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Violent Video Game Opponent and Aggression

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Introduction

Research involving modeling and its effects on human behavior has been a major component of social psychological research. In their original 1961 study, Bandura, Ross, and Ross used a free play paradigm to study the effects of an adult model's behavior on aggression (Hock, 2005). They found that observing an adult, especially one of the same gender, act in an aggressive or non-aggressive way strongly influenced children's behavior during free play compared to a control group. Those viewing non-aggressive models ended up exhibiting significantly fewer aggressive behaviors and vice-versa. Conclusions drawn focused on the lack of need for reinforcement; only actual modeling was needed. This led to their development of social learning theory.

Bandura's study used modeled behavior from actual adults, and children were the studied population. Since, research has expanded to include alternate forms of modeling, including various media, and alternate target populations. In 1963, Bandura, Ross, and Ross repeated the experiment with a live model, a taped model, and a cartoon model. While the live model was most effective and the cartoon least, all were significant modifiers of behavior. In 1987, Silvern and Williamson found, in a single group study of four- to six-year-olds, that a violent cartoon and a violent (though mild by modern standards) video game each increased aggressive behavior, but they did not differ in effect size. It seems that video games may be comparable to cartoons at his level of realism.

In the last two decades, however, some games have become increasingly violent, both in realism and character behavior. Some games, such as "Manhunt" and its sequel, "Manhunt 2", by Rockstar Games encourage players to slaughter other characters in the game in brutal and bloody ways, which are depicted with graphical realism. This is not representative of the

majority of games, but a large percentage of modern games require the player to use a higher level of violence than that depicted in "Space Invaders", the game used in Silvern and Williamson's 1987 study, which involves comparatively low graphics and no human-like opponents.

Violent Video Games and Aggression

Accordingly, video games have become more and more a topic of research (Subramanyam, Greenfield, Kraut, & Gross, 2001), especially in the areas of aggressive feeling and behavior. Aggressive thoughts and feelings have been found to occur due to playing a violent video game (Staude-Müller, Bliesener, & Luthman, 2008) (Subramanyam, Greenfield, Kraut, & Gross, 2001). Dill and Dill, in an earlier review, concluded that while the "preponderance of the evidence" supported the hypothesis that video game violence increases aggressive behavior, there is a lack of empirical evidence to justify such a strong conclusion (1998). However, a later meta-analysis took a stronger stance, stating that video game use is correlated with aggressive thoughts, feelings, and behavior; "cardiovascular arousal"; and, interestingly, decreases in helping behaviors (Anderson, 2003). The study concluded that the effect is causal and that, in the studies he examined, the effect size is directly related to methodological strength.

In contrast, a 1998 review by Griffiths limited the conclusion to studies of young children in free-play situations. A 2001 review by Bensley and Eenwyk concluded tentatively that empirical research does not yet justify "major concern" over the effects of violent video games on "real-life" violence. A 2003 study using 5-12 year olds found that short-term violent and non-violent video game uses did not differ in aggression in responses to vignettes (story-completion items). While they found a correlation between "long-term exposure" to violence in

video games and desensitization as measured by empathy scores on the vignettes, they could not draw conclusions from this, as direction of causality was unidentifiable (Funk, Buchman, Jenks, & Bechtoldt).

Even a cursory examination of empirical literature consistently reveals a lack of consensus. However, the nature of empirical research has come into question. Ferguson, in his 2007 meta-analysis, found two distinct problems with the literature. First, he concluded that for both experimental studies of aggressive behavior and non-experimental studies of aggressive behavior and thinking, there is a publication bias compared to other related areas. This alone is enough to call for a change in how literature is reviewed. Secondly, Ferguson found that less reliable measures of aggression tended to show larger effects. Basically, while current research available has been inconclusive in finding a general causal relationship, it has also been biased in publication practices.

Mediating Factors

As the general effect of violence in video games is under scrutiny, it seems folly to view the question in such black and white terms. Some studies have examined mediating influences between violent video games and aggressive behavior, thought, and affect. One such study examined identification with a violent character (Konijn, Bijvank, & Bushman, 2007). It found that the level of identification with a violent character exhibited was directly related to the effect size playing a violent video game had on aggressive behavior against a perceived human opponent. Basically, identification with the character mediated the effect of a violent video game. This ties all the way back to Bandura's finding that same-sex models produced greater effect sizes.

Another study, in an examination of undergraduate students, found that those who were already angrier were more affected by video game violence than others (Giumetti & Markey, 2007). On the other hand, a number of positive social characteristics and behaviors were found to be positively correlated with video game use in a study by Durkin and Barber (2002). Measures included self-concept, mental health, proper substance use, closeness to family, school engagement, and obedience to parents. While far from conclusive and merely correlational, this shows that research involving video games should not be one-sided, focusing on only the negative aspects. It may be important to analyze video games in terms of benefits and disadvantages. Still, neither side has been demonstrated empirically with any conclusiveness, except for aggressive play in small children.

One possible mediating factor in particular is the perception of playing against a human opponent versus playing against a computer Artificial Intelligence (AI) opponent within the same violent video game. A 2002 study by Williams and Clippinger found that, in playing a computer game version of the popular board game "Monopoly", participants experienced more aggressive feelings when playing against the computer than a face-to-face stranger. It is notable that the game is completely non-violent, yet involves aggressive deal-making, which is a generally socially acceptable form of aggression.

