

## Causality between Video Games and Cognitive Aggression

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### ABSTRACT

Previous research has shown that violent video games increase aggressive thoughts, feelings, and physical arousal associated with aggression. Hardcore video game live broadcast has become a trend among gamers, and the effect of violent video game live broadcast can be close to reality. However, there is very little research on the impact of streaming video games. Current research tests the impact of streaming video games on aggressiveness levels. Participants were randomly assigned to watch one of two video game broadcasts, each broadcast for 5 minutes and were asked to complete Buss & Perry Aggression Scale and Word Knowledge Challenge. A two-way analysis of variance was performed between subjects whose empathy type (violent or non-violent) was the independent variable and gender was the predictor. These include the sum of physical attacks, verbal attacks, anger and hostility, and age. The dependent variable measures the availability of aggressive thoughts in people's cognitive abilities and is determined by the words completed in the word completion task. The basic main effect of transmission type individuals who watched broadcasts of violent video games showed a higher percentage of offensive words at word completion. Gender has little effect on the percentage of offensive words completed; however, after controlling for the nature of the live broadcast, males are more aggressive than females in live broadcasts of violent video games. Regarding the proportion of offensive words, there is a significant correlation between gender and the type of transmission. In particular, the proportion of offensive words uttered by men in the violent transmission is higher.

**Keywords:** Behaviour, Cognitive Aggression, Psychological effect, Video games

For a long time, psychology has been studying violent and aggressive behaviors, which exist in various media that may affect people's behavior. Violence is defined as an extreme form of physical assault that can cause physical trauma, such as shooting, punching, and kicking (Anderson et al., 2008). Similarly, aggression is defined as an act intended to cause harm to another person, and the motivation is to avoid harm (Anderson et al., 2008). Although these two terms are often used interchangeably, they are conceptualized as different. Violence is a form of physical attack, and attack is conceptualized as a broad structure, including physical, verbal, and psychological means of harm (Liu, Lewis & Evans, 2014). The similarity between these terms is that violence is a physical manifestation of aggression, but aggression is not necessarily a purely physical manifestation and should not be defined as violence. For example, people with verbal offensive personalities may not be

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contacted as violent behaviour. Violent and aggressive behaviours can be learned by observation (Huesmann, 2007). Regarding aggressive behaviour, various forms of violence and attacks can appear in the media through television programs, movies, and music. These media provide a platform to showcase both violence and aggression, whether intentional or unintentional, can cause people to behave in a specific way, thereby increasing their own physical aggression and violence.

## METHODOLOGY

### *Sample*

Participants were recruited from the friends of researcher. There were a total of 70 participants (45 females and 25 males). The ages of the participants ranged between 18 and 22 years ( $M = 18.35$ ,  $SD = 4.67$ ).

### *Instruments*

YouTube is used for the main stage. The first condition is to see the HALO (violent game) gameplay, which includes scenes in the gameplay. The second condition involves watching the Minecraft game stream (non-violent game) where the player is playing the game. The videos were selected based on a variety of factors, one of which was related to murder and the other was non-violent or less violent. The Buss and Perry Aggression Scale is used to treat aggression as a personality trait. Including 4 functional sub-dimensions, namely physical attack, verbal attack, anger and hostility. This is a 29-item questionnaire in which participants rated certain statements on a Likert 5-point scale (Perry & Buss, 1992). Word completion is used to evaluate the impact of video games on participants. It helped to measure the usability of ideas related to aggression. The questionnaire contains 18 partially completed words, including 6 violent words, 6 non-violent words, and 6 neutral words (Anderson et al., 2004).

### *Procedure*

When deciding to participate in the study, participants were asked to sign a declaration of consent to participate. Participants were scored individually. Participants were randomly assigned to watch one of two video game broadcasts (violent or non-violent) for 5 minutes. Participants were asked to enter demographic information, and the number of hours they usually play video games. Then they were asked to fill in the Buss and Perry scale on paper. Finally, participants were asked to complete a word completion task, which included an incomplete word list, and were asked to fill in the blanks to complete the word. The study lasted 10 to 12 minutes for each participant. Participants were equally divided in both the conditions (35 participants in each).

