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Moral-Based Decision-Making in Gameplay

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Moral-based Decision-Making in Gameplay: An Honors Research Thesis/Capstone Project

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Abstract

The purpose of this research is to examine how one's personal characteristics - in the form of empathy and aggression - are linked to an individual's decision-making during gameplay. Data was collected via online surveys in which current college students completed measures pertaining to social desirability, aggression, empathy, moral judgment, and ethics. Participants had an average degree of social desirability when taking the survey. In addition, participants' aggression and empathy levels were average, and their ethics mostly correlated with the philosophy of relativism. Decisions for moral judgment questions tended to be skewed toward a utilitarian approach and consisted of well-thought out and mostly empathic reasoning. From this study, the results suggest that an individual's empathic tendencies influence moral-based decision-making in gameplay more than aggressive tendencies.

Introduction

As technology continues to grow, video games are becoming more and more present and influential in society. The purpose of this study is to analyze the influence of players' empathy and aggression on their gameplay. With this study I want to answer the question: how does one's tendencies toward aggression and empathy affect one's preferences regarding moral-based decision-making in gameplay? In addition, I plan to analyze whether participants think that their game play can influence their empathy, aggression, moral code, and even their choices in the real world. With this study, I plan to assess the way in which video gamers make decisions in regards to their empathetic and aggressive tendencies and how one's gameplay influences decision-making and ethical-thinking in real life.

As I was researching studies about video games and the influence of empathy, aggression, and morality in gameplay, I realized that there is still very little research available on these topics. As a result, this study is scientifically significant due to this information deficit. By contributing to this research, I am helping the scientific and research community by giving them additional data to analyze. In regards to social significance, this study will hopefully be very beneficial in recognizing that video games can actually influence one's empathy, aggression, and morality. However, influence comes in many different forms. As a result, it is important to make the distinction as to whether video games can affect players negatively, positively, or perhaps have no effect on them at all. For example, previous studies have concluded that video games tend to encourage aggression and aggressive tendencies (Bartholow, Sestir, & Davis, 2005; Funk, Buchman, Jenks, & Bechtoldt, 2003), but recent games have been released that encourage players to make more prosocial decisions (Gentile et al., 2009). With these games, it might be possible that video games could benefit players and society in general. My study will attempt to look into this phenomenon and observe how much influence there is between video games and human nature.

Literature Review

Purpose

When I first thought of this research idea, I wanted to conduct this study to analyze the influence of a player/participant's empathy, aggression, and moral code on their gameplay and how their gameplay affects their empathy, aggression, and moral code in return. After further analysis, it was decided that this research project would only involve investigating empathy and aggression and the effect on moral-based gaming decision-making. While that is the case, a

question pertaining to the reciprocal effect on participants is still included in the final version of this study.

When it comes to video games and aggression, many researchers have observed a very strong correlation. For example, previous studies have shown that violent video game exposure - either actively playing or even watching the video game - increases aggression and aggression-related variables (Greitemeyer and Mügge, 2014). Few studies have been done to research how prosocial video games affect social outcomes and behaviors of players, but those that have been conducted have contributed to identifying video games as possible education tools to improve one's morals and attitude (Khoo, 2012; Ruggiero, 2014). As a result, I conducted a study to see how a player's usual gameplay affects their social behaviors and how they reveal these social behaviors during gameplay.

Synthesis

My initial idea was to study the adolescent population. Once I began to look into this population, I realized that it was not possible given the existing time constraints. In addition, there were also challenges giving consent and their status as minors. While Siyez and Baran (2017) were able to study middle school students' reactive and proactive aggression and empathy levels in Turkey, I did not think that I would be able to do the same in the amount of detail that I wanted to do my study. While their study and my study are essentially made up of questionnaires, my study will focus more so on the qualitative answers to these surveys. As a result, I changed my sample population to college students. I thought college students would be the best population to answer the surveys most appropriately and effectively. Once I determined my sample population, I began to search for more empirical studies. The next article I found was

the study done by Tamborini, Bowman, Prabhu, Hahn, Klebig, Grall, and Novotny (2017). This group also analyzed empathy, and they also included morals in their study. However, this group focused on the college population and how accessible their morals and empathetic tendencies were in choice-based games. I found other studies that parallel this one. For example, in Teng, Nie, Liu, Guo's (2018) study, their focus was how prosocial games encourage empathy and other positive social behaviors. By the end of the study, the conclusion is that games may promote prosocial social behaviors. In addition, Martin Delhove and Tobias Greitemeyer's (2018) study illustrates how one's own social behavior influences which character they pick to play. This emphasizes the fact that our social behaviors influence our gameplay more than we think. The next study also takes a look into this. Karen Schrier (2017) analyzes the influence of video games on ethical thinking and how the industry can begin to change the design of video games to support prosociality and ethical thinking. This study mirrors the recent development of choice-based video games that change based on the player's decisions and how we as players influence gameplay in general (Hilliard et al, 2016). These games support ethical thinking and social behaviors in more ways than one, and they could be "game-changers" for society's current perception of video games.

