Investigating the Effects of Violent And Non-Violent Video Games on Morality.

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Abstract

This research paper explores the relationship between exposure to violent video games and morality. This is done by comparing two groups: Group A, consisting of individuals who play violent video games, and Group B, consisting of individuals who play non violent video games. The primary objective of this study is to determine if there exists any causal relationship between violent video game players and their moral choices. The results of this study indicate that there is no significant difference in moral choices between both the groups and it contributes to the ongoing debate regarding the causal effect between violent video games and aggression. It is important to note that due to the limited participant size of N = 40, the results of this study is only applicable within the scope of this study. However, if there were a greater number of participants the results could have some generalizability.

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Introduction

Video Games have become an increasingly popular form of entertainment in recent years. However, with this growth, there has been increased scrutiny regarding the content that many AAA video games (Video games published by major publishers such as Rockstar Games or Sony Entertainment) contain, especially regarding the effect it may have on player's behaviors and attitudes. One area of concern is the potential for video games to promote certain moral disengagement strategies which in turn allows players to justify the harm that they cause in virtual spaces and to virtual characters. Moral disengagement is the process via which people are able to distance themselves from the consequences and ethical implications of their actions by coming up with justifications which give them peace of mind.

Previous studies have already explored the relationship between violent video games and aggression. In one such study, Browne & Hamilton-Giachritsis (2005) found a link between increasing aggression and teenagers' exposure to violent video games. A study carried out by Marcus Schulzke (2009) investigated the moral decision making processes in video games and suggested that video games could present players with moral dilemmas and lead them to consider the implications of their actions. Other studies by Haslam & Loughnan (2014) have also suggested that dehumanization and infrahumanization further allow people to justify their unethical and harmful actions.

The primary objective of this study is to explore the impact of violent and non-violent video games on a player's moral compass and determine if there is any relationship between the type of video games one plays and their morality. To help me achieve this objective, the following research question was generated:

RQ1: Does exposure to violent video games lead to higher levels of immoral behavior compared to exposure to non-violent video games?

This study will utilize a quantitative research method in the form of a questionnaire to investigate the effects of violent and non-violent video games on moral (Ferguson, 2007). The research will involve assigning participants to a violent video game group or a non-violent video game group depending on the kind of video games they play. The data collected will then be analyzed using statistical methods to determine if there are any significant differences between the groups and if there exists any relationship between violent video games and immoral behavior.

This study aims to provide a comprehensive investigation into the relationship between video games and immoral behavior. Specifically, this study will explore the effects, if any, of violent and non-violent video games on a player's moral judgement. By exploring this relationship, this study aims to fill gaps in existing research and serve as a reference for any future studies that may investigate this topic. While previous research has suggested that violent video games do have a negative impact on a player's morality, other findings have suggested that no such relationship exists. Through examining this ongoing debate and then carrying out a questionnaire based experiment this study will provide valuable insights into the effects violent and non-violent video games have on a player's moral decision making.

Related Work

This section of the paper aims to provide a comprehensive review and analysis of the existing literature related to video games and aggression. By examining other studies that have

contributed knowledge to this research topic this section hopes to inform the reader about what already exists and what other academics have contributed to this field.

There exists a lot of debate regarding the existence of a causal relationship between violent video games and immoral behavior and despite the intensity of these debates, research has always produced mixed findings. Some parties such as Ferguson (2007) and Kuhn et al. (2019) claim that there exists no causal relationship between violent video games and violence whereas other such as Bushman and Gibson (2011) claim that video games do enable people to display aggressive behaviors in real life. Engelhardt et al. (2011) took it one step further by using EEG and analyzing brain waves from the parietal lobe in order to determine if video games do have any correlation to aggression and desensitization to violence.

Ferguson (2007) argued that most papers that claimed to have proved that there exists a link between violent games and aggression have utilized fairly unstandardized testing methods and a lack of significance over multiple groups. In particular Ferguson (2007) harshly criticized a popular study by Anderson & Dill (2000). He claimed that Anderson & Dill (2000) had utilized confidence intervals that crossed zero as evidence to support their claims that violent video games cause aggressive behavior. Their noise blast test (Ferguson et al., 2008) was also regarded as very non standard and therefore not a reliable source. Ferguson claimed that these were significant mistakes on the part of Anderson & Dill (2000) and therefore their results cannot be considered as proof of a positive finding. Ferguson (2007) went on to claim that Anderson & Dill (2000) only questioned the link between violence and video games with their experimental study rather than supporting it. Ferguson later went on to use a newly standardized version of the noise blast test used to test for aggression and suggested that there was no relationship found between violent game exposure and aggression (Ferguson et al., 2008). He claimed that using violent video games was a tool used by media to simplify the cause of violent actions. A logical comparison was drawn where Ferguson said “It is not hard

to ‘‘link’’ video game playing with violent acts if one wishes to do so, as one video game playing prevalence study indicated that 98.7% of adolescents play video games to some degree [3] with boys playing more hours and more violent games than girls. However is it possible that a behavior with such a high base rate (i.e. video game playing) is useful in explaining a behavior with a very low base rate (i.e. school shootings)?” (Ferguson, 2007).

Another study carried out by Ferguson (2008) found that once we limit exposure to family violence, direct exposure to violent video games did not hold any predictive power regarding the commission of violent crimes. This suggests that violent video games inherently do no lead to aggressive behavior or immoral acts but act as a stylistic catalyst for individuals who are already exposed to such behaviorisms as a part of their daily lives. Ferguson (2008) did admit that exposure to violent video games could be a predictor for violence in select groups of individuals due to innate aggression or mental health issues.

Kuhn et al. (2019) carried out a longitudinal study to observe if violent video games cause aggression. Their participants had a mean age of 28 and were divided into one group that played the violent video game *GTA V* and a second group that player the non violent simulation game *The Sims 3* over the period of two months. Kuhn et al. employed a multitude of questionnaires and behavioral tests which assessed aggression, mood, empathy and anxiety (to name a few of the tests) in order to accurately judge whether long term exposure to the video games had any effects on the participants. Kuhn et al. sufficiently covered all bases when carrying out their study. They carried out a testing session before exposure to the games which established a baseline for comparisons, a training period of 2 months and a final follow up testing session 2 months after the training period. The participants each played their respective games for 30 minutes a day throughout the duration of the study. They concluded that they did not find any relevant negative effects in response to violent video game playing. Only 3 out of their 208 statistical tests showed a significant interaction pattern that would be in line with their

hypothesis but this was attributed to random chance and the study concluded that there were no detrimental effects of playing violent video games.