## RESULTS

Analysis of variance (ANOVA) was used in the analysis between subjects with live video game type and gender as fixed predictors, and aggressiveness and age as covariates. The dependent variable is the percentage of offensive words completed in the word completion task, which is calculated by dividing the number of offensive words by the total number of completed words. The results [Fig:1] show that there is a statistically significant relationship between transmission status and gender, specifically, females in the violent streaming condition showed a significantly lower percentage of aggressive words ( $M = 28.78$ ,  $SD = 5.26$ ) when compared to males in the violent streaming condition ( $M = 48.68$ ,  $SD = 6.27$ ) whereas females in the non-violent stream showed a significantly higher percentage of aggressive words ( $M = 35.39$ ,  $SD = 2.91$ ) when compared to males ( $M = 12.97$ ,  $SD = 6.89$ ). Two independent-sample t-tests were performed to test for aggressive gender differences

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under constant transmission conditions. The results showed when violent video games were played are, males ( $M = 50.71$ ,  $SD = 7.31$ ) completed significantly more aggressive words compared to females ( $M = 29.80$ ,  $SD = 17.09$ ),  $t(22) = -2.53$ ,  $p = .005$ . However, within the non violent video game stream, there was no significant difference between males ( $M = 22.37$ ,  $SD = 12.46$ ) and females ( $M = 31.53$ ,  $SD = 20.36$ ),  $t(22) = .98$ ,  $p = .50$ . Results also showed a significant main effect of streaming condition on the percentage of aggressive words completed. More specifically, those participants who were shown the violent video game streaming ( $M = 38.28$ ,  $SD = 4.49$ ) completed a higher percentage of aggressive words than those individuals who were shown the non-violent video game streaming ( $M = 24.53$ ,  $SD = 4.22$ ).

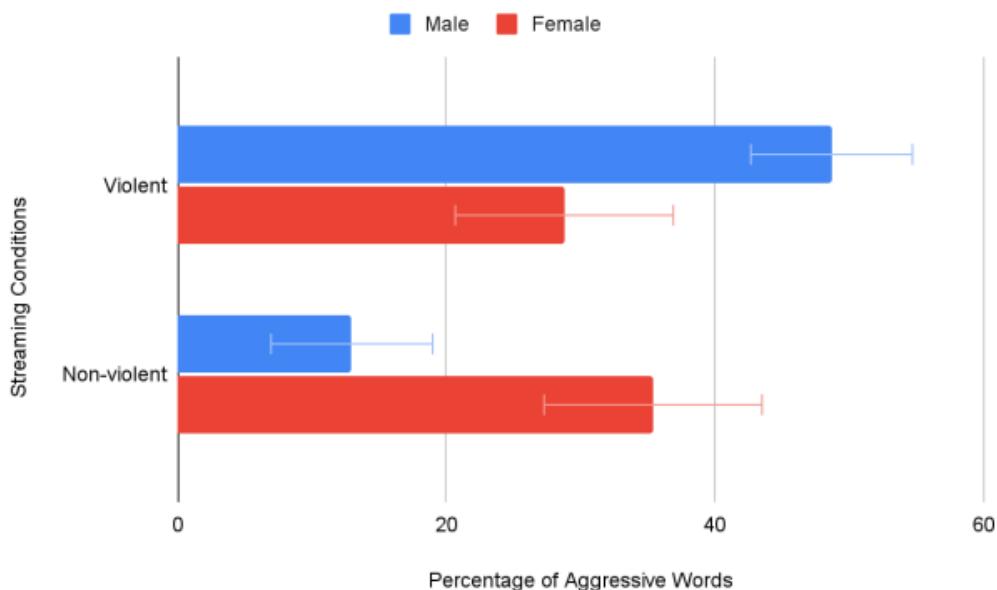


Fig.1. Mean percentage of aggressive words completed by males and females in Violent and Non-Violent Video games conditions. Error bars represent the standard error.

