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SHIFTS IN ACCEPTANCE OF TYPE-SPECIFIC VIOLENCE AS AN OUTCOME OF CHARACTER-ROLE IN VIDEO GAMES

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SHIFTS IN ACCEPTANCE OF TYPE-SPECIFIC VIOLENCE AS AN OUTCOME OF CHARACTER-ROLE IN VIDEO GAMES

By

Matthew N. Grizzard

A THESIS

Submitted to Michigan State University in partial fulfillment of the requirements for the degree of

MASTER OF ARTS

Communication

ABSTRACT

SHIFTS IN ACCEPTANCE OF TYPE-SPECIFIC VIOLENCE AS AN OUTCOME OF CHARACTER-ROLE IN VIDEO GAMES

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Research on violent video games has largely focused on differences in outcomes as a function of violent vs. non-violent games. The current experiment examines the effects of narrative role (hero/villain) of a video game character within a violent game on acceptance of violent behaviors after game play. It was predicted in accordance with social cognitive theory that acceptance of type-specific violence (i.e., lawful or criminal) would interact with the character-role assumed in the game such that acceptance of lawful violence would be higher and acceptance of criminal violence would be lower for participants who played the heroic character than participants who played the villainous character. Results indicate an interaction between the role of a game character and the acceptance of specific types of violence (lawful/criminal) in the opposite direction of what was predicted. This interaction is discussed in terms of a lawfulness effect, whereby lawful violence became more acceptable and criminal violence became less acceptable after playing a villainous character in a video game.

ACKNOWLEDGMENTS

I am extremely grateful to my advisor, Ron Tamborini, whose guidance and tireless dedication helped me conceptualize and complete the following project.

I would also like to thank Wei Peng and John Sherry for serving on my committee and providing excellent insights throughout the process.

I am also grateful to my entire family. Your constant help and support made it possible for me to pursue my Master's degree. Thank you Mom; Dad; Michael; Grandma and Papa Grizzard; Grandma Rodgester; Pam and Pete; Dan and Erin; Pat and Jay; Heather; Karen and Hardee; Kim, Calvin, and Dylan; Tina, Jerry, Chase, and Stephanie.

Thanks to my friends, Dan, Ashley, Robert, Rikki, and Jack, who provided me with much needed distractions from work.

Last, but not least, I would like to thank my wife, Alison. Thanks for leaving the warm summers of North Carolina for the cold winters of Michigan. I could not have done it without you, and I love you very much.

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Shifts in acceptance of type-specific violence as an outcome of character-roles in video

games

Introduction

Increases in acceptance of violence are posited to be the result of a social learning process where viewers come to adopt the beliefs, attitudes, and behaviors of violent media characters (Anderson & Bushman, 2001). Notably, these changes can affect narrow aspects of attitudinal domains. This is apparent in research showing that increases in acceptance of specific types of violence can occur without regard to other types of violence changing. For example, after September 11, 2001, researchers found that acceptance of war violence increased but acceptance of intimate violence did not (Carnagey & Anderson, 2007). The current study examines the relationship between type-specific changes in acceptance of violence and video game play. Specifically, the current study seeks to examine how the video game character-role assumed by the player might affect learned aggressive outcomes.

Past research on media violence (particularly television violence) suggests that exposure to unjustified or criminal violence should lead to less acceptance of violence (National Television Violence Study, 1996; NTVS). One reason given to explain this outcome is that viewers are motivated to identify with moral protagonists and disassociate themselves from the acts of immoral antagonists. Since disliked antagonists in television and film habitually engage in criminal violence, viewers exposed to these behaviors should form negative attitudes toward these behaviors and become less accepting of criminally violent acts. However, there is reason to believe this outcome will differ with video games. Unlike television, film, and other passive forms of media,

video games present players with exposure experiences (e.g., assuming the role of one specific character and vicariously enacting the behaviors of that character) that might be expected to promote association with characters engaging in unjustified violence. By playing a character that engages in criminal violence, the user might be expected to identify with that character and form positive attitudes toward the character and his/her behavior.

Currently, there is a growing body of evidence demonstrating that violent video games increase aggression, desensitization, and acceptance of violence (Anderson & Bushman, 2001; Sherry, 2001). Whereas playing the role of anti-social characters has been a paramount concern in the video game violence debate (Gentile & Anderson, 2003), little research has examined the effect of character-role on acceptance of violence. This study examines the influence of character-roles in video games that might distinguish the effects of violence in video games from the effects of violence in traditional media. We argue in accordance with the logic of social cognitive theory that video games present media experiences where users identify with villainous characters and subsequently model those characters' attitudes. Our study begins with a discussion of media violence and attitudinal changes, specifically with regard to acceptance of violence. Next, social cognitive theory (SCT) is presented followed by a discussion of character-roles. In our discussion of character-roles, we argue that video games present users with unique opportunities where villainous characters act as the primary model for media users. Finally, hypotheses are presented in accordance with SCT logic and our discussions of character-role.

Media Violence and Acceptance of Violence

Questions about the potential antisocial influence of violent mass media have been a concern for scholars and media critics dating back at least to the Payne Fund Studies in the 1930s (Sparks & Sparks, 2002). Most recently, video games have garnered the most concern. Media violence literature suggests that exposure to violent video games results in generalized aggressive outcomes, such as increased aggressive attitudes, cognitions, and behaviors. Of particular concern for this study are increases in aggressive attitudes, specifically attitudes regarding the acceptance of violence.

Acceptance of violence is conceptually defined for this paper as a collection of attitudes held by an individual regarding different types of violent behavior. Drawing from persuasion research, here attitude is defined as a person's "general predispositions to evaluate other people, objects, and issues favorably or unfavorably" (Petty, Priester, & Briñol, 2001); violence is defined as "any behavior directed toward another individual... with extreme harm as its goal (e.g., death)," (Anderson & Bushman, 2002, pp. 28-29). Taken together, we define acceptance of violence as predispositions to evaluate favorably or unfavorably those behaviors directed toward another individual with extreme harm as their goal. Consistent with recent media effects research, this definition treats acceptance of violence as a multi-dimensional concept, encompassing attitudes regarding multiple types of violence, including war violence, intimate violence, interpersonal violence, penal code violence, and corporal punishment of children violence (Anderson, Benjamin, Wood, & Bonacci, 2006). Past research has demonstrated a relationship between media exposure and changes in attitudes and acceptance of violence related to the content.

In a naturalistic experiment, Malamuth and Check (1981) found that acceptance of violence against women increased for males after they viewed a film in which violence

committed against women was portrayed as having positive consequences. In a longitudinal experiment, Zillmann and Bryant (1982) found that exposure to pornography resulted in changes in a wide array of beliefs and attitudes related to women. Subjects in the treatment conditions became less accepting of the women's rights movement and became more callous toward rape.

Researchers have had similar findings with regard to reward and punishment in video games. Individuals who played a video game where violence was rewarded showed increased aggressive cognitions and behaviors compared to those who played a non-violent version of the same game, whereas those who played a version of the game where violence was punished did not show this increased aggressive response (Carnagey & Anderson, 2005). Notably, recent research has demonstrated that changes can be very specific with regard to the type of violence. Research conducted during and after September 11, 2001, determined that environmental events can affect acceptance for some types of violence without affecting others. In a longitudinal study, subjects' acceptance of war and penal violence increased after the September 11th attacks, whereas their acceptance of interpersonal violence did not change (Carnagey & Anderson, 2007). These studies demonstrate that changes in acceptance of violence can occur through media exposure. These changes are thought to be related to a process of social learning where behaviors are observed and modeled by viewers. This process is explicated in social cognitive theory (SCT).

