguous. When the ostensible CRT opponent selects consistently high or low blasts, the motivations behind their behavior might be easy to interpret. A mildly provoking player might be most likely to do so because they wish to avoid retaliatory high noise blasts; leading both heroic and deviant players to grant the participants their wish. Meanwhile, a highly provoking player may be selecting high noise levels because they wish to win the game and are not deterred by the discomfort of the other player;

leading both heroic and deviant players to subsequently respond with aggression. However, when the noise volumes selected by an ostensible participant opponent become more erratic and vary between high and low volumes, the perceived intentions of the opponent may become more ambiguous – potentially leading deviant role takers to interpret their behavior as more aggressive compared to heroic role takers.

This ambiguity hypothesis may be consistent with the GAM. The GAM might predict that the manipulation of role affects internal states (e.g., players adopt the characteristics and motivations of the assigned role); subsequently, those who play as a deviant character would be more likely to bypass controlled decision making when interpreting the behavior of others. Instead, deviant players may automatically attribute ambiguous behavior to hostile intentions. In contrast, those adopting a heroic role may undertake more controlled decision making and decide that the behavior of the other is not necessarily intended to harm the participant.

While the current research isn't designed to directly test this hypothesis, it is the case that further tests could be conducted to examine this possibility. Specifically, it is possible that of the 25 total trials in the CRT, behavior in the earliest trials could serve to illuminate some of the effects of ambiguous provocation. In early trials of the CRT, the participant has not been exposed to a long series of decisions made by their ostensible participant opponent. Therefore, it may be less likely that participants have drawn firm conclusions regarding the intentions and motivations of their opponent. Consequently, because participants do not have enough information to develop attributions to their

opponent's behavior, they may view their behavior as more ambiguous. If this is the case, differences may surface in early trials of the CRT, but eventually fade as participants grow more aware of their opponent's motivations. However, while this ambiguity hypothesis may explain the inconsistency in findings between the present study and that of Groves et al. (2011), it may be that the Groves et al. findings resulted from a Type I Error.

Despite this, the results of the current study add value to the existing violent video game and aggression literature in several ways. First, future researchers interested in the potential moderation of character role will have an understanding of how player role can be manipulated; more importantly, that subtle, brief vignette manipulations may not serve as a potent enough stimuli to elicit behavioral differences between roles. Second, there still exists little information regarding baseline aggression measures in the video game violence and aggression literature. Note that the current study cannot reaffirm nor refute the relationship between the violent content in video games and aggression because of the exclusion of a non-violent game comparison condition. However, it should be noted that no significant differences were found between those who played the game as a heroic character or deviant character, or those who did not play a game. This suggests that non-violent comparison conditions *may* in fact reduce aggression from baseline. This might be the case only under the assumption that the no-game condition genuinely serves as a true baseline for aggressive behavior. Of course, future research is needed to better understand baseline aggressive behavior before making definitive conclusions regarding the direction of the video game violence and aggression effect. Finally, the current study

underscores the importance of examining the influence of varying provocation patterns when investigating moderator interactions within violent video games.

APPENDIX A

Consent Form

UWO Department of Psychology Consent Form

The Department of Psychology supports the practice of protecting human participants in research. The following information is provided so that you can decide whether you wish to participate in the present study. Your participation is solicited but is strictly voluntary.

If you decide to participate in this study, you will be asked to briefly play several computer video games. Games will consist of both single-player and multi-player game play. Your reactions to playing the games will be assessed by questionnaire.

Some video games used in the study contain action violence (ESRB rating of Mature 17+ for "blood and gore, intense violence, mild language") or loud but brief noise, which some may find uncomfortable to play. Although participation in this study will not directly benefit you, we believe that the information you provide will be useful in furthering our understanding of how people react to playing video games.

If you decide to participate, you will be free to withdraw at any time and will receive credit for your participation. If you decide not to participate in this study, please let the researcher know and she or he will excuse you from the study. You do not need to tell the researcher your reasons for choosing not to participate. If you decide to withdraw from the study, any information collected from you up to that point will be destroyed.