Gaps and/or Limitations

As I was researching empirical studies for my own study, I began to realize that there are gaps in the literature. One of the limitations that I found in many of the empirical studies on this subject was a small sample population. Having such small sample populations made the results less significant at the conclusion of the studies. For my study, I have tried to the best of my ability to gather as many participants that I possibly can by using campus resources to help

spread the word about my survey. Another limitation was that the sample population tended to be skewed in regards to gender. From study to study, the population was either a majority of males or females, and very few studies had equal distribution. Similar to the first limitation, having a larger sample population will help my research study avoid this limitation. If more people are a part of my study, then there is a better chance that I will have an equal representation of genders. The last limitation that was commonly found amongst the studies was that their tends to be social-desirability bias that plays a role in the study's results. In order to prevent this from happening in my study, I incorporated the social desirability scales to determine how this type of thinking can hinder from gaining accurate results. By identifying other studies' limitations, I have been able to take these into consideration for my own study and have them addressed the best way that I can.

Research Question and Hypothesis

In a self-report simulation, how does one's aggressive and empathetic tendencies influence their preferences regarding moral-based decision-making in gameplay? In order to answer this question, aggression and empathy are classified as predictors with social desirability being considered a potential moderator. Based on this research question and previous studies, I hypothesize that when participants play video games, they mirror their aggressive and empathetic tendencies onto their character in the game itself when given they are given the freedom and liberty in which to do so. When players are able to make decisions about their character and the course of the study, then I believe that players will make their character a version of themselves. In other words, I believe that violent video games encourage participants

to act on aggressive social behaviors, while prosocial video games encourage participants to act on their prosocial social behaviors.

Methods

Participants

For this study, participants were college students at the University of Tennessee-Knoxville. A total of fifty-six responses were collected via a Qualtrics online survey. However, only twenty-nine reports were fully completed in the time allotted, which was two weeks. In order to have the most accurate results and conclusions from this data, only the twenty-nine completed responses were analyzed. In this sample, 62% of participants were female (n=18) and 38% were male (n=11). The average age of the participants was 20.6 years (standard deviation = 2.54) .

Procedures

For this study, I engaged in available subjects sampling, otherwise known as convenience or haphazard sampling. While this form of sampling has a major limitation in regards to having no control over the representativeness of the sample, this sample was the most effective for my study. Because I wanted my sample population to be undergraduate college students with previous video game experience, it made sense to sample those who are currently enrolled at the University of Tennessee - Knoxville. In addition, I believed college students would most likely have a lot of previous experience with video games because they have grown up in a society that had a technological boom, especially with the variety and availability of gaming consoles. By taking a convenience sample, I should have a better and more accurate chance of determining whether or not my hypothesis is correct.

I recruited participants through emails. I emailed potential participants in the Chancellor's Honors Program (CHP) and the Child and Family Studies (CFS) department. Both of these programs send frequent emails either weekly or bi-weekly to their members, and I asked the head of these programs if they could include a little blurb about my research study and the link to my online survey in one of their emails. Both departments accepted my request. In addition, I also emailed two on-campus organizations if they would notify their members of my research study. The two organizations are GAYmerz and Esports Club. I was interested in including members of these organizations as part of my participants because both organizations have experiences with video games and are dedicated to playing and discussing video games. Just like with the CHP and CFS programs, I contacted the head of these organizations and asked if they could email their members about my study and include a little blurb about my research study and the link to my online survey in that email. I only received a response back from the Esports Club, and the club accepted my request in the process.

For this study, I used the survey research method. I emailed participants links to my surveys and had them complete the surveys in a timely manner. To get willing participants, I ensured that the first thing that participants saw was the informed consent form, where participants were tasked with either accepting or declining their participation. If the participants did not want to consent, they were able to exit the survey. For participants who did consent, their responses were recorded via Qualtrics. In the survey, participants answered a variety of questions that are on a scale, have multiple answer choices, and have a space to write their own answer.