Research Questions and Predictions

The present study is designed to examine further the role of the perceived opponent while moving the area of examination to that of violent video games, which may be qualitatively different from "Monopoly" in terms of effects. When the relationship between opponents is one of ostensible violence rather than a socially acceptable conflict of ostensible wealth, the interaction may be different. Thus, the primary question is: Does the type of opponent, human

or AI, mediate the effects of violent video game play on aggressive cognition in male undergraduate students? Male students will be used to decrease variability, and cognition will be the only aspect of aggression measured for time considerations. "Computer game" and "video game" will be used interchangeably. Due to the nature of the question and the lack of previous research in this area of violent video game playing, especially among undergraduates, it is impossible to produce a sound hypothesis. However, based solely on experimenter intuition and personal experience, it is expected that the competitive situation of players versus other human players will produce more aggressive thoughts.

Method

Participants

The study will draw male participants from a large, undergraduate university through mass email and flyers; the sample will be one of convenience. It is hoped that at least 120 participants will choose to participate. Age will be restricted to 18-22, and participants must be currently enrolled in the university. Participants will be contacted via email to sign up for certain days to participate. However, identification at the research site will be based on randomly assigned computer numbers and experimental group.

Instruments and Materials

The present study will use "Unreal Tournament 2004" (UT 2k4) as the violent video game, which has been used in previous study due to the level of customization available. (Staude-Müller, Bliesener, & Luthman, 2008). This game is a First-Person Shooter, which sets the player in the perspective of a gun-toting character with the intent to collect weapons and shoot to kill players on the opposing team, who will be in equivalent roles. The game will automatically handicap players who perform better and augment players who are frequently

"killed." Likewise, the single player version will automatically adjust difficulty to match each player. This will serve to prevent frustration from becoming unevenly distributed.

For the non-violent video game, "Mystery Case Files: Ravenhearst" by Big Fish Games will be used. This involves competing against the clock in finding hidden objects on the screen and completing puzzles.

As a measure of aggression, players will complete two story stems twenty times each; their responses are "vignettes." Giumetti and Markey used three stems (2007), but the present study is reduced for sake of time. Their responses should complete the story through actions the main character in question could take. The measure of aggression is the proportion of violent or aggressive actions taken to all other actions.

Procedure

Once players arrive at the testing site, which will be an enclosed computer lab area, they will be randomly assigned to experimental group and to a specific computer. The computer will serve to identify each player.

Once in their group of computers, players in the group will be collectively briefed on the basics of playing their respective game. Players in competitive groups will be instructed that they are in a competition against the other side of the room. Single player participants will be told that they are competing against the computer players only

Each group will play for 45 minutes. The multiplayer, violent video game group will literally play against the opposite team, while the competitive, non-violent video game group will be going for cumulative high score once all individual scores are tabulated.

After the game time, participants of the single player game will exit the game, which will save their scores to be tabulated later. The violent video game group will simply turn off the monitor and sound.

Next, each participant will be given a piece of paper with the story-stems and a pen to write down their vignettes. When finished, they will place their papers in a folder on their respective computers and will be partially debriefed with information about sources of personal help and reminders of rights, then they will be dismissed. At the completion of the study, participants will receive an email with a more complete description of the study and an invitation to meet with the researcher. Those with objections will have their computer number and day of participation for potential removal of their data.

Design

The experimental groups will include: the control-control group, which will play the non-violent game with pretense of competition against the computer; the control-experimental group, which play the non-violent game with pretext of competition with the other participants; the experimental-control group, which will play the violent game with pretext of competition against the computer; and the experimental-experimental group, which will play the violent game with the pretext of competition with the other participants. This results in a 2x2 factorial experimental design. The groups are not perfectly comparable, but will nonetheless provide a reasonable basis for comparison on this level.

Analysis

Analysis will consist of a two by two ANOVA.

References

Anderson, C.A. (2004). An update on the effects of playing violent video games. *Journal of Adolescence, 27*(1), 113-122.

Bensley, L., & Eenwyk, J.V. (2001). Video games and real-life aggression: Review of the literature. *Journal of Adolescent Health, 29*(4), 244-257.

Dill, K.E., & Dill, J.C. (1998). Video game violence: A review of the empirical literature. *Aggression and Violent Behavior, 3*(4), 407-428.

Durkin, K., & Barber, B. (2002). Not so doomed: Computer game play and positive adolescent development. *Journal of Applied Adolescent Psychology, 23*(4), 373-392.

Funk, J.B., Buchman, D.D., Jenks, J., & Bechtoldt, H. (2003). Playing violent video games, desensitization, and moral evaluation in children. *Journal of Applied Developmental Psychology, 24*(4), 413-436.

Giumetti, G.W., & Markey, P.M. (2007). Violent video games and anger as predictors of aggression. *Journal of Research in Personality, 41*(6), 1234-1243.

Griffiths, M. (1999). Violent video games and aggression: A review of the literature. *Aggression and Violent Behavior, 4*(2), 203-212.

Hock, R.R. (2005). *Forty studies that changed psychology: Explorations into the history of psychological research* (5th ed.). Upper Saddle River: Pearson Education, Inc.

Konijn, E.A., Bijvank, M.N., and 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*(4), 1038-1044.

Silvern, S.B., & Williamson, P.A. (1987). The effects of video game play on young children's aggression, fantasy, and prosocial behavior. *Journal of Applied Developmental Psychology, 8*(4), 453-462.

Staude-Müller, F., Bliesener, T., and Luthman, S. (2008). Hostile and hardened? An experimental study on (de-)sensitization to violence and suffering through playing video games. *Swiss Journal of Psychology, 67*(1), 41-50.

Subrahmanyam, K., Greenfield, P., Kraut, R., & Gross, E. (2001). The impact of computer use on children's and adolescents' development. *Applied Developmental Psychology, 22*, 7-30.

Williams, R.B., & Clippinger, C.A. (2002). Aggression, competition and computer games: Computer and human opponents. *Computers in Human Behavior, 18*(5), 495-506.