Any responses you provide will be confidential and will not be associated in any way with your name. No information that could identify you will be released in any form.

If you have any questions, please ask us or contact:

Quin Chrobak, Ph.D. (chrobakq@uwosh.edu; Phone: 920-424-2307)
or
David A. Lishner, Ph.D. (lishnerd@uwosh.edu; Phone: 920-424-2301)
Psychology Faculty Supervisors
Department of Psychology
University of Wisconsin Oshkosh
Oshkosh, WI 54901

If you have any complaints about your treatment as a participant in this study, please contact the following individual:

Chair, Institutional Review Board for
Protection of Human Participants
c/o Grants Office
UW Oshkosh
920-424-1415

Although the chairperson may ask for your name, all complaints are kept in confidence.

Consent Statement: I have received an explanation of the study and agree to participate. I understand that my participation in this study is strictly voluntary, and that I may withdraw at any time.

_____ _____

Name Date

This research has been approved by the University of Wisconsin Oshkosh IRB for the Protection of Human Participants for a one year period, valid until (date of approval).

APPENDIX B

Introduction Form

Video Game Enjoyment Study: Introduction

Video games are one of the fastest growing sectors of the entertainment industry today. Despite the vast number of people that play these games, little research has been done to understand what qualities of these games lead to the greatest levels of enjoyment. Considering the rapid growth of the video game industry and the amount of leisure time devoted to playing video games, the purpose of the current study is to better understand what it is that makes video games enjoyable to different people.

Given the complexity of video games, there are many video game factors that may affect whether someone likes or dislikes a game. In this study, our goal is to focus on several of these factors, which are described below:

1. Single-player vs. multiplayer game play mode. Some games are played alone, while others are played with one or more additional players.

2. Elaborate storyline vs. simple storyline vs. no storyline. Some games have very elaborate storylines that describe the purpose of the players' actions in great details, whereas other games have very simple storylines that describe the purpose of the players' actions in very little detail. Still other games have no storyline.

What Will Happen in this Study?

In order to examine these factors you and two other participants will be asked to play three different games. To examine the role of single player vs. multiplayer game play, you will be asked to play two games with one of the other participants. For the third game, you will be asked to play by yourself. Of the three games, one will have an elaborate storyline, one will have a simple storyline, and one will have no storyline. You will be given information about the storyline (or lack thereof) along with instructions for game play prior to playing each game. Your reactions to playing the games will be assessed by questionnaire at various points in the study.

Because other indirect factors such as time of day, day of week, time of semester, and weather may influence reactions to game play, we run three participants at the same time during each study session. This allows us to control for these indirect factors while running all player mode and storyline conditions in a single session. Also, because in real life multiplayer gaming, one's actual identity is typically not known by others, we have designed the study to ensure that your actual identity remains anonymous to the other participants. Participants are recruited using three separate study codes, are met at different locations in the building, and are given no identifying information about each so that each participants' identity will remain anonymous. Once the study is finished, each participant will leave at slightly different times so that you will never meet or interact with the other participants.

Game Acknowledgments and Disclaimers

The games you will play in this study are copyrighted by Midway Entertainment. We are required by law to make note of this. These games are not available for public use and some have been modified for us by Midway Entertainment using the Unreal Tournament 2004 engine for

research purposes only. Although Midway Entertainment is entitled to a summary of the results, our agreement with them permits us to report the results in scientific and other public forums regardless of the research outcomes. Furthermore, for ethical reasons, we will maintain the anonymity of our participants. As such, no identifying information will be linked to your responses in this study or will be passed along to Midway Entertainment for marketing purposes.

At this time, please open the door to let the research assistant know that you are ready to continue.