Alternatively, a study by Bushman and Gibson (2011) reported that violent video games can stimulate aggression for an extended period of time. Participants in their study were randomly assigned to 1 of 6 games. 3 of those games were considered as violent and the other there were non violent. After their 20 minute play session participants were asked to rate how "absorbing, action-packed, arousing, boring, enjoyable, entertaining, exciting, frustrating, fun, involving, stimulating, addicting, and violent" (Bushman & Gibson, 2011) their game was on a scale of 1 to 10. Some participants were then randomly assigned to the rumination condition. The rumination condition participants were asked to think about their gameplay and how they could improve when they play the game again. 24 hours later all participants were then subjected to a reaction time task with a partner in which the winner could use a noise blast to "punish" the loser. An effects test found that the participants who ruminated displayed more aggressive behaviors than those who did not ruminate. Bushman & Gibson (2011) went on to claim that this was the first laboratory experiment to show that violent video game can stimulate aggression for an extended period of time. However, one could question the methodology of their study. Was it truly the video game that resulted in participants being more aggressive during the noise blast test or was it the rumination that caused that? They concluded that rumination keeps aggressive thoughts, feelings and behavioral tendencies active in the semantic memory. This conclusion on their study seems more appropriate that concluding that there exists a causal relationship between violent video games and aggression over an extended period of time.

Engelhardt et al. (2011) investigated the effects of neural desensitization towards violence and whether it can be a predictor for increased aggression following violent video game exposure. The majority of this study was conducted using EEGs and the noise blast test.

The participants were first exposed to images that were considered neutral and then images which were considered violent. Participants were then told to think about these images. Following the viewing, participants were subjected to the noise blast test, like in the other studies, and the winner could sound noise into the ears of their opponent. The data from the noise blast was analyzed and the conclusion that participants who played a violent video game were more aggressive that those who played a non violent video game. The study also found that the P3 response from the parietal from was associated with aggression. Participants who has a smaller P3 (due to desensitization) were more likely to display higher levels of aggression. This relationship remained significant across the different types of video games the participants played. However, the direct impact of the video game condition on aggression was reduced when account for the P3 response. This suggested that the P3 response might play an important role in predicting aggressive behavior, regardless of the specific video game being played. The study concluded that acute desensitization to violence can account for the casual effect of violent video game exposure on aggression. Since acute desensitization to violence is considered a mental disorder (Gaylord-Harden et al., 2017), this outcome is surprisingly in line with what Ferguson (2008) claimed with violent video games acting as a stylistic catalyst for individuals with innate aggression or mental disorders.

It is important to note that all of these studies have been conducted with adults who are not cognitively impaired in any way. The outcomes of these studies would be different if it was carried out on adolescents or children since exposure to games that promote or glorify violence could lead to children developing scripts, beliefs and personalities from said games that can be deemed aggressive or immoral (Whitaker and Bushman (2009).

Methods

The methods section of this research paper will provide an overview of the procedures and the techniques and provide justifications as to why they were employed to collect the relevant data and carry out the study. This section will outline the participation selection process, the measures and instruments used, the difference between violent and non violent video games, the ethical considerations, the procedure of the experiment, the data analysis and finally the results.

Each subsection goes into detail regarding the steps that were taken in an attempt to justify the processes used and to maintain transparency.

Participants

Forty healthy participants (mean age = 26 years, SD = 9.5, range = 18 - 49 years, 16 females, 20 males, 4 Gender Non Confirming) were recruited to help carry out this study. Since there was a requirement for participants to have played violent and nonviolent video games, the participants were recruited via a mix of snowball sampling and non-random sampling. The sample consisted of college students within a specified age range to help reduce the likelihood of extraneous variables.

The participants were given a pre-questionnaire and based on the results of that questionnaire, they were divided into two groups. Group A consisted of participants who regularly played violent video games and Group B consisted of participants who played nonviolent video games. Participants were made aware of the design of the experiment and that they would be presented with certain moral scenarios during the questionnaire. Since participants were chosen via non-random and snowball sampling we did not encounter any participants with little to no experience in playing video games.

Measures and Instruments

To assess the levels of moral disengagement among the participants, a self report questionnaire was employed. The questionnaire was adapted from other such similar questionnaires (Stoll-Kleemann et al., 2023) utilized by previous studies in order to maintain clarity and face validity. This ensured that the questionnaire successfully measured the targeted constructs of the study.

The questionnaire itself consisted of 25 questions with 5 questions allocated to one of the 5 moral disengagement strategies outlined by bandura (Bandura et al., 1996). The 5 strategies that participants are being tested for are as follows:

i) Moral Justification: Convincing oneself that your behavior is acceptable or morally right, despite potential harm of negative consequences, by framing your actions as necessary and for the greater good.

ii) Euphemistic Labeling: Using language to minimize moral implications of your actions by employing euphemisms or socially acceptable terms.

iii) Advantageous Comparison: Comparing your actions to others' behaviors or social norms to justify your morally questionable actions.

iv) Displacement of Responsibility: Attributing responsibility for your actions to external factors in an attempt to disengage yourself from personal accountability.

v) Distorting Consequences: Downplaying the negative consequences of your actions, thereby reducing the perceived harm caused.

Each of these strategies were chosen due to the fact that most video games that are considered to be violent have their players utilize one or more of these disengagement methods in order to justify their violent actions in virtual spaces.

Differentiating between Violent and Non Violent Video Games

In order to successfully distinguish between violent and nonviolent video games the ESRB (Entertainment Software Rating Board) and PEGI (Pan European Game Information) rating systems were taken into account since they are the most widely recognized and adopted rating systems. These rating systems provide crucial information about the content and age appropriateness of video games. The ESRB and PEGI systems rate games on multiple content descriptors including but not limited to violence, language, sexual content and gambling.

For the study, any rating above Teen via the ESRB and 16 via the PEGI systems are considered to be violent video games since games rated similarly tend to have gun violence and harsh language. The pre questionnaire asked participants which games they played the most and the results are depicted in the graph below (*Figure 1)*.

Figure 1: A graph depicting the distributions in video games that the participants reported playing.

Since all of the video games that the participants reported have ESRB or PEGI ratings this made classifying participants by the type (violent or non-violent) of video games they played easier (*Figure 2)*.