Social Cognitive Theory

Social cognitive theory (SCT) is a broad theory that combines cognition, behavior, and environment to explain human agency (Bandura, 2002). A large portion of

SCT focuses on observational learning (Bandura, 1986, 2002). Rather than learning only by individual experience, SCT argues that humans possess certain unique capacities that allow them to learn through the observation of models. Due to the ubiquity of mass media, media characters are considered by SCT to be some of the most prominent and important models for observational learning (Bandura, 2002). Whereas social learning theory, the predecessor of SCT, focused primarily on learned behaviors, SCT applies to both simple behavioral mimicry and more abstract learning, such as shifts in attitudes, language use, and personal standards for behavior (Bandura, 1986, 2002). Central for the present study is observational learning's impact on attitude change.

According to SCT, individuals form attitudes by observing a model's behavior and the rewards and punishments received by the model for enacting said behavior (Bandura, 1986, 2002). Witnessing models being rewarded should cause attitudinal shifts regarding the behavior from negative to positive due to a process called disinhibition; witnessing models being punished should cause shifts regarding the behavior performed from positive to negative due to a process called inhibition (Bandura, Ross, & Ross, 1963). In addition to reward and punishment influencing attitude change, observational learning theories argue that individuals are likely to adopt the attitudes of models with whom they associate closely (Anderson et al., 2003). In television and film, viewers are motivated to identify with moral protagonists and disassociate themselves from the acts of immoral antagonists (Bandura, 1986; NTVS, 1996). Since disliked antagonists in television and film habitually engage in criminal violence, viewers exposed to these behaviors should form negative attitudes toward these behaviors and become less accepting of criminally violent acts. By contrast, since liked protagonists in television

and film habitually engage in lawful violence, viewers exposed to these behaviors should form positive attitudes toward these behaviors and become more accepting of lawfully violent acts.

There is reason to believe, however, that the manner in which people process violent media and the outcomes that result from exposure might differ with video games. Unlike television, film, and other more passive forms of media, video games present players with exposure experiences (e.g., assuming the role of a specific character and vicariously enacting their behaviors) that might be expected to promote identification with characters engaging in violence of all types, be it the type of lawful violence typically enacted by liked protagonists or the type of unlawful violence performed by antagonists. Research has shown that players tend to identify with the character they control in a video game (i.e., the player-character; Hefner, Klimmt, & Vorderer, 2007). Following this logic, the user might be expected to form positive attitudes toward the player-character and his/her behaviors. In video games, the type of behaviors in which a player engages is determined by his/her character's role within the game's narrative.

Character-Roles in Video Games and Identification

The actions of the player-character in a video game, while controlled by the player, are guided by the character's role in the game narrative. Character-role, defined as the motivational goals and attributes of a character that determine his/her function within the media context, can vary on any number of dimensions; however, character-role in video games usually varies along the hero/villain dichotomy. Whereas this dichotomy may seem simplistic when considering forms of media such as novels and films, video games have traditionally employed a more basic narrative focused on a battle between a

heroic character and a villainous character. This is prevalent in many video games, such as the *Legend of Zelda* series, the *Super Mario Brothers* series, and various other popular games. Whereas both heroes and villains tend to be violent, each role is guided by very disparate motives (Sanders, 2004). Heroes are guided by prosocial tenets; they protect innocents and fight criminals through lawful acts. Villains, however, tend to be guided by selfish goals; they exploit the innocent and enact criminal behavior (Sanders, 2004).

Unlike television and film, where the narrative structure of storytelling habitually encourages viewers to adopt the point of view of the moral protagonist, some play conditions in video games encourage the player to adopt the point of view of the antagonist. By playing a villainous character in a violent video game, the player will be vicariously engaging in criminal violence and might be expected to form positive attitudes toward that type of violence. By playing a heroic character, the player will be engaging in lawful violence and might be expected to form the same type of positive attitudes toward lawful violence that we would expect from watching television. When we consider the outcomes expected from playing a heroic character, the predictions are fairly straight forward. Playing the role of a hero tends to place the character in opposition to criminal violence due to the fact that heroes traditionally fight villains. As a result, we expect that players assuming the role of a hero will become more accepting of lawful violence and less accepting of criminal violence. This is due to the fact that the player is encouraged by the game experience to identify with a lawfully violent character and to disassociate from a criminally violent character.

By contrast, villains are not always pitted against heroes. For example, assuming the role of a robber might put the player in conflict with innocents rather than heroic

characters. At the same time, there are occasions when villains are pitted against heroic characters. Whereas playing the role of a villain pitted against a heroic character should result in the player identifying with a criminally violent character and disassociating from a lawfully violent character (thus increasing acceptance of criminal violence and decreasing acceptance of lawful violence), playing the role of a villain in conflict with innocents should cause the player to become more accepting of criminal violence, and lawful violence should be unaffected. The logic here argues, essentially, that playing a hero role would increase acceptance of lawful behavior (and decrease acceptance of criminal behavior), whereas playing a criminal would increase acceptance of criminal behavior (and decrease acceptance of lawful behavior). This logic is represented as the interaction depicted in Figure 1 and is formally stated as the hypothesis below:

H1: The heroic/villainous nature of the character-role adopted when playing a video game will interact with the lawfulness of behaviors evaluated after game play to influence the perceived acceptability of those behaviors such that acceptance of criminal violence will be highest for individuals playing a criminal character, second highest for individuals not playing a game, and lowest for individuals playing a heroic character, whereas acceptance of lawful violence will be highest for individuals playing a heroic character, second highest for individuals playing a heroic character.



Figure 1. Hypothesis 1 presented in graphical format.

SCT argues that identification serves as a moderator of the learning process (Bandura, 1986). Within media research, identification is an often used but rarely welldefined construct (Zillmann, 1995). Zillmann (1995, 2006) discussed identification (in the context of Freud's psychoanalytic literature) as a process of ego confusion, in which a person experiences the actions of another as if s/he were the person in question. Zillmann (1995, 2006) argues against using this concept of identification with regard to the dramatic experience. Rather than the viewer experiencing the action from within, Zillmann advocates the viewer is a third party who merely witnesses the actions of the dramatic characters. Yet this position seems at odds with the experience of video game play. Recent research on identification argues that while passive forms of media, such as film and television, are more closely connected to a witness perspective, video games can be considered to possess varying levels of identification due to their interactive nature (Hefner, Klimmt, & Vorderer, 2007). Past research has argued that higher identification leads to stronger learning effects (Anderson et al., 2003; Konijn, Bivnak, & Bushman, 2007). Following this logic and evidence, we present the following hypothesis.

H2: Identification will moderate the influence of character-role on the acceptance of criminal violence such that the interaction will be greater for subjects high on identification than those low on identification.

Method

To examine the proposed hypotheses, respondents took part in a 2 x 2 experiment varying the character-role assumed in a video game (hero vs. villain) and the type of violence (lawful vs. criminal) evaluated after game play, with the addition of an offset control. Prior to game play, subjects completed video game and newspaper exposure questionnaires. After playing the game, respondents completed a measure of acceptance of violence as well as multi-item scales measuring identification, empathic concern, character liking, and enjoyment. To measure acceptance of lawful and criminal violence, subjects read and evaluated scenarios in which violence was used either lawfully or unlawfully.

Participants

One-hundred fourteen students from a large Midwestern university took part in an experiment. Two subjects were dropped from the study: one due to a computer error during game play and the other due to missing data; this left a final sample of 112. A convenience sample was recruited from the communication department's subject pool. The use of college students is well-suited for the purposes of this study due to the fact that the college population represents a large portion of the gaming community (Jones, 2003). The sample included both men (n = 56) and women (n = 56), and though sex is

not a key variable of interest in this study, stratified random sampling was used to distribute men and women equally across conditions to prevent possible influence resulting from the potential that gender would get confounded with condition. Subjects received course credit and were entered into a raffle for a \$25 dollar Best Buy gift card.

