**Hero Violence**

The potential effects of violent video game exposure on gamers have received considerable attention in recent years (CITES). The published scientific literature generally supports the conclusion that violent video games increase aggressive behavior (Anderson et al., 2015; Bushman, Gollwitzer, & Cruz, 2015; but see McCarthy, Coley, Wagner, Zengel, and Basham, 2016, for a null result in a preregistered setting and Hilgard, Engelhardt, and Rouder, 2017, for indications that these effects may be substantially overestimated by publication bias). Violent video game effects have been found to increase aggression immediately after playing in a number of different ways using different measures of aggression (Anderson & Dill, 2000; Bartholow & Anderson, 2002; Bartholow, Bushman, & Sestir, 2006; Engelhardt, Bartholow, Kerr, & Bushman, 2011; Fischer, Kastenmuller, & Greitemeyer, 2010). These effects are not limited to the time period immediately following violent video game exposure, but can remain even 24 hours later (Bushman & Gibson, 2011). Most studies show that violent game exposures as brief as 20 minutes are sufficient to increase players’ aggression. When examining long-term exposure, evidence indicates that sustained violent video game exposure over time is related to increased aggressive behavior, with greater exposure relating to greater levels of aggression (Willoughby, Adachi, & Good, 2012). In addition, playing violent video games has been linked to desensitization toward arousing stimuli (Carnagey, Anderson, & Bushman, 2007), perception of one’s own aggressive behavior as less aggressive (Greitemeyer, 2014), and increased interpretation of aggression in others (Bushman & Anderson, 2002).

Comprehensive meta-analytic reviews including various methodologies have confirmed the negative causal effects of violent video game playing in a number of domains related to aggression (Anderson et al., 2010; Greitemeyer & Mugge, 2014). Overall, it seems as though elevated aggressive behavior following violent video game play is likely the result of an increase in the activation of aggression related content, according to the current General Aggression Model (Anderson & Bushman, 2002b). Of particular importance to the current study is the negative effect violent video games and activated mental content have on prosocial behavior.

Beyond effects on aggression, research has reported that playing violent video games also reduces the latency with which one helps others (Bushman & Anderson, 2009), notably by reducing empathic concern for others (Fraser et al., 2012; You, Kim, & No, 2015). On the other hand, research with prosocial video games, in which the player does nice things (or life-saving things) to or for other game characters, indicates that playing these types of games actually increases prosocial behavior (Gentile et al., 2009; more), likely by increasing access to prosocial thoughts (Greitemeyer & Osswald, 2010; Greitemeyer & Osswald, 2011; but see Tear and Nielsen, 2013 for a failure to replicate). Thus, results indicate that the activation of prosocial or aggressive constructs through exposure to congruent content in video games influences future behavior*.* So, depending upon the type of behavior engaged in while playing the game, gamers will either have more prosocial constructs activated following gameplay, making them more inclined toward compassion and helping, or they will have more aggressive constructs activated following gameplay, making them more inclined toward anger and aggression.

Interestingly, there are certain games in which both constructs are intertwined within the game’s objectives. Some video games require violence in order to help save innocent people, or even the world, against those attempting to do harm. Many games require the player to save innocents from monsters, terrorists, or even Nazis. Thus, players must be violent, which may reduce prosocial behavior, but within the plot of the game the violence is in the service of helping others, which may increase prosocial behavior. Interestingly, research has shown that playing a violent video game cooperatively with other players increases behavior associated with prosocial behavior (Ewoldsen, Eno, Okdie, & Velez, 2012), so there is evidence to suggest that prosocial contexts within a violent video game can produce prosocial effects. However, no research has investigated the effects that violent games with prosocial objectives may have on prosocial behavior. If it were merely the case that violent video game content reduced prosocial behavior, and prosocial video game content increased it, then perhaps the two effects would generally cancel each other out, resulting in neither an increase or decrease in prosocial behavior. However, it is possible that prosocial violence in video games will activate a prosocial concept that would produce increased prosocial behavior when given the opportunity and context to do so.

We hypothesize that the prosocial nature of the violence in a video game scenario in which players must kill in order to save innocent hostages will increase the tendency to be prosocial when given the opportunity. Players who play this type of game will be significantly more prosocial after the game has ended than players of a video game in which violence is gratuitous, and also significantly more prosocial than players of a control game.

**Method**

We report how we determined our sample size, all data exclusions (if any), all manipulations, and all measures in the study (Simmons, Nelson, Simonsohn, 2012)

**Participants**

Participants were (xxx) college students (xx% male) from two large Midwestern universities. The study was advertised as an investigation as to how video games relate to both enjoyment and emotion, with the statement that participants would simply play a video game and then answer some questions about how much they enjoyed playing it and what kinds of emotions they experienced during their gameplay. All students were traditional college aged students.

**Materials and Procedure**

Participants were randomized to a 3 (Game: Gratiutious violence, Hero violence, No violence) × 2 (Help Red Cross, Save lives) between-subjects design.