Figure 2: Recurring games and their respective ESRB ratings.

Video Game	ESRB Ratings
League of Legends	Teen 13+
Valorant	Teen 13+
Destiny 2	Teen 13+
Minecraft	E10+
SIMS	Teen 13+
Stardew Valley	E10+
Warframe	Mature 17+
Rocket League	Everyone

Some participants reported playing a violent and a non-violent game. In this scenario the participants were automatically assigned to Group A (the violent video games group) since they have engaged with violent video games.

Ethical considerations

The moral disengagement questionnaire will feature questions that will ask participants to think about morally questionable situations. This is why the participants were asked to sign informed consent forms (Appendix C) which clearly explained the purpose of the study. Participants were also informed of their right to withdraw from the study at any time without

penalties or repercussions. They were also assured that their data and responses would be anonymized so there would be no way to identify individual participants.

This study acknowledges the importance of responsible and ethical use of research findings. The results of this study will be reported objectively and accurately in order to avoid the misinterpretation and exaggeration of results.

Procedure

The experiment will follow a specific procedure to ensure consistency and accuracy in data collection. The participants that were selected via the non random and snowball sampling methods will first be informed about the procedure of the experiment and will be asked to completed an informed consent form (Appendix C). They will then fill out a pre questionnaire (Appendix A) and will then be assigned to either Group A (Violent games) or Group B (Non Violent Games). After this assignment, participants will be given the Moral Disengagement questionnaire (Appendix B) and asked to fill it out while giving some thought to their responses. Since the questionnaires were administered via Google Forms, the experiment took place online and participants were on a voice call with the researcher throughout the duration of the experiment. Participants were also requested to find a relatively quiet space in order to minimize any distractions that may alter the outcome of the experiment.

After completing the Moral Disengagement Questionnaire participants were then debriefed about the purpose of the study, the hypotheses being test and their overall results. The debriefing session prioritized the voluntary nature of their participation and that they could contact me to request the deletion of their data whenever they wanted to. Any questions that the participants had about the experiment were also answered here in an attempt to ensure transparency and address any discomfort they had with the questions in the questionnaire.

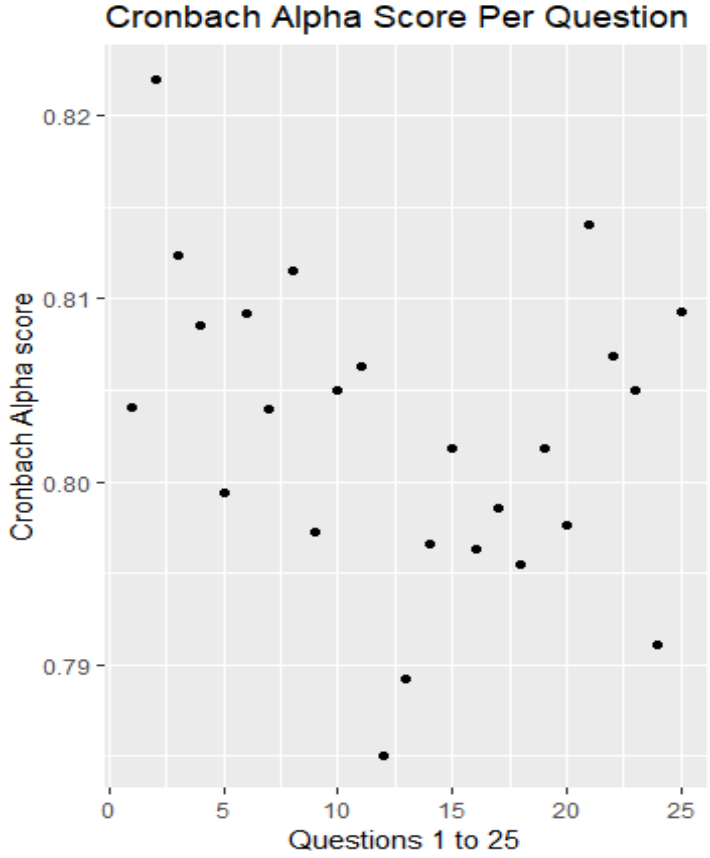
Overall, the participants left with a clear understanding of the objectives and outcomes of this study.

Data Analysis

The collected raw data was pre processed in Microsoft Excel. In this stage all the questions were numbered from Q1 to Q25 to help with statistical analysis. The pre questionnaire data was also visualized with the help of excel in order to make informative graphs on the distribution and preferences of our participants. The mean score for each participant was calculated and the total mean score for each Group. The scores range from 1 to 5 with 1 being the least amount of moral disengagement used and with 5 being the highest amount of moral disengagement used. A lower score indicates a better moral stance and a higher score indicates a worse moral stance.

After pre processing, the data was then ported over to R for statistical analysis. We needed to test the internal consistency of the questionnaire. We did this by using Cronbach's alpha coefficient. The data from both groups were combined into a single data set and the questionnaire data was extracted. Cronbach's alpha was calculated using the *alpha()* function from the *psych* package in R.

Figure 3: The raw alpha scores for all the questions in the questionnaire.



Since all of our raw alpha scores in *Figure 3* were above 0.7 we can conclude that there does exist some level of internal reliability within the questions and the questionnaire as a whole.

Descriptive statistics were then computed to explore the average scores per section of the questionnaire for both Groups A and B. However, we are only interested in the means of the scores per participant.

Group A					
Min	1st Qu.	Median	Mean	3rd Qu.	Max
1.08	1.63	1.82	1.93	2.21	3.12

Group B					
Min	1st Qu.	Median	Mean	3rd Qu.	Max

1.12	1.63	1.9	1.86	2.04	3.16

To further understand the distribution of the scores before running a correlation test, we needed to create histograms for the average scores per participant within both groups. These histograms provide visual representations of the data and helps confirm whether the data is normally distributed.

Figure 4: Mean Scores for Group A.