Stimulus Material

The video game in this experiment as the stimulus material was *Fable* (Lionhead Studios, 2004). *Fable* is a violent, action/role-playing game in which players control a character that can vary between being heroic and villainous based on the version of quests selected within the game. Based on the subject's condition, s/he either completed a heroic or a villainous version of a quest. The heroic version was entitled "Protect Orchard Farm," and the villainous version of the quest was entitled "Attack Orchard Farm." In the heroic quest, the player must "help guards defend Orchard Farm from a Bandit assault" (Lionhead Studios, 2004). The player must kill bandits in order to prevent them from killing the guards and stealing the property on Orchard Farm. In the villain quest, the player's charge is to "lead the Bandits to the crates and cover their backs while they steal them" (Ibid., 2004). The player accomplishes this task by killing the guards of the property and assisting in the bandits' getaway.

Design and Procedure

An experiment varied the character-role adopted by participants assigned to play the violent video game (hero vs. villain) and the type of violence evaluated after game play (lawful vs. criminal). In addition, an offset control was also collected where subjects did not play the game at all. The character-role conditions varied the lawfulness of the violence perpetrated by the player's character. In the hero condition, the player

completed the Protect Orchard Farm quest, where they engaged in normatively lawful violence (i.e., protecting property and innocents); in the villain condition, the player completed the Attack Orchard Farm quest, where they engaged in normatively unlawful violence (i.e., stealing property and harming law officers). Both character-role conditions were collected within a laboratory during the same time period. The offset control was collected separately in a classroom.

Character-role conditions. Participants were randomly assigned to one of the two character-role conditions ($n_{\text{Hero}} = 38$, $n_{\text{Villain}} = 40$). Upon entering the lab, participants were greeted by the experimenter and informed that the research being undertaken consisted of two separate studies; study one examined the effects of varying game controllers on the evaluation of video games, whereas study two examined the relationship between newspaper readership and perceptions of two social issues (i.e., jury sentencing and political knowledge). The subject was told that that the two data collections were occurring together due to the fact that the video game study required a short break to set-up some additional equipment, which provided enough time to collect data for the other study. This deception was implemented to ensure that the subjects were blind to the hypotheses. The experimenter then presented a consent form to the subject outlining the amount of experimental credit s/he would receive (1 hr) and that s/he would be entered into a raffle for a \$25 gift certificate to Best Buy. Participants then filled out measures regarding their past video game and newspaper exposure. Both measures were filled out in the beginning to avoid any break between game play and the measure of the true dependent variable, acceptance of violence. In order to maintain the illusion of separate studies, these two measures were administered separately. The participants were

then taken to the room containing the game. Once in the room, the experimenter told the subject about the game and played a video made up of cutscenes from the game to familiarize the subject with the game's backstory. After this video was over, the subject received game play instructions on playing the game and was given an opportunity to become familiar with the controls. After the participant became comfortable with the controls, s/he was shown a second video based on his/her condition. This video consisted of a cutscene from the game that informed the participant of his/her character-role in the game as either a hero or villain. The experimenter then left the room allowing the subject to complete the level. Upon leaving the room, the experimenter began video recording the game play of the subject. Once the level was completed or ten minutes elapsed, the experimenter then reentered the room and informed the subject that the first game session was over and that time was needed to set up the second controller. The subject was then escorted to another room, where the experimenter gave the subject the survey containing the acceptability of violence measures (described as a jury sentencing measure) and a political knowledge survey for the purported newspaper study. Once these measures were completed, the experimenter reentered the room and told the subject that the second control device was not functioning. The experimenter then asked the subject to fill out the remaining video game survey items which included measures of identification, game familiarity, character liking, enjoyment, and empathic concern. After these scales, the subject was fully debriefed and asked not to talk about the experiment with other students.

Control condition. The data from the control condition was collected in a classroom. Subjects (n = 34) were recruited from the same population as the character-

role conditions. Subjects in the control condition completed the same measures as the character-role conditions, except the identification, game familiarity, character liking, and enjoyment measures.

Measures and Data Scoring

Acceptance of violence. The acceptability of lawful and criminal violence measure consisted of six scenarios in which violence was varied to be lawful or criminal. The US Department of Justice considers five acts to be violent criminal acts: simple assault, aggravated assault, robbery, rape, and homicide (US Department of Justice, 2006). Two of the five violent criminal acts (aggravated assault and homicide) were the subject of the six scenarios (three for assault and three for homicide). These crimes were selected because both aggravated assault and homicide fit the definition of violence advanced earlier in the paper as being acts aimed at causing extreme harm (unlike robbery and simple assault). Furthermore, both aggravated assault and homicide allow for the motive of the act to vary between lawfulness and criminality (unlike rape and robbery, for which there are no lawful equivalents).

In order to avoid potential confounds resulting from response biasing content found in a scenario used only in the scale measuring the acceptability of either lawful or unlawful violence, two different versions (one lawful and one criminal) were created for each of the six scenarios (see Appendix A). In the lawful version, the violence is described in a manner that would make the act legally justifiable (i.e., committed in selfdefense or committed by law enforcement); in the criminal version, the violence is described in a manner indicating that it is an illegal act (i.e., performed out of malice or as part of a larger criminal act). Two different forms of the survey used to measure

acceptance of violence were created from the twelve scenarios and the form was entered as a between subjects factor. Both forms featured three acts of lawful violence and three acts of unlawful violence. In the first form, the lawful acts were comprised by using two of the three assault scenarios and one of the two homicide scenarios; the criminal acts included the one other assault scenario and two other homicide scenarios. The second form was a mirror image of the first, with the lawful version of each scenario replacing each criminal scenario used in the first version, and the criminal version of each scenario replacing each lawful scenario as version A and version B, the first form contained scenarios for assault 1-A, assault 3-A and homicide 2-A, plus assault 2-B, homicide 1-B, and homicide 3-B. The second form contained scenarios for assault 1-B, assault 3-B and homicide 2-B, plus assault 2-A, homicide 1-A, and homicide 3-A. The two forms were distributed evenly among the conditions by random assignment.

After each scenario, the subjects were presented with four questions modified from Hill and Zillmann (1999). The first question asked, "If you were to serve on the jury for the above case, would you find (the perpetrator of violence) guilty or not guilty?" Should the subject answer "guilty" to this question, a follow up question asked what a fair sentence (in years and months) for the crime would be. The sentence length (in years and months) is considered to be an inverse measure of acceptance. The final two questions were included to form a measure of respondent attitudes regarding the acceptability of violence in each scenario. The two items ask the subject to rate how justified and how acceptable the perpetrator's actions were on a 7-point Likert-type scale with anchors 1 (*Not at all*) and 7 (*Completely*).

Identification. To measure identification, an 8-item 5-point Likert-type scale modified from Hefner, Klimmt, and Vorderer (2007) was used (see Appendix B). The scale included items such as, "I felt like I was the game character," and "The goals of the character became my own goals." The scale had to be modified due to the fact that the items were originally in German. In its previous unmodified use, the scale demonstrated a high reliability ($\alpha = .84$).