APPENDIX C

Game Description: Deviant Character

Game Information

Game: **Rogue Assault**

Mode: **Single-Player**

Storyline: **Simple**

Storyline Description:

> **You are feared throughout the known worlds. Bowing to no authority or law, you have embarked on a quest to plunder the riches of the galaxy. Your goal is to crush all those who stand before you, through force of arms using any weapon at your disposal. Destroy all who resist you; give no mercy.**

APPENDIX D

Game Information: Heroic Character

Game Information

Game: **Rogue Assault**

Mode: **Single-playe**r

Storyline: **Simple**

Storyline Description:

> **Rogue warriors have invaded your peaceful homeworld. Unprovoked, they seek to harm your people and plunder the riches of your world. Your goal is to defend against these invaders through force of arms using any weapon at your disposal. Destroy all who would seek to bring ruin or harm to your people.**

APPENDIX E

Game Description: Speedy Reflexes

Game Information

Game: **Speedy Reflexes**

Mode: **Multi-player**

Storyline: **None**

Storyline Description: **None**

APPENDIX F

Questionnaire: First Game

Game Reactions Questionnaire

Game: **Rogue Assault**

Mode: **Single-playe**r

Storyline: **Simple**

Directions: Please answer each of the following questions.

1. How enjoyable was it to play this game?

Not at all								Extremely enjoyable
1	2	3	4	5	6	7	8	9

2. How fun was it to play this game?

Not at all								Extremely fun
1	2	3	4	5	6	7	8	9

3. How willing would you be to play this game if offered another opportunity to do so?

Not at all								Extremely willing
1	2	3	4	5	6	7	8	9

4. To what extent did you like the game graphics?

Not at all								Very much
1	2	3	4	5	6	7	8	9

5. How realistic did the graphics seem?

Not at all								Extremely realistic
1	2	3	4	5	6	7	8	9

6. How realistic did the environment portrayed in the game seem?

Not at all								Extremely realistic
1	2	3	4	5	6	7	8	9

7. How realistic did your character seem?

Not at all								Extremely realistic
1	2	3	4	5	6	7	8	9

8. Overall, how realistic did the game seem?

Not at all Extremely realistic
1 2 3 4 5 6 7 8 9

9. How violent did the game seem?

Not at all Extremely violent
1 2 3 4 5 6 7 8 9

10. How aggressive did the game make you feel?

Not at all Extremely aggressive
1 2 3 4 5 6 7 8 9

11. How aggressive were you while playing the game?

Not at all Extremely aggressive
1 2 3 4 5 6 7 8 9

12. How mentally engaged were you while playing the game?

Not at all Extremely mentally engaged
1 2 3 4 5 6 7 8 9

13. How emotionally engaged were you while playing the game?

Not at all Extremely emotionally engaged
1 2 3 4 5 6 7 8 9

14. To what extent was your heart racing while playing the game?

Not at all A lot
1 2 3 4 5 6 7 8 9

15. To what extent did you feel anxious while playing the game?

Not at all Extremely anxious
1 2 3 4 5 6 7 8 9

16. To what extent did you feel frustrated while playing the game?

Not at all								Extremely frustrated
1	2	3	4	5	6	7	8	9

17. How difficult was the game to play?

Not at all								Extremely difficult
1	2	3	4	5	6	7	8	9

18. To what extent did you feel guilty while playing the game?

Not at all								Extremely guilty
1	2	3	4	5	6	7	8	9

19. Based on the description of the game you were provided, how good or evil was your character?

Extremely evil				Neither evil nor good				Extremely good
-4	-3	-2	-1	0	1	2	3	4

20. While playing the game, how good or bad did you feel your character was?

Extremely bad				Neither bad nor good				Extremely good
-4	-3	-2	-1	0	1	2	3	4

21. While playing the game, how good or bad did you feel your actions were?

Extremely bad				Neither bad nor good				Extremely good
-4	-3	-2	-1	0	1	2	3	4

22. To what extent did you enjoy playing your game character?

Not at all								Extremely
1	2	3	4	5	6	7	8	9

23. While playing the game, how much did you want to be like the character you were playing?

Not at all								Very much
1	2	3	4	5	6	7	8	9

APPENDIX G

Questionnaire: Second Game

Game Reactions Questionnaire

Game: **Speedy Reflexes**

Mode: **Multi-playe**r

Storyline: **None**

Directions: Please answer each of the following questions.