When participants first entered the lab, one of three different video games was awaiting them. In the “Gratuitous Violence” condition, participants played a level in *Call of Duty: Modern Warfare* entitled “No Russian”, in which the participant controlled a character who is a US special ops member that is undercover as part of a terrorist organization that walks into an airport and has to kill innocent civilians and police officers. However, manipulation of the intro video to the game’s level made it appear that they were merely a part of the terrorist organization. Participants in the “Hero Violence” condition played a different level in Call of Duty: Modern Warfare entitled “The Only Easy Day Was Yesterday”. In this level, participants were first told in the intro video that some innocent crew members of an oil rig were being held captive by a terrorist organization, and it was the job of the participant to sneak onto the oil rig and save the hostages. Success in this level required killing many of the terrorist members while freeing the hostages. Before playing either of these Call of Duty levels, participants in both conditions warmed up to the controls during a 5-minute training level at the beginning of the Call of Duty campaign that systematically shows participants how the controller works and allows them time to practice with the controller. In the control condition, participants played *Gran Turismo*, in which they were required to race other computer controlled cars. Before they proceeded to race, participants received instruction on the use of the controller, and were allowed to practice for five minutes on a time trial track with no other cars. In all three of these conditions, participants played the actual level for 15 minutes.

After gameplay ended, participants completed questionnaires on a computer for approximately 10 min. They first completed the PANAS (citation), followed by several questions regarding their gameplay experience. These questions included experience of enjoyment playing the game, how often the participant played video games, and if the genre of game they played was the genre they normally would enjoy playing. Participants were then asked demographic questions and questions to probe for suspicion, before being told that they had completed the experiment. They were then given a fake debriefing statement. This statement told participants that we were interested in how video game experience affected enjoyment and mood. Participants then left the lab.

As participants walked down the hall to the exit, they were greeted by a female confederate posing as a member of the Red Cross looking for people to volunteer their time to help with a blood drive (citation – can’t remember who it was; Cialdini and Mannucia?). When she stopped the participant in the hall, she recited the following: “Hi – my name is Sara with the Red Cross. We are currently looking for volunteers to call previous blood drive donors to see if they would be willing to donate again at the present time. If you choose to volunteer, you would choose anywhere from one to 20 individuals to call, and we would provide you a list of individuals that you would contact and inquire into their willingness to donate again. Your participation could really help out our blood drive**.** Would you be willing to volunteer?” Depending upon which condition they were assigned, some participants had the confederate say “Your participation could really save some lives”. If the participant responded “yes”, then the confederate asked how many people the participant would volunteer to call. After this point, or after the participant had declined to volunteer, the confederate told the participant that she was part of the experiment, and asked if the participant had any suspicions of this. Following this acknowledgment, the confederate then debriefed participants as to the real purpose of the experiment to see how types of video games may affect prosocial behavior and asked if the participant had any questions. At this point the experiment ended, and the participant was thanked and left.

**Results**

**Discussion**

It’s possible that aggression is also increased even though prosocial behavior is increased.

References

Anderson, C. A., Andrighetto, L., Bartholow, B. D., Begue, L., Boxer, P., Brockmyer, J. F., . . . Warburton, W. (2015). Consensus on media violence effects: Comment on bushman, gollwitzer, and cruz (2015).*Psychology of Popular Media Culture, 4*(3), 215-221. doi:http://dx.doi.org.cmich.idm.oclc.org/10.1037/ppm0000063

Anderson, C. A., & Dill, K. E. (2000). Video games and aggressive thoughts, feelings, and behavior in the laboratory and in life.*Journal of Personality and Social Psychology, 78*(4), 772-790. doi:http://dx.doi.org.cmich.idm.oclc.org/10.1037/0022-3514.78.4.772

Anderson, C. A., & Bushman, B. J. (2002). Human aggression.*Annual Review of Psychology, 53*, 27-51. Retrieved from http://cmich.idm.oclc.org/login?url=http://search.proquest.com.cmich.idm.oclc.org/docview/60451427?accountid=10181

Anderson, C. A., Shibuya, A., Ihori, N., Swing, E. L., Bushman, B. J., Sakamoto, A., . . . Saleem, M. (2010). Violent video game effects on aggression, empathy, and prosocial behavior in eastern and western countries: A meta-analytic review.*Psychological Bulletin, 136*(2), 151-173. doi:http://dx.doi.org.cmich.idm.oclc.org/10.1037/a0018251

Bartholow, B. D., & Anderson, C. A. (2002). Effects of violent video games on aggressive behavior: Potential sex differences.*Journal of Experimental Social Psychology, 38*(3), 283-290. Retrieved from <http://cmich.idm.oclc.org/login?url=http://search.proquest.com.cmich.idm.oclc.org/docview/619875486?accountid=10181>

Bartholow, B. D., Bushman, B. J., & Sestir, M. A. (2006). Chronic violent video game exposure and desensitization to violence: Behavioral and event-related brain potential data.*Journal of Experimental Social Psychology, 42*(4), 532-539. Retrieved from http://cmich.idm.oclc.org/login?url=http://search.proquest.com.cmich.idm.oclc.org/docview/621352842?accountid=10181