Control variables. The following variables were measured for use as possible control variables: subject's sex, game enjoyment, familiarity with the game in question, video game exposure, number of kills during game play, level success, trait empathy, and character liking. Sex was included to account for the fact that the player-character in the game was male, and similarity is known to lead to identification (Eastin, 2006). Enjoyment was measured because identification has been shown to contribute to the enjoyment of a video game (Hefner, Klimmt, and Vorderer, 2007), and it is unclear whether enjoyment contributes to identification; a 4-item scale taken from a larger flow and enjoyment scale developed by Sherry, Lucas, Greenberg, and Lachlan (2006) was employed to measure enjoyment. In addition to the four items from the original scale, a fifth reverse coded item was added. Game familiarity was measured by the following (yes/no) questions: "Had you ever played the game used in the study before?" and "Had you ever heard of the game used in the study before?," and a 7-point Likert-type question asking how familiar the subject was with the game before exposure. Video game exposure in general was measured by asking how often a subject plays video games on an average weekday, Friday, Saturday, and Sunday. The video game exposure questionnaire was developed by Lachlan, Tamborini, Bowman, and Eden (2006). Newspaper exposure

was measured by a similar item to video game exposure. Number of kills committed by the player was measured by recording the game play and counting number of kills committed by each subject. Success of quest was measured by identifying whether or not the subject completed the level. Whether the level was completed successfully was used as an indirect measure of player-skill and quality of exposure with players who completed the level being considered more skilled. *Trait empathy* was measured to account for concerns based on debate within the communication discipline regarding whether individuals experience all media interactions empathically or whether some might be experienced through identification. This measure was included for comparison with the identification measure to examine whether identification or empathy was a better predictor of changes in acceptance of violence. The trait empathy scale was taken from Tamborini, Salomonson, and Bahk (1993). Character liking was measured to account for differences in liking between the heroic character and the villainous character. The measure of character liking consisted of seven statements with Likert-style responses measuring agreement with the items. See Appendix C for all of the control measures.

Results

Before testing the hypotheses, the data were examined, and the measurement model for each of the scales used in the study was tested through confirmatory factor analysis (CFA). Composites were then created for each of the scales based on the results of the factor analysis. The hypotheses were then tested using these composites through ANOVA and ANCOVA.

Measurement Model Tests

Acceptance of violence. Before testing the measurement model of the acceptance of violence measure, the distribution of responses to the questions examining the acceptability and morality of the violence in each scenario were examined for each form of the survey. Examination of the distribution revealed a severe lack of variance for the criminal violence in all scenarios except the third scenario. Because of the severe lack of variance in the acceptance of criminal violence for all scenarios except the third, it was determined that that a test of the measurement model would be uninformative. In place of testing the measurement model, reliability was calculated for the items of the third scenario to determine whether responses to that scenario could be averaged to create a composite score for the acceptance of violence measure. The two questions measuring acceptability and morality of the violence for the third scenario were highly correlated, r (110) = .76, p < .001 and reliable, $\alpha = .86$. Because of the high correlation between the two questions and the high reliability, the two questions were averaged to create a composite called acceptance of violence. For analysis purposes, acceptance of violence will be used as one dependent measure across the two character-role conditions and the two survey forms, which will be used as independent factors in hypothesis testing.

Identification scale. A CFA was conducted to test the fit of a one-factor solution for the identification scale. Internal consistency was examined for the identification scale by using Hamilton and Hunter's (1988) Confirmatory Factor Analysis program. The CFA program generates predicted correlations between items using the internal consistency theorem and then examines deviations of the observed correlations from the predicted correlations. If the deviations are found to be small based on significance tests (i.e., not significantly differ from zero), then the measurement model being tested is not rejected.

The correlations between the items were entered into the CFA program. Based on the observed correlations, factor loadings were extracted for each of the eight items and a predicted correlation matrix was created. The factor loadings ranged from .36 to .77. Errors between the observed correlation matrix and the predicted correlation matrix were significantly different from zero based on a significance test for deviation from a unidimensional solution that allows for a gradient, $\chi^2(27, N = 78) = 40.83$, p < .05, indicating error in the measurement model. Because the one-factor solution that contained all eight items contained errors, the residual correlation matrix was examined to determine whether one of the eight items was particularly responsible for the errors (see Appendix D). Item 1 was responsible for the largest deviations from the predicted correlation matrix (-.17 and .15). Due to this fact and the fact that Item 1 had the smallest factor loading, it was dropped from the scale and the remaining seven items were examined to determine if they fit a one-factor solution. The factor loadings for the new seven-item scale ranged from .55 to .82. Errors between the observed correlation matrix and the predicted correlation matrix did not differ significantly from zero based on a significance test for deviation from a unidimensional solution that allows for a gradient, $\chi^2(20, N = 78) = 19.27$, ns (see Appendix E). Thus based on the results of the factor analysis, the hypothesis that the remaining seven items of the identification scale fit a one-factor solution could not be rejected. These items were then averaged to create a composite variable labeled identification (SI $\alpha = .87$).

Enjoyment scale. A confirmatory factor analysis was conducted on the five enjoyment items. The factor loadings ranged from .65 to .90. The significance test for deviation from a unidiminensional model that allows for a gradient yielded a significant result, χ^2 (9, N = 78) = 53.92, p < .001, indicating error in the measurement model. The errors in the residual correlation matrix were not specific to one particular item (see Appendix F), so five different four-item versions of the scale (each with a different item dropped) were tested. The tests for deviation from a unidimensional model conducted on each of the potential four item scales also yielded significant results indicating problems with these solutions. No internal consistency tests were conducted for a possible three-item scale as the measurement model would be just-identified and would fit a one-factor solution by definition. However, because the standard item alpha for the five-item version of the scale was very high (SI $\alpha = .90$), the items were averaged to create a composite variable called enjoyment.

Game familiarity. Since there were only three indicators of game familiarity, the measurement model is just-identified and fits a one-factor solution by definition. After standardizing the scores to the responses to the three questions regarding game familiarity, reliability was calculated for the three items. Because reliability was high, α = .80, the three standardized scores were averaged to create a composite variable called game familiarity.

Trait empathy. The measurement model was examined using CFA for the trait empathy scale. The measurement model failed with large errors throughout the multiple dimensions of the empathy scale, and as such, trait empathy was not utilized in further analysis. **Character liking.** CFA was conducted on the character liking items. The lowest factor loading was .45 and the highest was .87. The significance test for deviation from a unidimensional model that allows for a gradient in factor loadings was not significant, χ^2 (20, N = 77) = 22.22, *ns*. Because the predicted correlations did not significantly deviate from what was observed, the factors were considered to be alternate indicators of the same construct. The seven items were averaged to create a composite score called character liking, $\alpha = .90$.

Descriptive Statistics

	Scale Range	Mean	SD	Minimum	Maximum
Acceptance of	7-point	3.04	1.69	1.00	7.00
Violence	-				
-Lawful		3.89**	1.65	1.00	7.00
Violence					
-Criminal		2.15**	1.22	1.00	6.50
Violence					
Identification	5-point	2.49	0.80	1.00	4.33
–Hero		2.75	0.68	1.17	4.00
–Villain		2.51	0.90	1.00	4.33
Enjoyment	5-point	3.48	0.75	1.00	4.80
–Hero		3.55	0.73	2.20	4.80
–Villain		3.42	0.78	1.00	4.80
Game Familiarity	standardized	0.00	0.84	-2.29	.56
Character Liking	5-point	3.47	0.67	1.00	4.86
-Hero		3.69*	0.46	2.57	4.86
–Villain		3.27*	0.77	1.00	4.57

 Table 1 Descriptive Statistics for Key Variables in Study

* indicates p < .01, ** indicates p < .001

Table 1 shows descriptive statistics for the key variables in the current study. Participants were slightly lower than the midpoint (4) of the scale on the acceptance of violence measure across both forms of the survey (M = 3.13, SD = 1.69). For criminal violence, participants' scores centered below the midpoint (M = 2.15, SD = 1.22), and for lawful violence, participants' scores centered at the midpoint (M = 3.89, SD = 1.65). An independent samples *t*-test indicated that this difference was significant, t(110) = -6.33, p <.001. Identification was slightly less than the midpoint (3) of the scale, (M = 2.63, SD = 0.76) with participants in the hero condition (M = 2.61, SD = 0.68) scoring slightly higher than participants in the villain condition (M = 2.38, SD = 0.90). However, an independent samples *t*-test indicated that this difference was not significant, t(76) = -1.30, p = .20. Overall, subjects tended to enjoy the game as indicated by their Enjoyment scores (M = 3.48, SD = 0.75). A one-sample *t*-test indicates that Enjoyment was significantly higher than the midpoint (3) of the scale, t(77) = 5.64, p < .001. However, results from an independent samples *t*-test indicated that participants' enjoyment did not differ, t(76) = -0.78, p = .44, based on whether or not they were assigned to play the hero role (M = 3.55, SD = 0.73) or the villain role (M = 3.42, SD = 0.78). Participants overall tended to like their game character, (M = 3.47, SD = 0.67), but an independent samples ttest showed that subjects in the hero condition (M = 3.69, SD = 0.46) liked their character significantly more than subjects in the villain condition (M = 3.27, SD = .77), t(76) =2.92, p < .01.