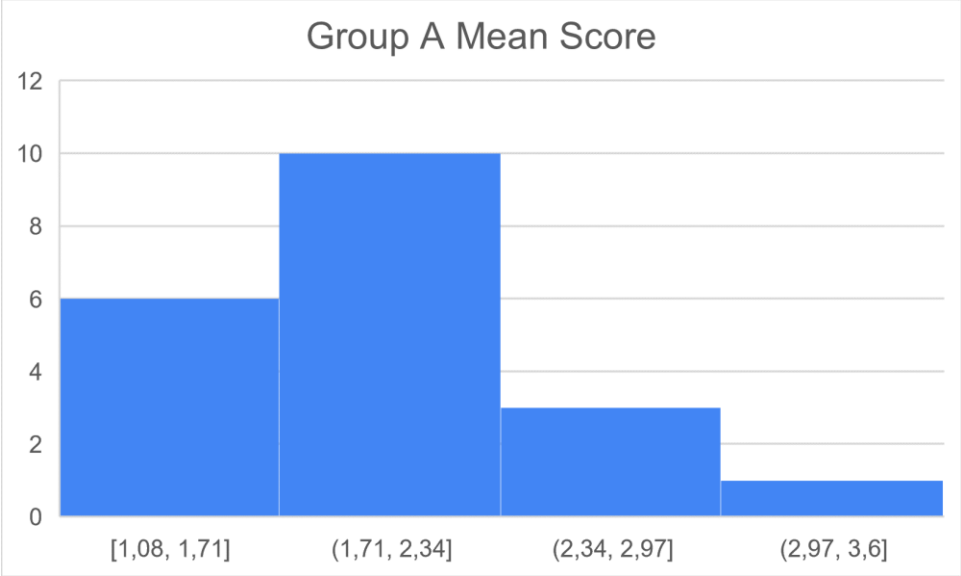
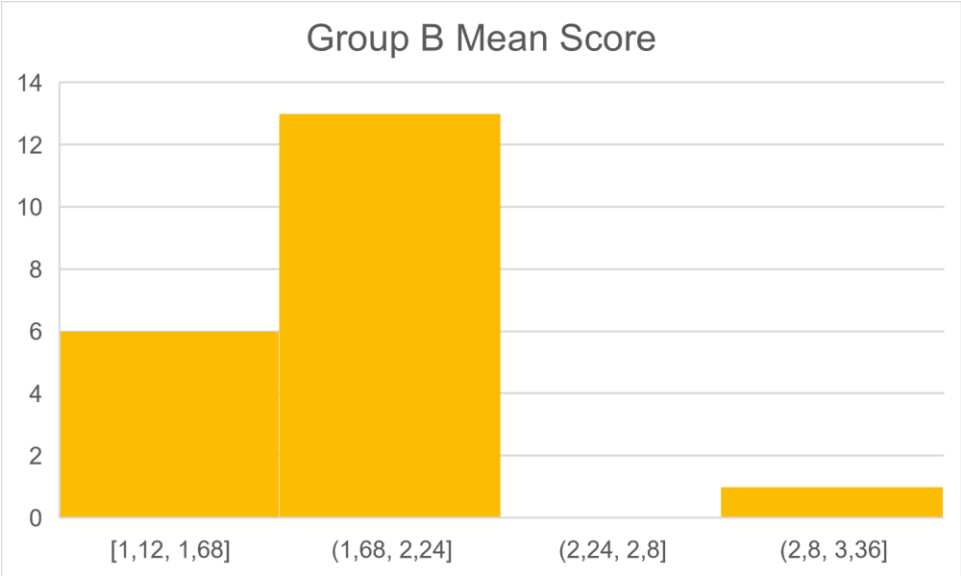


Figure 5: Mean Scores for Group B.



Upon visual inspection of *Figure 4* and *Figure 5* we can see that the distributions for both groups deviated from a normal distribution. Both histograms depicted a left skew and asymmetrical patterns. This is important for the correlation test because we cannot use statistical and correlational tests that are considered parametric tests due to their assumption that the data is normally distributed.

A Wilcoxon rank signed test was conducted due to the asymmetrical distribution of the data.

Figure 6: Mean Comparison Group A & Group B.

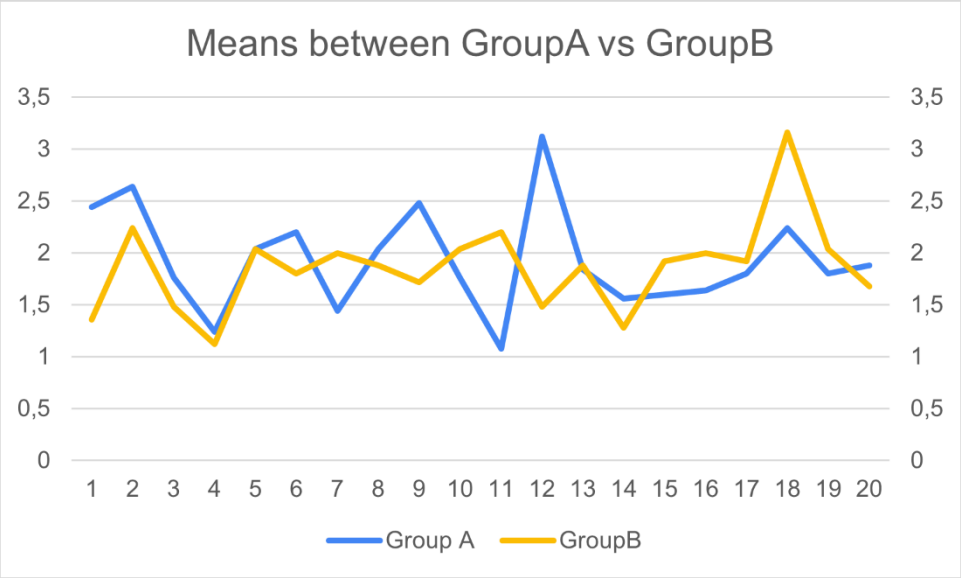
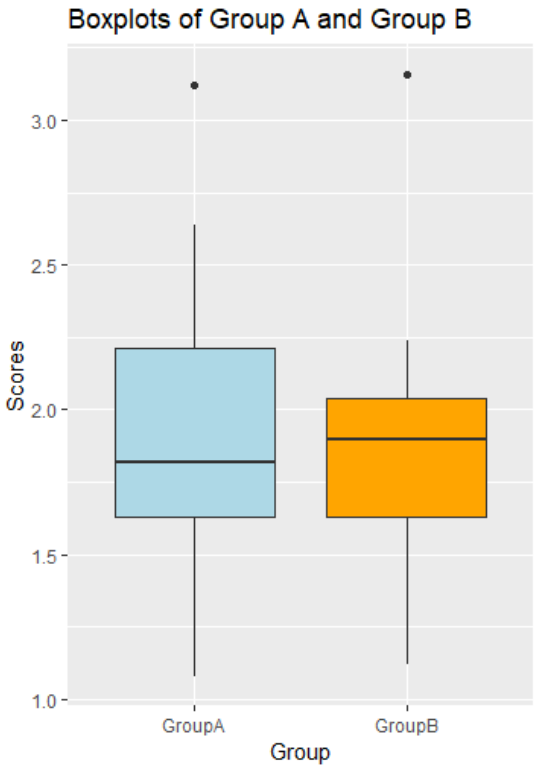


Figure 7: Boxplot containing the means for Groups A and B.