1. How enjoyable was it to play this game?

Not at all								Extremely enjoyable
1	2	3	4	5	6	7	8	9

2. How fun was it to play this game?

Not at all								Extremely fun
1	2	3	4	5	6	7	8	9

3. How willing would you be to play this game if offered another opportunity to do so?

Not at all								Extremely willing
1	2	3	4	5	6	7	8	9

4. To what extent did you like the game graphics?

Not at all								Very much
1	2	3	4	5	6	7	8	9

5. How realistic did the graphics seem?

Not at all								Extremely realistic
1	2	3	4	5	6	7	8	9

6. How realistic did the environment portrayed in the game seem?

Not at all								Extremely realistic
1	2	3	4	5	6	7	8	9

7. Overall, how realistic did the game seem?

Not at all								Extremely realistic
1	2	3	4	5	6	7	8	9

8. How violent did the game seem?

Not at all								Extremely violent
1	2	3	4	5	6	7	8	9

9. How aggressive did the game make you feel?

Not at all								Extremely aggressive
1	2	3	4	5	6	7	8	9

10. How aggressive were you while playing the game?

Not at all								Extremely aggressive
1	2	3	4	5	6	7	8	9

11. How mentally engaged were you while playing the game?

Not at all								Extremely mentally engaged
1	2	3	4	5	6	7	8	9

12. How emotionally engaged were you while playing the game?

Not at all								Extremely emotionally engaged
1	2	3	4	5	6	7	8	9

13. To what extent was your heart racing while playing the game?

Not at all								A lot
1	2	3	4	5	6	7	8	9

14. To what extent did you feel anxious while playing the game?

Not at all								Extremely anxious
1	2	3	4	5	6	7	8	9

15. To what extent did you feel frustrated while playing the game?

Not at all								Extremely frustrated
1	2	3	4	5	6	7	8	9

16. How difficult was the game to play?

Not at all								Extremely difficult
1	2	3	4	5	6	7	8	9

17. To what extent did you feel guilty while playing the game?

Not at all								Extremely guilty
1	2	3	4	5	6	7	8	9

18. To what extent did you enjoy playing the game with the other participant?

Not at all								Very much
1	2	3	4	5	6	7	8	9

19. While playing the game, how good or bad did you feel the other participant was?

Extremely bad				Neither bad nor good				Extremely good
-4	-3	-2	-1	0	1	2	3	4

20. While playing the game, how aggressive did the other participant seem?

Not at all								Extremely aggressive
1	2	3	4	5	6	7	8	9

21. How protective did you feel toward the other participant?

Not at all							Extremely protective	
1	2	3	4	5	6	7	8	9

22. How much did you like the other participant?

Not at all							Very much	
1	2	3	4	5	6	7	8	9

23. How similar to you did you perceive the other participant was?

Not at all							Extremely similar	
1	2	3	4	5	6	7	8	9

24. To what extent did you perceive yourself and the other participant to be part of the same group?

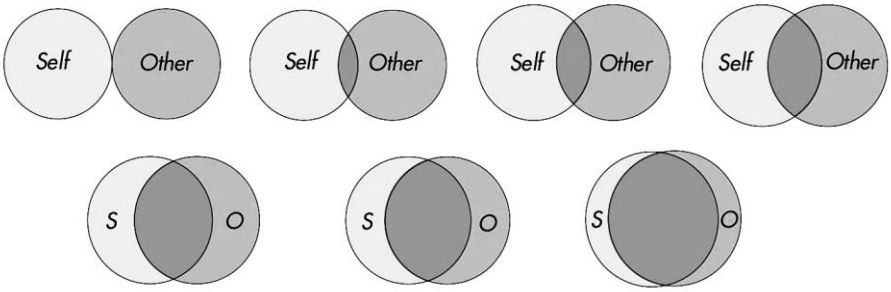
Not at all								Very much
1	2	3	4	5	6	7	8	9

25. To what extent would you use the term "we" to describe yourself and the other participant?

Not at all Very much
1 2 3 4 5 6 7 8 9

26. Below are seven pictures that depict possible ways of viewing the relationship between two people. Please circle one of these seven pictures that best indicates the extent to which you feel that you and the other participant are one.