Zero order correlations for subjects in the two game play conditions (i.e., hero and villain) were examined to determine if variables included in the study as potential control measures were associated with acceptance of violence (see Table 2). Character liking, identification, and enjoyment were unrelated to acceptance of violence. Yet game familiarity was negatively correlated with acceptance of violence (r = .22, p = .056), suggesting its use as a control in hypothesis testing.

Table 2

	1	2	3	4
1. Identification				1999 J
2. Character Liking	.47**			
3. Enjoyment	.46**	.48**		
4. Game Familiarity	.10	07	22*	
5. Acceptance of Violence	01	.19	.19	22*

Zero-order Correlations among Key Variables in Study

*indicates p < .06, two-tailed. **indicates p < .01, two-tailed. Note. Character Role was coded such that 0 = villain and 1 = hero.

Hypothesis Testing

The first hypothesis predicted that the heroic/villainous nature of the characterrole assumed by the participant would interact with the lawfulness of violence evaluated after game play. The hypothesis predicted a disordinal symmetrical interaction in which playing a hero role would increase acceptance of lawful behavior (and decrease acceptance of criminal behavior), whereas playing a criminal would increase acceptance of criminal behavior (and decrease acceptance of lawful behavior).

To test this hypothesis a 3 x 2 ANOVA was conducted with character-role (hero vs. control vs. villain) as one between-subject's factor and violence type (lawful vs. criminal) as the other. The results of the ANOVA revealed a significant main effect for violence type, F(1, 111) = 40.03, p < .001, $\eta^2 = .26$, such that acceptance of violence was significantly higher for the lawful violence (M = 3.89, SD = 1.65) than the criminal violence (M = 2.15, SD = 1.22). The main effect for character-role was not significant, F(2, 111) = .74, ns, $\eta^2 < .01$. The interaction term was also not significant, F(2, 111) = 1.80, p = .17, $\eta^2 = .02$. Although the interaction was not significant, examination of the means for the interaction term indicated a trend in the opposite direction of what was

predicted. Acceptance of criminal violence was higher for the hero condition (M = 2.63, SD = 1.53) than the villain condition (M = 1.88, SD = 0.94) and acceptance of lawful violence was higher for the villain condition (M = 4.25, SD = 1.65) than the hero condition (M = 3.76, SD = 1.48). For the control condition, acceptance of criminal violence fell between the hero and villain condition (M = 1.94, SD = 1.00), but acceptance of lawful violence was lower than both the hero and villain conditions (see Table 3).

Table 3

Acceptance of Violence Means by Condition

	Lawful Violence	Unlawful Violence	
Hero	M = 3.76, SD = 1.48	M = 2.63, SD = 1.53	
Control	M = 3.64, SD = 1.83	M = 1.94, SD = 1.00	
Villain	M = 4.25, SD = 1.65	M = 1.88, SD = 0.94	

Based on the indication from our zero order correlations showing a significant correlation between acceptance of violence and game familiarity, hypothesis one was further examined by including game familiarity as a covariate. Because game familiarity was not measured with control subjects (as these subjects did not play the game), the control condition was not included in this analysis. As such, a 2 x 2 ANCOVA was conducted with character-role (hero vs. villain) and violence type (lawful vs. criminal) as between-subjects' factors and game familiarity as a covariate. The results of the ANCOVA yielded no effect for character-role, F(1, 77) < 1, but a significant main effect for violence type, F(1, 77) = 22.74, p < .001, $\eta^2 = .22$, and a significant interaction between character-role and violence type, F(1, 77) = 4.47, p < .05, $\eta^2 = .04$. No effect was found for game familiarity, F(1, 77) = 1.01, *ns*, $\eta^2 < .01$. Although the main effect for violence type showed that acceptance of violence overall was greater for lawful violence than for criminal violence, interpretation of this effect is qualified by the symmetrical interaction between character-role and violence type. Most notably here, the pattern of means associated with the interaction was not in the direction predicted. Although playing a hero role did, as expected, lead to greater acceptance of lawful behavior (estimated marginal M = 3.67, SE = .34) than criminal behavior (estimated marginal M = 3.67, SE = .34) than criminal behavior (estimated marginal M = 2.73, SE = 0.34), the pattern of means for the villain condition was in the opposite direction of predictions (see Figure 2). Whereas we predicted that playing the villain would increase acceptance of criminal behavior (and decrease acceptance of lawful behavior), we found that playing the villain lead to greater acceptance of lawful behavior (estimated marginal M = 4.23, SE = 0.32) than criminal behavior (estimated marginal M = 1.89, SE = 0.32). Instead of its effect being the reverse of playing a hero, the effect of playing a villain was *in the same direction* of playing a hero, and *even stronger*.

Hypothesis two predicted that identification would moderate the influence of character-role on the acceptance of violence such that the differences between character-roles would be more pronounced for acceptance of criminal and lawful violence. To test this hypothesis, identification was divided by a median split into a high/low identification factor and added to the previous ANCOVA. Of note here, the main effect of identification, as well as all two and three way interactions of identification with character-role and violence type were not significant, F < 1 in the ANCOVA. Thus, hypothesis 2 is not supported.



Figure 2. Weighted means from ANCOVA including character-role and violence type as independent factors, game familiarity as a covariate, and acceptance of violence as the dependent measure.

Discussion

The central hypothesis in our study argued that changes in acceptance of violence through video game play would be affected by combinations of the character-role assumed by players and the type of violence considered, with acceptance of lawful violence being higher after playing heroic characters versus villainous characters and acceptance of criminal violence being higher after playing villainous characters versus heroic characters. Despite the fact that this hypothesis was not supported, the findings in the paper are noteworthy. Perhaps the most interesting finding is that while we did observe a significant interaction between character-role and violence type, the interaction was not in the predicted direction.

Our hypothesis was based on the expectation that playing a hero role would promote acceptance of lawful behavior, whereas playing a criminal would promote acceptance of criminal behavior. Instead, when controlling for game familiarity, character-role and violence type interacted such that acceptance of criminal violence was lower and acceptance of lawful violence was higher for subjects in the villainous condition than subjects in the heroic condition. This pattern of means may indicate that playing the role of the villain had a "lawfulness" effect on players. In other words, playing the role of the villain may have stimulated a drift toward "lawfulness" (i.e., becoming more accepting of lawful behaviors and less accepting of criminal behaviors). Although we can only offer post hoc speculation on reason for this outcome, we might explain this as a function of the uncommon attentional frame likely created by playing a villainous character. Player characters in video games have traditionally been heroic characters. As such, playing the role of a heroic character is somewhat normative, whereas playing the role of a villainous character is novel. Because playing the role of a heroic character is a normative experience for video game play, it is unlikely that playing a heroic character would make lawfulness of violence more salient than usual. If the novelty of playing a villainous character made lawfulness and unlawfulness more salient, this increased salience may have strengthened the player's instinctive bias towards lawfulness. This interpretation seems consistent with the pattern of means seen in Figure 31

From Figure 3, it appears that playing the heroic character may lead to an increase overall in the acceptance of violence. The heroic condition is almost parallel, but slightly higher, than the control condition. The villain condition, on the other hand, looks quite different. It appears that playing the villain condition led to a sharp increase in

acceptance of lawful violence and a decrease in the acceptance of criminal violence, when compared to the other two conditions.