As we can see in *Figure 6* there seems to be no relationship between Group A and Group B. The graphs indicate no apparent pattern and further supports our case that there exists no correlation between the groups. From *Figure 7* we can see that the medians for both groups are almost the same and each group has their respective outliers. The whiskers displayed in the boxplots, which represent the range of values beyond the box, are nearly identical in length for both Groups. This indicates a similar spread of data on either side of the median.

Results

The null hypothesis and the alternative hypothesis tested in this study are as follows:

H0: There is no significant difference in levels of moral disengagement between individuals who play violent video games and those who play non violent video games.

H1: There exists a significant difference in levels of moral disengagement between individuals who play violent video games and those who play non violent video games.

The Wilcoxon signed rank test was conducted to examine the relationship between the average scores per participant in Group A and Group B and it indicated that the Group A means were not significantly different from the Group B means; $Z = 103.5$, $p = 0.75$.

With a p value of 0.75, which is significantly higher than the conventional level of 0.05, we can conclude that we fail to reject the null hypothesis. The pseudo median difference of 0.04 provides us with an estimate of the central tendency of the paired observations. In this case, it suggests that, on average, there is a small positive difference between the groups. Since the 95 percent confidence interval for the location shift (-0.26 to 0.34) includes 0, it indicates that the observed difference is not statistically significant.

It is important to note that these results might be influenced by the smaller sample size of this study. Considering the non normal distribution of the data and the non significant correlation, one must interpret these results with caution. These results only suggest that within the limitations of the study, there exists no meaningful relationship between the exposure of violent video games and levels of moral disengagement.

Limitations

This study aimed to investigate the relationship between exposure to violent video games and levels of moral disengagement. This was done by having a control group that consisted of non violent video game players as a baseline and providing said group with the same test on moral disengagement. While the findings of this study provide insights into this research question it is also important to acknowledge the limitations that may have impacted the outcomes and reliability of the study.

The most notable limitation of this study is the small sample size. This study relied on data collected from a small number of participants ($N = 40$). This definitely restricts the generalizability of the findings. The disadvantages of the small sample size were also apparent

when one checks for the normality of the data and notices the skews and irregularities. One must exercise caution when drawing broad conclusions based on the findings since the findings may only apply within the limitations of this study.

The study design was cross sectional due to the time limit imposed on it. The data collected at a single point in time does not allowed for the inclusion of any sort of temporal association when assessing the relationship between the groups. While there was an attempt to include long term video game players in this study one could argue that people are constantly subject to change as they consume different forms of media. A longitudinal study that tracks participants over time and takes into consideration all the games they play and the duration they played said games for would provide more robust evidence for understanding the impact of video game exposure on moral disengagement.

Another important consideration is the reliance of self report measures to assess both exposure to video games and levels of moral disengagement. Participants were expected to be truthful and were informed that their data would be anonymized, however this does not guarantee the exclusion of various biases. Participants may have under or over reported their exposure to video games and could have provided socially desirable answers when questioned about their use of moral disengagement strategies. The use of objective measures or multiple sources would have been ideal but given the time and equipment constraints it was unfeasible.

The study did aim to exercise caution with regards to extraneous variables and limit the testing to the Independent and Dependent variables but could not take into account variables such as individual differences and opinions on morality. Personal differences and opinions can greatly vary from person to person and they could have a significant effect on the results of the questionnaire. Examining quantitative data limited the ability to explore contextual or qualitative factors. For future studies, incorporating interviews and focus groups could offer deeper insights into participant experiences and perspectives could result in more robust results.

In conclusion, this study contributes to the existing literature on the relationship between exposure to violent video games and moral disengagement. However, it is important to recognize the limitations associated with small sample sizes, reliance on self report methods, strict categorizations of video game content and the limited qualitative exploration used. Future research could address some of these limitations in order to provide a more comprehensive understanding of the topic and enhance the generalizability of their findings.

Discussion

Within the scope of the present study we tested the effect of playing violent and non violent video games on a person's use of moral disengagement. To accomplish this we tested two groups: Group A containing people who play violent video games and Group B containing people who play non violent video games. Both groups were given the same questionnaire on Moral Disengagement Methods (Appendix B) and their results were compared to see if there were any significant conclusions that we could draw. We concluded that there was not enough evidence and we failed to reject our null hypothesis.

Comparing Results to Other Studies

The findings in this study are supported by findings in other studies carried out by Kuhn et al. (2019) where they state that there were no relevant negative effects in response to playing violent video games. Kuhn et al. (2019) carried out a longitudinal study, which my study could not carry out, and they reported no long term effects in participants who played violent video games. They measured across multiple aggression self reporting tests (Buss–Perry aggression questionnaire, State Hostility scale, Illinois Rape Myth Acceptance scale, Moral Disengagement scale, World View Measure and Rosenzweig Picture Frustration test) and did not find any effects across all tests. A meta analytical review of effects of video games carried

out by Ferguson (2007), showed that there might be some positive effects that violent video games have on players. It also highlights the media bias when it comes to reporting in this field of research and a generational gap. Ferguson (2007) also concluded that there was not enough evidence to suggest that violent video game exposure is related to aggression and immoral actions. They also go on to say that exposure to violent video games is not a concern for most individuals, however it may still be worth examining whether there are special populations for whom video game violence may pose a risk. Ferguson (2007) concluded that violent video games are not a cause of violent and immoral behavior.

Another study carried out by Ferguson et al. (2008) discussed that violent behavior after being exposed to violent video games could be linked to aggressive personalities or family violence. Direct exposure to violent video games did not have any predictive power regarding aggression and acts of violence. However, the interaction between someone with an aggressive personality and violent video games could be used as a predictor for violence and immoral choices. This is also in line with the conclusions of Ferguson (2007) where violent video games acted as a catalyst for pre existing aggressive and immoral tendencies within people.