Bushman, B. J., & Anderson, C. A. (2002). Violent video games and hostile expectations: A test of the general aggression model.*Personality and Social Psychology Bulletin, 28*(12), 1679-1686. Retrieved from http://cmich.idm.oclc.org/login?url=http://search.proquest.com.cmich.idm.oclc.org/docview/214004303?accountid=10181

Bushman, B. J., & Anderson, C. A. (2009). Comfortably numb: Desensitizing effects of violent media on helping others.*Psychological Science, 20*(3), 273-277. Retrieved from http://cmich.idm.oclc.org/login?url=http://search.proquest.com.cmich.idm.oclc.org/docview/37257436?accountid=10181

Bushman, B. J., & Gibson, B. (2011). Violent video games cause an increase in aggression long after the game has been turned off.*Social Psychological and Personality Science, 2*(1), 29-32. doi:http://dx.doi.org.cmich.idm.oclc.org/10.1177/1948550610379506

Bushman, B. J., Gollwitzer, M., & Cruz, C. (2015). There is broad consensus: Media researchers agree that violent media increase aggression in children, and pediatricians and parents concur.*Psychology of Popular Media Culture, 4*(3), 200-214. doi:http://dx.doi.org.cmich.idm.oclc.org/10.1037/ppm0000046

Carnagey, N. L., Anderson, C. A., & Bushman, B. J. (2007). The effect of video game violence on physiological desensitization to real-life violence\*.*Journal of Experimental Social Psychology, 43*(3), 489. Retrieved from <http://cmich.idm.oclc.org/login?url=http://search.proquest.com.cmich.idm.oclc.org/docview/214790373?accountid=10181>

Engelhardt, C. R., Bartholow, B. D., Kerr, G. T., & Bushman, B. J. (2011). This is your brain on violent video games: Neural desensitization to violence predicts increased aggression following violent video game exposure.*Journal of Experimental Social Psychology, 47*(5), 1033-1036. Retrieved from http://cmich.idm.oclc.org/login?url=http://search.proquest.com.cmich.idm.oclc.org/docview/864618359?accountid=10181

Fischer, P., Kastenmüller, A., & Greitemeyer, T. (2010). Media violence and the self: The impact of personalized gaming characters in aggressive video games on aggressive behavior.*Journal of Experimental Social Psychology, 46*(1), 192-195. doi:http://dx.doi.org.cmich.idm.oclc.org/10.1016/j.jesp.2009.06.010

Fraser, A. M., Padilla-Walker, L., Coyne, S. M., Nelson, L. J., & Stockdale, L. A. (2012). Associations between violent video gaming, empathic concern, and prosocial behavior toward strangers, friends, and family members.*Journal of Youth and Adolescence, 41*(5), 636-649. doi:http://dx.doi.org.cmich.idm.oclc.org/10.1007/s10964-012-9742-2

Gentile, D. A., Anderson, C. A., Yukawa, S., Ihori, N., Saleem, M., Ming, L. K., . . . Sakamoto, A. (2009). The effects of prosocial video games on prosocial behaviors: International evidence from correlational, longitudinal, and experimental studies.*Personality and Social Psychology Bulletin, 35*(6), 752-763. doi:http://dx.doi.org.cmich.idm.oclc.org/10.1177/0146167209333045

Greitemeyer, T. (2014). Intense acts of violence during video game play make daily life aggression appear innocuous: A new mechanism why violent video games increase aggression.*Journal of Experimental Social Psychology, 50*, 52. Retrieved from <http://cmich.idm.oclc.org/login?url=http://search.proquest.com.cmich.idm.oclc.org/docview/1465233147?accountid=10181>

Greitemeyer, T., & Mügge, D.,O. (2014). Video games do affect social outcomes: A meta-analytic review of the effects of violent and prosocial video game play. *Personality and Social Psychology Bulletin, 40*(5), 578. Retrieved from <http://cmich.idm.oclc.org/login?url=http://search.proquest.com.cmich.idm.oclc.org/docview/1518748736?accountid=10181>

Greitemeyer, T., & Osswald, S. (2010). Effects of prosocial video games on prosocial behavior.*Journal of Personality and Social Psychology, 98*(2), 211-221. doi:http://dx.doi.org.cmich.idm.oclc.org/10.1037/a0016997

Greitemeyer, T., & Osswald, S. (2011). Playing prosocial video games increases the accessibility of prosocial thoughts.*The Journal of Social Psychology, 151*(2), 121. Retrieved from <http://cmich.idm.oclc.org/login?url=http://search.proquest.com.cmich.idm.oclc.org/docview/867773860?accountid=10181>

Willoughby, T., Adachi, P. J. C., & Good, M. (2012). A longitudinal study of the association between violent video game play and aggression among adolescents.*Developmental Psychology, 48*(4), 1044-1057. Retrieved from http://cmich.idm.oclc.org/login?url=http://search.proquest.com.cmich.idm.oclc.org/docview/901639869?accountid=10181

You, S., Kim, E., & No, U. (2015). Impact of violent video games on the social behaviors of adolescents: The mediating role of emotional competence.*School Psychology International, 36*(1), 94. Retrieved from <http://cmich.idm.oclc.org/login?url=http://search.proquest.com.cmich.idm.oclc.org/docview/1648678842?accountid=10181>