Figure 3. A graphical depiction of the weighted means from two separate analyses. The means from the hero and villain conditions come from an ANCOVA which includes game familiarity as a covariate. The means from the control condition comes from an ANCOVA which included game play as a covariate.

This finding could be particularly important for video game research, as it may indicate a similarity between the outcomes from video game play and other forms of narrative media (i.e., film and television), but for different reasons. Within television and film, it is likely the case that viewers will dislike and not identify with villainous characters. This is due to the fact that these characters are typically portrayed as antagonists and are not the main characters within the narrative. When playing a villain in a video game, the villain becomes the central character.

The idea that television viewers would not like villainous characters led the NTVS (1996) to conclude that violence committed by a villain was not as likely to lead to negative outcomes as violence committed by heroic characters. The findings in the

current study may indicate that video game play leads to similar outcomes through different mechanisms, perhaps through an increase in the salience of issues related to lawfulness that results form playing a villainous character. Notably, the explanation offered by NTVS for why witnessing narrative violence committed by villainous characters was less likely to produce negative outcomes than violence committed by heroes (i.e., that viewers will dislike villainous characters) is not consistent with the findings in the present study. Respondents who played villains did in fact like their characters (M = 3.27 on a 5-point scale), but playing the villainous character produced the same type of positive outcomes reported by NTVS. As the data here are unable to test competing explanations for the positive outcomes resulting from exposure to villainous characters here and in research on TV exposure, future research should examine the extent to which these competing rationales are specific to different media.

Limitations and Future Research

The first limitation, and perhaps the most important limitation in this study, has to do with the measurement of the dependent variable. The lack of variance in the dependent variable created a restriction in range which attenuated the relationship between the independent variables and the dependent variable. The current research project should be replicated with more sensitive measures of the dependent variable. The dependent measure in this study was scenarios that featured clearly lawful of clearly criminal behavior. By doing so, ceiling and basement effects occurred which reduced the variance. Scenarios that featured more questionable examples of lawful and criminal violence could overcome these basement and ceiling effects and could provide a better test of the hypotheses presented in the paper. Another option that may provide more

sensitive measures would be creating acceptance of criminal and lawful violence scales, which if valid, could reduce measurement error and provide a more consistent measure.

The second limitation is the low number of participants in the current study. Because of not being able to collapse across the two forms of the dependent measure to create two variables (one measuring acceptance of lawful violence and one measuring acceptance of unlawful violence) the form of the survey had to be used as a betweensubjects factor in the analysis. This effectively cut the power of the study in half by reducing the number of the participants in each cell to half of the number of subjects in each condition. Future research should create separate measures for the acceptance of lawful violence and the acceptance of unlawful violence, which would increase the number of subjects in each cell and consequently increase the power.

Conclusion

The current study sought to examine a possible relationship between characterroles in video games and their influence on acceptance of criminal and lawful violence. The study found an interaction inconsistent with the one predicted. This is the first study to examine the effect of playing a hero or villain character on violence-related outcomes from video game play. The findings reveal a surprising influence pattern suggesting a drift toward lawfulness. Compared to playing a hero character, playing a villainous character produced an increase in the acceptance of lawful violence and in decrease in the acceptance of criminal violence. This study represents an important first step in examining how the character-role assumed by a game player may moderate the effects of game play.

Endnotes

¹ In addition to showing the estimated marginal means for acceptance of violence in the heroic and villainous conditions weighted by game familiarity, Figure 3 presents the estimated acceptance of violence means of the control condition weighted by video game exposure in general. As previously stated, the design of the experiment did not allow us to extract means for the control condition weighted by game familiarity. To address this limitation, we extracted acceptance of violence means for the control condition weighted by general video game play, the measure most comparable to game familiarity. This was done to provide our best estimate of how acceptance of violence scores might look in the control condition when controlling for game familiarity. As such, the chart provides only our best estimate and does represent the outcome of statistical analysis.

Appendix A

Acceptance of Violence Measure

- 1. On September 28, 2007, a young man was walking through a neighborhood in Grand Rapids, MI. Two men approached the young man and began to threaten him for walking through their neighborhood. Then, the two men began to attack the man with bats.
 - a. [Criminal Violence] The two perpetrators beat the young man badly, but left him alive.
 - b. [Lawful Violence] The young man defended himself and beat the perpetrators off with a stick injuring one of them very badly.
- 2. On December 17, 2007, two business associates began arguing at their annual Christmas party in Lansing, MI. One of the business associates pulled out a knife during the argument, and the two began to struggle.
 - a. [Criminal Violence] During the struggle, the man who pulled out the knife stabbed the other associate. The injured man lived.
 - b. [Lawful Violence] During the struggle, the man who pulled out the knife was stabbed by the other associate. The injured man lived.
- 3. On May 19, 2007, at a house party in Ann Arbor, MI, a young man began yelling at one of the hosts. A few days earlier, the enraged man and his girlfriend broke up, and he blamed the host of the party for the break up. The man then threw a punch at the host of the party.
 - a. [Criminal Violence] The punch connected and broke the jaw of the host.
 - b. [Lawful Violence] The punch missed, and the host counterpunched breaking the man's jaw.
- 4. On November 19, 2007, a fender bender occurred in Charlotte, MI. The accident occurred when a man couldn't stop his car at a stoplight and ran into the back of the driver who was in front of him. The man who was rear-ended jumped out of his car and started yelling. The driver of the other car stayed inside his car. The man who was rear-ended then reached inside his car and pulled out a hunting rifle and pointed it at the other man.
 - a. [Criminal Violence] The man then shot and killed the man who had rearended him.
 - b. [Lawful Violence] The man in the car then hit the gas running over and killing the man he rear-ended.

- 5. On June 15, 2007, a man broke into a home in West Bloomfield, MI, by breaking a window. A resident of the house heard the glass break and went down stairs with a flashlight and gun to investigate the sound. When he got to the bottom of the stairs, the robber pointed a gun at him, and the man shined his flashlight at the robber.
 - a. [Criminal Violence] Then the robber shot and killed the homeowner.
 - b. [Lawful Violence] Then the homeowner shot and killed the robber.
- 6. Police responded to a bank's silent alarm on June 30, 2007, outside of Saginaw, MI. The robber was still inside the bank when the police arrived, and held the bank's employees and customers as hostages. After several hours of negotiations, the robber had released all but one hostage, the banks security guard. After the robber continued to threaten the guard's life, the police then positioned a sharp shooter in a position to kill the robber.
 - a. [Criminal Violence] The robber then shot and killed the guard.
 - b. [Lawful Violence] The police then shot and killed the robber.

If you were to serve on the jury for the above case, would you find ______ guilty or not guilty? What, in your judgment, is a fair sentence for this crime as committed under the indicated circumstances? Give your response in years and months. _____ year(s) _____ month(s)

How justified was the perpetrator in his actions?