While there are a multitude of studies suggesting that there exists no relationship between violent video games and immoral behavior; there are also studies which suggest that there definitely exists a relationship between these variables.

Bushman and Gibson (2011) carried out an experiment to test if college going students did display more aggression after playing a violent video game. In their study they found that men who played a violent video game for just 20 minutes and then ruminated about it were more aggressive 24 hours later. It is important to note that their study focused on the ruminating aspect, since this effect was not observed in men who do no ruminate. They also claim generalizability because in the “real world” people play video games for longer periods of time. One can argue that the prolong increased aggression was due to the fact that participants were

asked to ruminate rather than just go on about their day. When asked to ruminate over 24 hours about the violence in a video game people tend to display those aggressive behaviors in some for or the other as highlighted by the cognitive neo association theory (Lange et al., 2012).

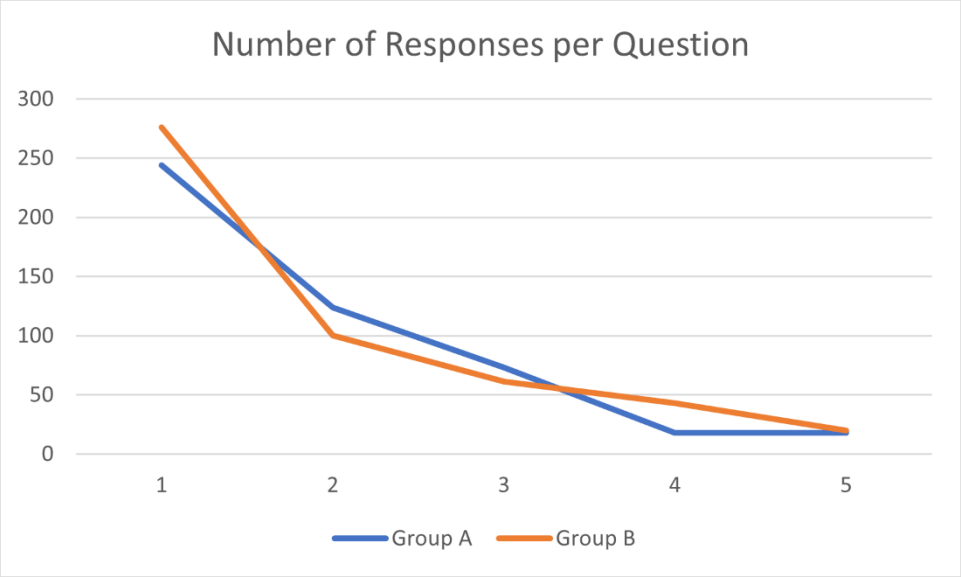
Engelhardt et al. (2011) mentions how violence in media could lead to desensitization to said violence which in turn is a predictor for aggression. Their analysis was based on EGG scans of 32 participants who played a violent game. They compared the waveforms formed are the parietal (PS, P4, Pz) electrode sites for participants who had play violent video games and those who had not. When both groups of participants were exposed to violent media they was smaller PS waves among participants who were exposed to violent video games. While one can argue that this might be arguing for increased aggression post exposure to violent video games, it is important to note that people behave and conform to social tendencies according to the social norms theory (Perkins & Berkowitz, 1986). So, while people may think of acting in a certain way, there is definitely no way to ensure that they will carry out that action in the real world without first ensuring that social norms are being followed.

As one can see, it is very evident that there is constant back and forth regarding this field of research and there are hopes that this study might contribute to existing literature.

Outliers and Other Considerations

The results of this study took into consideration the average score across all participants from the two groups. It is important to mention that most of the responses we received for the questionnaire were 1 also known as very unlikely. In *Figure 8* we can see that there were less that 50 responses that ranged from 3 to 5 for the questionnaire.

Figure 8: Number of Responses.



This could be the result of adhering to social norms or our participants may have genuinely been good people for the most part. There were expectations for some central tendency bias due to the fact that the questionnaire ranged from 1 – 5 (very unlikely to very likely) but surprisingly this was not the case. This also could have just been the effect of a questionnaire about morality and people willing to answer differently in order to fit in to societal standards. This brings up one of the limitations of the study where there might be self reporting biases present when participants answer the questionnaire. For future studies, carrying out additional aggression tests like Kuhn et al. (2019) and pairing them with group sessions over a few months might be the best way to build a portfolio on a participant and therefore accurately assess if there have been any increases in aggression or changes in their moral stances.

Some of the questions presented in the outlier were considered to be “obvious choices” as claimed by some participants after the experiment since they presented extremely immoral situations. The two questions that were considered really obvious choices were:

Qi) You work for a pharmaceutical company and your boss instructs you to falsify data in order to get FDA approval for a new drug. How likely would you be to go along with your boss's request?

Qii) You steal something from a store because you were "just trying to fit in" with a group of friends. How likely would you be to use this justification?

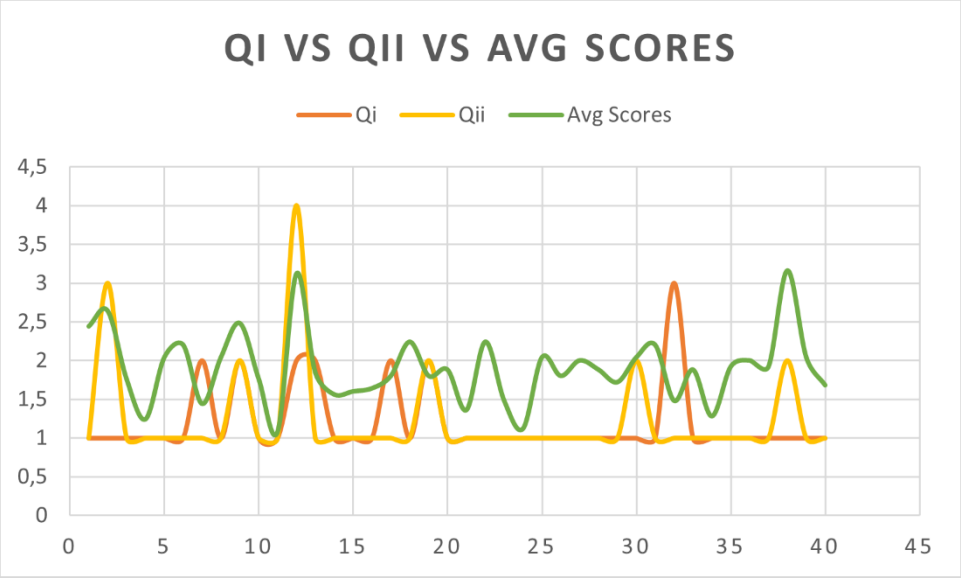


Figure 9: Qi and Qii having lower than average scores.