## DISCUSSION

This research aimed to examine the impact of live watching violent video games on people's aggressive cognitive ability. Playing video games has been shown to be associated with aggressive behaviour (Barlett, Anderson & Swing, 2009) and aggressive thoughts (Dill & Anderson, 2000) and feelings (Kuhn et al., 2018). The purpose of this study was to find out whether participants who watched broadcasts of violent video games would use a higher percentage of offensive words in the videos. Word completion task: when gender is specified as a fixed variable, the answer to the question is yes when participants were asked to watch broadcasts of violent video games, these people used violent words at a higher rate. Since there is a significant interaction between gender and the type of video game broadcast in terms of the percentage of offensive words used in the word match task, there is only one significant difference between gender in the context of violent video game broadcast. In particular, when participants were asked to watch violent streaming video games, the proportion of men who used offensive words was significantly higher than that of women.

When studying aggressiveness, there are several possibilities and factors that need to be considered when studying this phenomenon. More specifically, GAM suggests that there are

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two inputs that can explain aggression: situational and personal (Bartlett, Anderson, and Swing, 2009). The one-word completion test is used to measure short-term exposure to violent video games using several variables related to the attack (Anderson et al., 2004). However, word completion does not consider other personality factors that may play a role in responding to attacks. In particular, factors such as temperament, emotion, insecurity, social skills, and competitiveness (Buss & Perry, 1992) will affect the interpretation of the part of speech completed in the word completion task. Consider situational factors and aggressive personality factors. Bartlett, Harris, and Baldassaro (2007) proposed the activation of three internal states; aggressive feelings, aggressive thoughts, and physiological arousal are factors that predict decisions that may lead to more aggressive and impulsive behaviours (Barlett, Harris & Baldassaro, 2007). For example, a person may respond positively in one situation, but may not respond positively in another situation, depending on their environment. Therefore, the limitation of this study is that it excludes 18 situational factors in the degree of attack. More comprehensive measures should be used to assess people's aggressiveness and control personal and situational factors. Objective and situational observations can be made, including various situations in which offensive and non-aggressive reactions may occur, to more reliably measure offensiveness, including personal and situational factors. Playing and streaming video games may be different activities, but their impact on aggressive behaviour still produces similar results. The results of this study show that exposure to violent video games on the broadcast has a significant impact on violent behaviour. Similar to what was found in a study where participants actually played violent video games. Therefore, there is a significant correlation between transmission type and gender. When playing violent video games, men have a higher proportion of offensive words in word completion tasks. Tends to be more aggressive, generally speaking, they like to play and play violent video games, which may make them demographically vulnerable to the negative psychological effects of violent video games. Research on the impact of violence in video games does not focus on a single factor, but on many equally important factors that can be used to explain violence and aggression. These factors include the content of the game and the competitive nature of the game. Although the current study shows important statistics after participants watched the show in a short period of time, people are more aggressive due to prolonged exposure to violent video games.

## **REFERENCES**

- Anderson, C. A., Sakamoto, A., Gentile, D. A., Ihori, N., Shibuya, A., Yukawa, S., Kobayashi, K. (2008, November). Longitudinal Effects of Violent Video Games on Aggression in Japan and the United States.
- Barlett, C. P., Anderson, C. A., & Swing, E. L. (2009). Video Game Effects—Confirmed, Suspected, and Speculative. A Review of Evidence.
- Bartholow, Bruce D. (2002). Effects of Violent Video Games on Aggressive Behaviors: Potential Sex Differences. *Journal of Experimental Social Psychology*.
- Carnagey, N. L. (2006). Is it competitiveness or violent content? the effects of violent sports video games on aggression. *Retrospective Theses and Dissertation*.
- Dill, K. E., & Anderson, C. A. (2000). Video Games and Aggressive Thoughts, Feelings, and Behavior in the Laboratory and in Life. *Journal of Personality and Social Psychology*.
- Farrar, K. M., Krcmar, M., & McGloin, R. P. (2013). The Perception of Human Appearance in Video Games: Toward an Understanding of the Effects of Player Perceptions of Game Features. *Mass Communication and Society*.
- Perry, M., & Buss, A. H. (1992). The Aggression Questionnaire. *Journal of Personality and Social Psychology*.

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Safer, D.M. (2012). Causes of State Hostility and Enjoyment in Player Versus Player and Player Versus Environment Video Games. *Journal of Communication*.

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### **Conflict of Interest**

The author(s) declared no conflict of interest.

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