Circle the picture below which best describes your relationship



APPENDIX H

Debriefing Script

PHASE IV: Debriefing

Instructions:

I. Assess Participant Reactions

Thank you for completing the questionnaire. It still looks like we are waiting for that third game to be ready so I think this might be a good time to get some general reactions to the study so far. Would it be okay if I wrote down any comments you may have?

[Participants almost always answer "yes" to this question.]

Researcher: Great! So, what are your reactions to study so far?

[Any comments made by participant are written down. This open-ended question is followed by more specific questions about different aspects of the study if the participant does not spontaneously discuss them. For example, the researcher should ask about the following:

- What did you think about the first video game? What were your reactions to playing it?

  What did you think about your partner (if in the multiplayer condition)?

  What did you think about the game description that you read?

- What did you think about the second video game? What did you think about your opponent?

  Do you think the way you played the second game was affected in any way as a result of playing the first game?

- If participants mention something that may be of interest to us, follow it up by asking more specific questions (e.g., talks about difficulty or frustration – ask them what was frustrating or difficult; talks about difficulty trying to

keep story in mind while playing – ask what about playing made it difficult to keep the story information in mind; etc…)

- Assess the participant's level of suspicion throughout this process (do not directly ask how suspicious they were). By the end of this section, you should be able to provide on a 0-5 scale, how suspicious the participant was.

- 0 – Not suspicious at all

- 1 – General suspicion, (e.g., "Well, it was a psychology study, I assumed there was something you weren't telling me")

- 2 – Specific suspicion that is irrelevant to the study, (e.g., "Well I thought you might be trying to figure out how playing in a small room might affect our reaction times")

- 3 – Specific suspicion that is relevant to the study but likely did not affect results, (e.g., "Well I thought that you might be trying to figure out how the type of character we play affects us but I only thought about it after we finished playing the games")

- 4 – Specific suspicion that is relevant to the study and likely *did* affect the results, (e.g., " Well, when I read the character description, I thought it was weird that we read about a bad guy, I thought that there might be people who read about a good guy character")

- 5 – Participant essentially figures out the study (this very rarely happens) and mentions all or nearly all deceptive elements involved in the study.

[At this point begin leading into Part II: Dehoaxing.]

Again – the suspicion rating should be complete prior to reaching this stage in the debriefing.

Researcher: At any point during the study did you think there was something more to the study? Something I haven't told you so far?

Can you think of any other aspects of the study that seems strange or unusual?

- If they begin to figure out the study: "Great! As you are starting to figure out, there is more to the study then you were originally told. What I'd like to do now is have you read over some information that will explain in more depth what the study was about. I will leave you alone to read over this information. When you are finished reading it, just open the door a crack and I will answer any additional questions you might have about the study."

- [If yes, and participant brings up an irrelevant deception in study . . .] That actually wasn't going on in this study, but you are on the right track! As you are starting to figure out, there is more to the study then you were originally told. What I'd like to do now is have you read over some information that will explain in more depth what the study was about. I will leave you alone to read over this information. When you are finished reading it, just open the door a crack and I will answer any additional questions you might have about the study."

- [If no, then . . .] That's good! Actually, there is more to the study then you were originally told. What I'd like to do now is have you read over some information that will explain in more depth what the study was about. I will leave you alone to read over this information. When you are finished reading it, just open the door a crack and I will answer any additional questions you might have about the study."

II. Dehoax [Give Debriefing Information to participant and leave him or her to read it over.]

III. Wrap Up

[Next, return and sit with participants.]