Not at all justified justified	1	2	3	4	5	6	7	Completely
How acceptable we	ere the p	perpetra	tor's ac	tions?				
		2	2		F	(7	Completele

Not at all acceptable 1 2 3 4 5 6 7 Completely acceptable

Appendix B

Identification Measure

- 1. While I was playing the game, I forgot everything around me.
- 2. I had the feeling I was literally in the character's skin.
- 3. I forgot myself because I was focusing so much on the game character's actions.
- 4. I had the feeling I was the game character more so than myself.
- 5. The game character's goals became my goals.
- 6. While playing the game, the game world was more real to me than my "actual reality."
- 7. I felt as if I was really participating in the shown/depicted happenings.
- 8. I almost had the feeling of actually being the character.

Appendix C

Control Measures

Enjoyment Measure

- 1. I enjoyed playing this game.
- 2. I would play this game longer if I had the opportunity.
- 3. This game was not very interesting to me. (R)
- 4. I would recommend this game to a friend.
- 5. This game was fun.

Character Liking Measure

- 1. The character was likeable.
- 2. The character was fascinating.
- 3. The character was appealing.
- 4. The character was admirable.
- 5. The character was heroic.
- 6. The character was virtuous.
- 7. I think the character could be a friend of mine.

Empathy Measure

- 1. I cannot continue to feel okay if others around me are feeling depressed.
- 2. Before criticizing someone, I try to imagine how I would feel in their place.
- 3. I am the type of person who is concerned when other people are unhappy.
- 4. I am the type of person who can say the right thing at the right time.
- 5. I really get involved with the feelings and characters in a novel or film.
- 6. I don't become upset just because a friend is acting upset.
- 7. I sometimes try to understand my friends better by imaging things from their perspective.
- 8. When I see someone being taken advantage of, I feel kind of protective toward them.
- 9. Even though I often try to console someone who is feeling bad, I never seem to be able to say the right thing.
- 10. When I am reading an interesting story or novel, I imagine how I would feel if the events were to happen to me.
- 11. I become nervous if others around me seem nervous.
- 12. I sometimes find it difficult to see things from another's perspective.
- 13. I often have tender, concerned feelings for people less fortunate than myself.
- 14. I usually respond appropriately to the feelings of others.
- 15. After acting in a play or seeing a play or a movie, I have felt partly as though I were one of the characters.
- 16. The people around me have a great influence on my moods.

17. I try to look at everyone's side of a disagreement before I make a decision.

- 18. I would describe myself as a pretty soft-hearted person.
- 19. Others think of me as an empathetic person.
- 20. When I watch a good movie, I can easily put myself I the place of the lead character.
- 21. When I am upset, I usually try to put myself in his or her shoes for awhile.
- 22. I sometimes don't feel very sorry for people when they are having problems.
- 23. My friends come to me with their problems because I am a good listener.
- 24. I become very involved when I watch a movie.
- 25. Other people's misfortunes do not usually disturb me a great deal.
- 26. I am often touched by the things that I see happen.

Scale Item Scoring ('R' indicates reverse scored-items): Emotional Contagion: 1, 6R, 11, 16; Perspective Taking: 2, 7, 12R, 17, 21; Empathetic Concern: 3, 8, 13, 18, 22R, 25R, 26; Communicative Response: 4, 9R, 14, 19, 23; Fictional Involvement: 5, 10, 15, 20, 24.

Video Game Playing Measure

1. On an average **Weekday** (Monday, Tuesday, Wednesday, Thursday), how many hours do you usually spend playing video games during these <u>time periods</u>?

2. On an average **Friday**, how many hours do you spend playing video games during these <u>time periods</u>?

3. On an average **Saturday**, how many hours do you spend playing video games during these <u>time periods</u>?

4. On an average **Sunday**, how many hours do you spend playing video games during these <u>time periods</u>?

	(1) in the morning (6 a.m. to noon)	(2) in the afternoon (noon to 7 p.m.)	(3) in the evening (7 p.m. to 11 p.m.)	(4) at night (11 p.m. to 6 a.m.)
• never				
• up to 1 hr.				
• 1 hr. to 2 hrs.				
• 2 hrs. to 3 hrs.				
• 3 hrs. to 4 hrs.				
• 4 hrs. to 5 hrs.				
• 5 hrs. to 6 hrs.				
• more than 6				
hrs				

Newspaper Reading Measure

1. On an average **Weekday** (Monday, Tuesday, Wednesday, Thursday), how many hours do you usually spend reading newspapers during these <u>time periods</u>?

2. On an average **Friday**, how many hours do you spend reading newspapers during these time periods?

3. On an average **Saturday**, how many hours do you spend reading newspapers during these <u>time periods</u>?

4. On an average **Sunday**, how many hours do you spend reading newspapers during these <u>time periods</u>?

	(1) in the morning (6 a.m. to noon)	(2) in the afternoon (noon to 7 p.m.)	(3) in the evening (7 p.m. to 11 p.m.)	(4) at night (11 p.m. to 6 a.m.)
• never				
• up to 1 hr.				
• 1 hr. to 2 hrs.				
• 2 hrs. to 3 hrs.				
• 3 hrs. to 4 hrs.				
• 4 hrs. to 5 hrs.				
• 5 hrs. to 6 hrs.				
• more than 6 hrs				

Appendix D

Correlation Matrices for 8-Item Identification Scale

	Item 1	Item 2	Item 3	Item 4	Item 5	Item 6	Item7	Factor
								Loadings
Item 1								.36
Item 2	.24							.70
Item 3	.41	.47						.71
Item 4	.11	.64	.49					.77
Item 5	.15	.32	.43	.49				.54
Item 6	.26	.43	.45	.54	.38			.69
Item 7	.39	.47	.52	.51	.33	.59		.74
Item 8	.19	.63	.45	.69	.45	.50	.54	.77

Observed Correlation Matrix

Predicted Correlation Matrix

	Item 1	Item 2	Item 3	Item 4	Item 5	Item 6	Item7	Factor
			•					Loadings
Item 1								.36
Item 2	.25							.70
Item 3	.26	.50						.71
Item 4	.28	.54	.55					.77
Item 5	.19	.38	.38	.42				.54
Item 6	.25	.48	.49	.53	.37			.69
Item 7	.27	.52	.53	.57	.40	.51		.74
Item 8	.28	.54	.57	.59	.42	.53	.57	.77

Residual Correlation Matrix

	Item 1	Item 2	Item 3	Item 4	Item 5	Item 6	Item7	Factor
								Loadings
Item 1								.36
Item 2	01							.70
Item 3	.15	03						.71
Item 4	17	.10	06					.77
Item 5	04	06	.05	.07				.54
Item 6	.01	05	04	.01	.01			.69
Item 7	.12	05	01	06	07	.08		.74
Item 8	09	.09	10	.10	.03	03	03	.77

Appendix E

Correlation Matrices for 7-Item Identification Scale

	Item 2	Item 3	Item 4	Item 5	Item 6	ltem7	Factor
							Loadings
Item 2							.70
Item 3	.47						.66
Item 4	.64	.49					.82
Item 5	.32	.43	.49				.55
Item 6	.43	.45	.54	.38			.68
Item 7	.47	.52	.51	.33	.59		.70
Item 8	.63	.45	.69	.45	.50	.54	.79

Observed Correlation Matrix

Predicted Correlation Matrix

	Item 2	Item 3	Item 4	Item 5	Item 6	Item7	Factor
							Loadings
Item 2						····	.70
Item 3	.46						.66
Item 4	.57	.54					.82
Item 5	.39	.36	.45				.55
Item 6	.48	.45	.56	.37			.68
Item 7	.49	.46	.57	.39	.48		.70
Item 8	.55	.52	.65	.43	.54	.55	.79

Residual Correlation Matrix

	Item 2	Item 3	Item 4	Item 5	ltem 6	Item7	Factor
	_						Loadings
Item 2							.70
Item 3	.01						.66
Item 4	.07	05					.82
Item 5	07	.07	.04				.55
Item 6	05	.00	02	.01			.68
Item 7	02	.06	06	06	.11		.70
Item 8	.08	07	.04	.02	04	01	.79