Figure 9 depicts the irregularities of Qi and Qii and how they are below the average score by almost 1 or 2 points throughout all participants. While there are certain spikes, these can just be attributed to individuals who regard authority (in the case of Qi) and in-groupism (in the case of Qii) as above moral behavior. Ideally we would disregard questions with such one dimensional answers because they may skew our overall results but the Cronbach's Alpha test indicated that all of our questions were consistent. The questions were also retained due to our total number of participants being N = 40; which is rather low for a study like this.

This study had participants ranging from the ages of 18 – 49 years; therefore, it focused only on adults who are not as impressionable as children and are less likely to imitate or carry out actions depicted within a violent video game. As claimed by Whitaker and Bushman (2009), video games can offer much excitement, knowledge and engagement but children are

also more likely to imitate violence within such games if it is glorified or made commonplace. Cognitive and neurological development along with emotional maturity may be influenced by violence and could lead to children developing scripts, beliefs and personalities that can be deemed aggressive or immoral.

Future Studies

For future studies that may want to provide more insight into this field would primarily be to have a much larger sample size. It would help improve the generalizability of the findings and mitigate the influence of outliers. Having multiple data collection methods will help paint a more comprehensive picture for the variables that we are interested in. Since morality differs between people, it would be helpful to get to know their original moral stances and then run a comparison a few months into the study to see if anything might have changed. Studies that measure changes over periods of time are also more reliable since they are able to accurately measure any changes in participants. Mitigating the negative effects of self reporting biases via focus groups and interviews will also help generate more robust and more generalizable results. And finally there must be a lot of transparency in the process; media outlets and individuals with different views due to generational differences can tend to misinterpret results which makes transparency in every stage of the study exceptionally important.

Conclusion

Results from the analysis of data acquired from the study helped answer the research question within the scope of this study. While there were certain instances where the reliability and generalizability of my conclusions can be questioned, I believe that it accomplished its main objective of examining the relationship between violent video games and the impact they may have on morality. The finding did indicate that there was no significant difference in moral

disengagement scores between individuals who play violent video games and those who do not, suggesting that exposure to violent video games may not have any impact on morality. It is important to note that every claim made about the findings of this study and the results are limited to the scope of this study in particular which is unfortunate but I believe the study can be replicated with more participants for more robust results. It is my hope that this study will serve as a foundation on for further investigation and mistakes to avoid in order to settle the debate regarding violent video games leading to aggression and immoral behavior.

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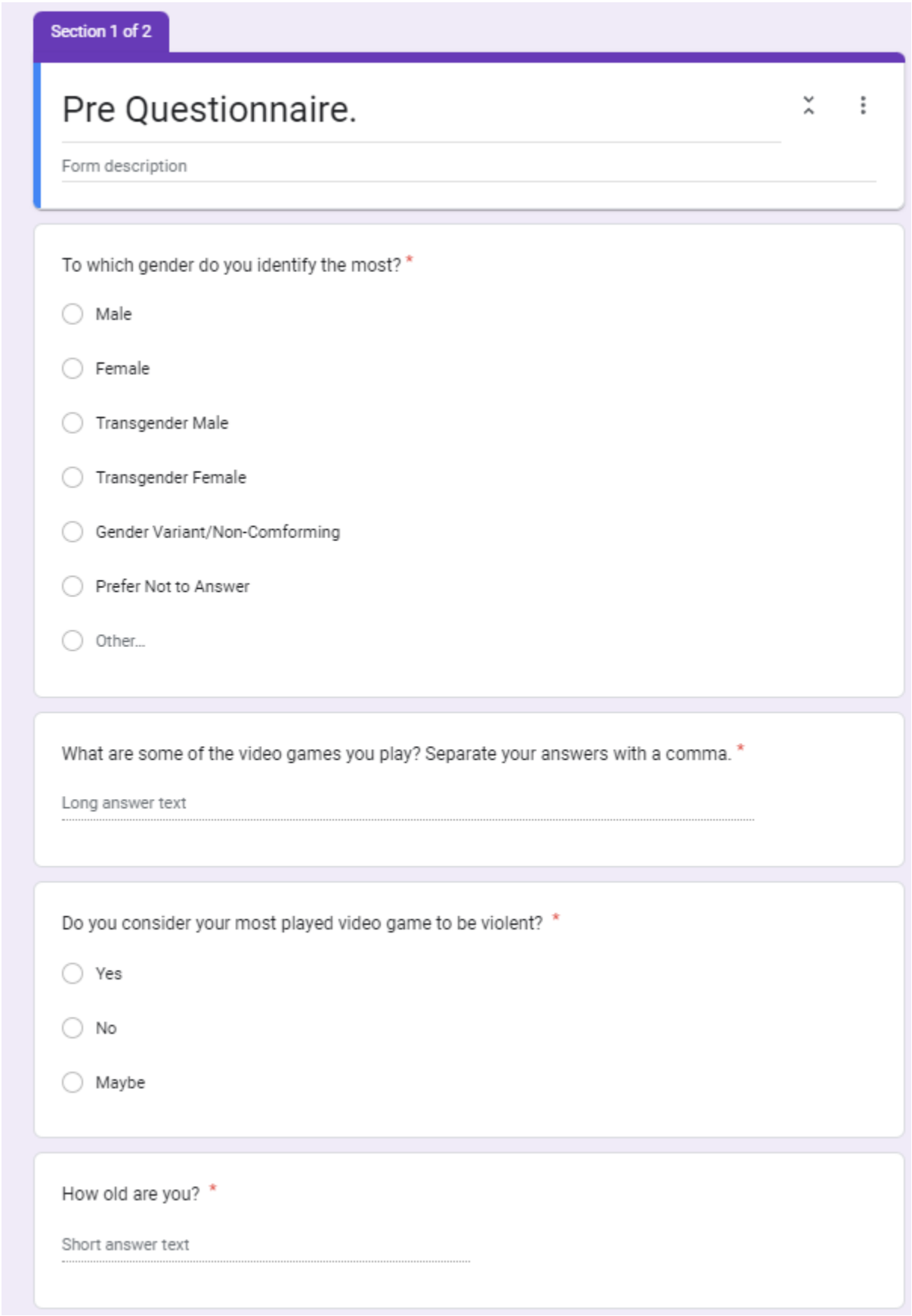
Appendix A



Section 1 of 2

Pre Questionnaire.