Researcher: Okay, now that you have read everything about the purpose of this study do you have any additional questions or concerns? As you can see there were some misleading aspects of this study. Do you understand the reasons for including those aspects and are you okay with that?

[If they have any questions or comments, address them. If they seem upset in anyway, talk with them more about their concerns in a validating way until you feel that they feel okay about their performance. If after you try to make them feel better they still seem upset of uncomfortable, offer to let them contact me.]

Researcher: Do you have any other questions or comments at this time? Can you think of any ways that we can improve the study?

Researcher: Before you leave I just wanted to remind you that your performance on the Speedy Reflexes games was determined by the computer and was not in any way based on your actual ability. I mention this because sometimes participants who are given false information about their performance continue to be influenced by the false information after the study is over. This is called the "perseverance effect." However, research suggests that telling participants about a possible perseverance effect actually eliminates the effect, which is why I am telling you about it now. Do you have any questions about this?

Researcher: Finally, the last thing we ask is that you not discuss this study with anyone, at least until the end of the semester, so

that other people have the opportunity to experience the study in a realistic manner – it's very important that other people who participate in this study are able to experience it in a genuine manner. Would that be okay with you? [Make sure to get verbal agreement.]

APPENDIX I

Debriefing Form

Video Game Enjoyment Study: Debriefing

Thank you for participating in this study. The purpose of this form is to provide you with more in-depth information about the study. The actual purpose of this study is not to examine video game enjoyment. Rather, the actual purpose of this study is to examine how playing violent video games affects one's reactions toward other people. Specifically, we are interested in understanding whether people react differently to one another after playing a violent game (a) either as a good character or as an evil character and (b) when they are provoked or not.

To examine this issue we had all participants play a game character in a violent video game (Rogue Assault) and then play a competitive video game against "another participant" (Speedy Reflexes). We randomly assigned participants to read one of two possible violent video game descriptions. In one description the game character is portrayed in a manner to make the character seem either relatively good (protecting against invaders) or relatively bad (invading a planet and harming its citizens). We also randomly assigned participants to either play a version of speedy reflexes that either provoked or did not provoke the player. This resulted in four experimental conditions: deviant/unprovoked, good/unprovoked, deviant/provoked, and good/provoked. By having these four different conditions, we are able to compare how the different conditions affect the intensity and duration of noise blasts delivered to another person in the "Speedy Reflexes" game.

As you may have guessed by now, there were a number of misleading things that you were told about the study. First, the purpose of the study was not to examine factors that affect game play enjoyment. Rather, the purpose was to examine the factors mentioned in the previous paragraph. Second, there actually were no other participants other than you in the study. In the Speedy Reflexes game you actually played against the computer, which was programmed to win and lose a certain number of times. The purpose for giving you this misleading information was not to trick you. Rather, it was given to you to allow us to vary the different character roles (good vs. evil character) and provocation level in a manner that would make the situation seem as real and as engaging as possible. If we told participants the full truth about the purpose of the study in the beginning, then they may experience the situation as fictional and cause participants to react very differently from how they would react in real life situations. Also, in some circumstances, if participants know about the actual purpose of a study, then they may feel compelled to report their reactions or behave in an untruthful manner. For these reasons, when psychologists examine certain psychological processes they may withhold some information about a study or provide participants with some information about the study that is misleading. We realize that you may feel a bit uncomfortable about having been told misleading information, but we want to assure you that it only was done to ensure that your experience in this study was as realistic as possible. Furthermore, it is important to remember that there is no correct or incorrect behavior or response to any of the questionnaires or materials in this study, and that your identity will not be connected to any of your responses. However, if you still have any concerns about this study, then please speak with the research assistant about your concerns or contact Dr. Quin Chrobak (chrobakq@uwosh.edu) or Dr. David Lishner (at lishnerd@uwosh.edu). Either of these individuals will be more than happy to talk with you about any concerns you may have.

Again, thank you very much for your participation. We value the time and the energy you spent in this study and it is our hope that the data you have provided will help us to better understand human psychology.

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