Appendix F

Correlation Matrices for Enjoyment Scale

Observed Correlation Matrix

	Item 1	Item 2	Item 3	Item 4	Item 5	Factor
						Loadings
Item 1						.79
Item 2	.59					.81
Item 3	.71	.72				.90
Item 4	.39	.70	.60			.65
Item 5	.86	.59	.77	.51		.87

Predicted Correlation Matrix

	Item 1	Item 2	Item 3	Item 4	Item 5	Factor
						Loadings
Item 1						.79
Item 2	.64					.81
Item 3	.71	.73				.90
Item 4	.51	.53	.59			.65
Item 5	.69	.70	.78	.57		.87

Residual Correlation Matrix

	Item 1	Item 2	Item 3	Item 4	Item 5	Factor
						Loadings
Item 1						.79
Item 2	05					.81
Item 3	.00	01				.90
Item 4	12	.17	.01			.65
Item 5	.17	11	01	06		.87

References

- Anderson, C. A., & Bushman, B. J. (2001). Effects of violent video games on aggressive behavior, aggressive cognition, aggressive affect, physiological arousal, and prosocial behavior: A meta-analytic review of the scientific literature. *Psychological Science*, 12, 353-359. doi:10.1111/1467-9280.00366
- Anderson, C. A., & Bushman, B. J. (2002). Human aggression. Annual Review of Psychology, 53, 27-51. doi:10.1146/annurev.psych.53.100901.135231
- Anderson, C. A., Benjamin, A. J., Wood, P. K., & Bonacci, A. M. (2006). Development and testing of the velicer attitudes toward violence scale: evidence for a fourfactor model. Aggressive Behavior, 32, 122-136. doi:10.1002/ab.20112
- Anderson, C. A., Berkowitz, L., Donnerstein, E., Huesmann, L., Johnson, J., Linz, D., Malamuth, N., & Wartella, E. (2003). The influence of media violence on youth. *Psychological Science in the Public Interest*, 4, 81-110. doi:10.1111/j.1529-1006.2003.pspi 1433.x
- Bandura, A. (1986). Social foundations of thought and action: A social cognitive theory. Englewood Cliffs, NJ: Prentice-Hall.
- Bandura, A. (2002). Social cognitive theory of mass communication. In J. Bryant & D. Zillmann (Eds.) 2nd Edition, *Media effects: Advances in theory and research* (pp. 121-153). Mahwah, NJ: Lawrence Erlbaum Associates.
- Bandura, A., Ross, D., & Ross, S. A. (1963). Imitation of film-mediated aggressive models. *Journal of Abnormal Social Psychology*, 66, 3-11. doi:10.1037/h0048687
- Carnagey, N. L. & Anderson, C. A. (2005). The effects of reward and punishment in violent video games on aggressive affect, cognition, and behavior. *Psychological Science*, 16, 882-889.
- Carnagey, N. L. & Anderson, C. A. (2007). Changes in attitudes towards war and violence after September 11, 2001. Aggressive Behavior, 33, 118-129. doi:10.1111/j.1467-9280.2005.01632.x
- Eastin, M. (2006). Video game violence and the female game player: Self- and opponent gender effects on presence and aggressive thoughts. *Human Communication Research*, 32, 351-372. doi:10.1111/j.1468-2958.2006.00279.x
- Gentile, D. A., & Anderson, C. A. (2003). Violent video games: The newest media violence hazard. In D. Gentile (Ed.) Media Violence and Children (pp. 131-152), Westport, CT: Praeger.

- Hamitlon, M. A., & Hunter, J. E. (1988). Confirmatory Factor Analysis [Computer Software].
- Hefner, D., Klimmt, C., & Vorderer, P. (2007). Identification with the player character as determinant of video game enjoyment. *Lecture Notes in Computer Science*, 4740, 39-48. doi:10.1007/978-3-540-74873-1_6
- Hill, J. R., & Zillmann, D. (1999). The oprahization of America: Sympathetic crime talk and leniency. *Journal of Broadcasting & Electronic Media*, 43, 67-68. doi:10.1080/08838159909364475
- Jones, S. (2003). Let the games begin: Gaming technology and entertainment among college students. Pew Internet and American Life Project. Retrieved from http://www.pewinternet.org/pdfs/PIP_College_Gaming_Reporta.pdf
- Konijn, E. A., Bijvank, M. N., & Bushman, B. J. (2007). I wish I were a warrior: The role of wishful identification in the effects of violent video games on aggression in adolescent boys. *Developmental Psychology*, 43, 1038-1044. doi:10.1037/0012-1649.43.4.1038
- Lachlan, K., Tamborini, R., Bowman, N. and Eden, A. (2006) Affective disposition theory and accepting violent reprisal: The moral monitoring of motives and behavior. Paper presented at the 92nd annual meeting of the National Communication Association, San Antonio, TX.
- Lionhead Studios. Fable. (2004). [Xbox Software]. Redmond, WA: Microsoft Game Studios.
- Malamuth, N. M., & Check, J. V. P. (1981). The effects of mass media exposure on acceptance of violence against women: A field experiment. *Journal of Research in Personality*, 15, 436-446. doi:10.1016/0092-6566(81)90040-4
- National Television Violence Study. (1996). Scientific Papers, 1994-95. Studio City, CA: Mediascope.
- Petty, R. E., Priester, J. R., & Briñol, P. (2001). Mass media attitude change: Implications of the elaboration likelihood model of persuasion. In J. Bryant & D. Zillmann (Eds.) 2nd Edition, *Media effects: Advances in theory and research* (pp. 155-198). Mahwah, NJ: Lawrence Erlbaum Associates.
- Sanders, M. S. (2004). Is it a male of female thing?: Identification and enjoyment of media characters. Paper presented at the 54th Annual Meeting of the International Communication Association, New Orleans, LA.
- Sherry, J. (2001). The effects of violent video games on aggression. *Human* Communication Research, 27, 409-431. doi: 10.1111/j.1468-2958.2001.tb00787.x

- Sherry, J. L., Lucas, K., Greenberg, B. S., & Lachlan, B. (2006) Video game uses and gratifications as predictors of use and game preference. In P. Vorderer & J. Bryant (Eds.), *Playing video games: Motives, responses, and consequences (pp. 213– 224)*. New York: Routledge.
- Sparks, G. G. & Sparks, S. W. (2002). Effects of media violence. In J. Bryant & D. Zillmann (Eds.) 2nd Edition, *Media effects: Advances in theory and research* (pp. 269-285). Mahwah, NJ: Lawrence Erlbaum Associates.
- Tamborini, R., Salomonson, K., & Bahk, C. (1993). The relationship of empathy to comforting behavior following film exposure. *Communication Research*, 20, 723-738. doi:10.1177/009365093020005005
- US Department of Justice. (2006). Bureau of Justice Statistics Violent Crime Rate Trends. Retrieved from http://www.ojp.usdoj.gov/bjs/glance/viort.htm.
- Zillmann, D. (1995). Mechanisms of emotional involvement with drama. *Poetics*, 23, 33-51. doi:10.1016/0304-422X(94)00020-7
- Zillmann, D. (2006). Dramaturgy for emotions from fictional narration. In J. Bryant and P. Vorderer (Eds.) Psychology of entertainment (pp. 215-238). Mahwah, NJ: Lawrence Earlbaum Associates.
- Zillmann, D., & Bryant, J. (1982). Pornography, sexual callousness, and the trivialization of rape. *Journal of Communication*, 32, 10-21. doi:10.1111/j.1460-2466.1982.tb02514.x