Form description

To which gender do you identify the most? *

- Male
- Female
- Transgender Male
- Transgender Female
- Gender Variant/Non-Comforming
- Prefer Not to Answer
- Other...

What are some of the video games you play? Separate your answers with a comma. *

Long answer text

Do you consider your most played video game to be violent? *

- Yes
- No
- Maybe

How old are you? *

Short answer text

Appendix B

Directions: Please read each scenario and indicate how likely you would be to engage in the described behavior on a scale of 1 to 5, where 1 = very unlikely and 5 = very likely.

You see a friend cheat on an exam. Later, they ask you for help on a different exam. How likely would you be to help them cheat on the second exam?

Your company is downsizing and you need to lay off employees. How likely would you be to lay off an employee who is near retirement and has a family to support?

You work for a pharmaceutical company and your boss instructs you to falsify data in order to get FDA approval for a new drug. How likely would you be to go along with your boss's request?

You are in a position of power and can take advantage of someone for your own benefit. How likely would you be to take advantage of them?

You witness a colleague making derogatory comments about a coworker behind their back. How likely would you be to join in on the gossip?

You are selling a product that you know is defective, but you label it as "pre-owned." How likely would you be to use this label to sell the product?

You are a soldier and are ordered to bomb a village. Instead of referring to it as bombing, you refer to it as "neutralizing the enemy." How likely would you be to use this euphemism?

You are a manager and need to lay off several employees. Instead of saying "lay off," you say "rightsizing." How likely would you be to use this euphemism?

You know that a co-worker has stolen something from the office, but you refer to it as "borrowing." How likely would you be to use this euphemism?

You know that a company has polluted a river, but you refer to it as "discharging waste." How likely would you be to use this euphemism?

You drive over the speed limit because "everyone else does it." How likely would you be to use this justification?

You continue to use plastic bags because you argue that "other people do it too." How likely would you be to use this justification?

You lie on your taxes because you believe that "everyone cheats on their taxes." How likely would you be to use this justification?

You justify stealing office supplies because "everyone else does it." How likely would you be to use this justification?

You justify cheating on a test because you believe "everyone else does it." How likely would you be to use this justification?

Video Games and Morality

You vandalize a neighbor's property because you were "just following orders" from a friend. How likely would you be to use this justification?

You lie to your boss because you were "just doing what you were told" by a colleague. How likely would you be to use this justification?

You participate in unethical behavior because you were "just doing what the company required." How likely would you be to use this justification?

You participate in harmful behavior because you were "just going along with the crowd." How likely would you be to use this justification?

You steal something from a store because you were "just trying to fit in" with a group of friends. How likely would you be to use this justification?

Imagine that you are the manager of a company that has recently faced financial losses due to the COVID-19 pandemic. To cut costs, you decide to lay off several employees, including a single mother with two young children. On a scale of 1 to 5, how much would you agree with the following statement: "The consequences of my decision were not that bad because the single mother could find another job easily."

You are at a party and you notice a group of people bullying another person. You decide not to intervene because you don't want to draw attention to yourself. On a scale of 1 to 5, how much would you agree with the following statement: "It wasn't really my responsibility to stop the bullying, and the consequences for the victim weren't that bad."

Video Games and Morality

You are a student who has been caught cheating on an exam. When confronted by your professor, you deny any wrongdoing and blame the situation on the difficulty of the test. On a scale of 1 to 5, how much would you agree with the following statement: "The consequences of cheating aren't that bad because everyone does it, and it's just a minor offense."

You witness a friend shoplifting at a store. Instead of reporting the incident, you decide to keep silent and not get involved. On a scale of 1 to 5, how much would you agree with the following statement: "The consequences of shoplifting aren't that bad because the store makes enough profit anyway, and the friend needed the item more than the store did."

You are a politician who has been caught accepting bribes in exchange for favorable legislation. When confronted by the media, you claim that you were simply helping your constituents and that everyone else in politics does the same thing. On a scale of 1 to 5, how much would you agree with the following statement: "The consequences of accepting bribes aren't that bad because it's just a normal part of politics, and I was doing it for the greater good."

Appendix C

Informed consent form.

The Impact of Violent Video Games on Moral Disengagement
Contact Information: A.ghosh_1@tilburguniversity.edu

Introduction
You are invited to participate in a research study. This study aims to investigate the relationship between exposure to violent video games and moral disengagement. Before deciding to participate, it is important for you to understand the purpose of the study, what your involvement will entail, and the potential risks and benefits associated with participation.

Procedure
If you agree to participate in this study, you will be asked to complete a questionnaire that assesses your level of moral disengagement. The questionnaire will consist of a series of statements related to moral attitudes and beliefs, and you will be asked to indicate your agreement or disagreement with each statement. The estimated time for completing the questionnaire is approximately 10 minutes. Your responses will be kept confidential and will only be used for research purposes.

Benefits
By participating in this study, you will contribute to the existing knowledge on the impact of violent video games on moral disengagement. Although there may not be any direct personal benefits, your involvement will help enhance our understanding of this topic, potentially leading to the development of interventions or strategies to mitigate any negative effects associated with violent video game exposure.

Risks
There are minimal risks associated with participating in this study. The questionnaire may involve some personal reflection on moral attitudes and behaviors, which could evoke mild discomfort or self-reflection. If you feel uncomfortable at any point during the study, you have the right to withdraw your participation without penalty.

Confidentiality
All information collected during this study will be treated as strictly confidential. Your responses will be anonymous, and any personal identifiers will be removed or coded to ensure confidentiality. The data will be securely stored and only accessed by the researcher and authorized personnel for the purpose of data analysis.

Voluntary participation.
Participation in this study is entirely voluntary, and you have the right to withdraw at any time without providing a reason. Your decision to participate or withdraw will not affect any current or future relationship with [Your Institution]. If you choose to withdraw, any data you have provided up to that point will be excluded from the analysis.

By signing below, you acknowledge that you have read and understood the information provided in this consent form, and you freely consent to participate in this research study. *

- [ ] Yes, I agree to participate.
- [ ] No, I do not agree to participate.