Measures

Demographic

I asked common demographic questions for my study, along with questions regarding

previous experiences with video games. In order to accurately describe the sample, I included

questions that relate to their gender, age, race, hometown, and their religion. I designed and

measured the questions as so: gender (male, female, transgender, other, and prefer to not

answer), age (18 to 30+ and prefer to not answer), race (mark the following options as they apply

to the participant - Black or African American, White or Caucasian, Hispanic or Latino,

American Indian, Alaska Native, Asian American, Native Hawaiian, Other Pacific Islander,

other, and prefer to not answer), hometown (type answer in the space below or prefer to not

answer), and religion/lack thereof (I do not practice a religion - Secular/Atheist/Agnostic,

Christianity, Islam, Judaism, Hinduism, Buddhism, Baha'i, Other, and prefer to not answer). The

previous experience question asked the participant to note how many times they have watched or

played a violent and nonviolent video game within the last year. The responses for this question

range from one time (1) to more than ten times (10+).

Other Measures

For my study, I used both quantitative and qualitative measures. For the quantitative

measures, I first asked participants questions that are demographic-based. Along with the

questions that are actually demographic measures, I asked the participants to record the number

of times they have played or watched someone play a violent and nonviolent/prosocial video

game on a scale. The participants replied on a 10-point scale. I then asked the question about

how experienced the participant feels about video games on a Likert scale from not experienced

to very experienced. With these two questions, I hoped to find a correlation of more

playing/watching with that of feeling more experienced. Using the quantitative method allowed

me to have a somewhat clear account of how knowledgeable the participants are about my

study's subject. Throughout the rest of the survey, I asked participants questions regarding their

perceptions of their aggressive and empathic tendencies on a Likert scale of very unlike

me/strongly disagree to very like me/strongly agree and their personal opinions on a true and

false scale. These scales are validated by previous research studies. I will go into additional

detail on each of these scales in the "Results" section of my paper.

The rest of the study consisted of open-ended questions. In order to see how participants

would respond and make choices similar to decisions made during gameplay, I asked

short-answer questions in the form of a moral-based decision-making simulation. The questions

were structured as so, "Please answer the following scenarios as if you were playing a character

in a video game, and you were given these choices to complete the next steps of your quest. Pick

the statement that you agree with the most, then please briefly explain your reasoning for picking

that option in two (2) to three (3) sentences." I coded participants' responses based on their

significance and benefit to the study. With these questions, I aimed to find out how participants'

aggressive and empathic tendencies reflect their gameplay and vice versa.

Analyses

Because I am doing a mixed-methods study, I will also have mixed-method analyses. For

the quantitative part of my study, I used the answers from their questions and scales and applied

them into descriptive tables and Cronbach's alpha. For the qualitative part of my study, I created

a transcript of my participants' short-answer responses. I coded their responses based on their

significance and/or benefit in portraying the different sides of my study and their views on video games, which includes both negative and positive responses. I grouped responses based on their similarity and coded based on these groups. In addition, I was the only coder of the transcript, but I had my advisor available to help and guide me throughout the research process, especially the analysis portion.

Results

Demographics

As mentioned previously, two thirds of the participants were female, while one third was male. In addition, the average age of participants was 20.6 years of age. Almost 81% of participants identified themselves as White or Caucasian (n=25), 6.5% identified as Black or African American (n=2), and 3.2% of participants identified in both categories of Hispanic or Latino and Asian American (n=2). When looking at the results for where participants were from or where they considered home to be, almost 90% (n=26) of the sample identified that they were from the South. One participant specifically stated that they were from the North, while two participants preferred not to answer. In regards to religion, 65.5% of participants identified themselves with Christianity (n=19) and one participant identified with Judaism, while 31% did not identify with any religion (n=9).

Experience

When looking at participants' experience with violent and nonviolent video games in the past year, a majority have watched and played both styles of games more than ten times. For example, 72% of participants have watched someone play a nonviolent game (n=21), and 69% have watched someone play a violent game (n=20) more than ten times. In addition, 76% of

participants have played a nonviolent game (n=22), and 59% have played a violent video game

(n=17) more than ten times. For those participants that did not play video games that much, they

responded that they played these types of games usually three times or less within the past year

(Table 1).

 For this last criteria, almost 34.5% of participants played a violent video game four or

less times in the past year (n=10). Participants were also asked about how experienced they

thought they were with video games (Table 2). For this criteria, there was no majority. However,

about 35% of participants classified themselves as not that experienced (n=10), 21% classified as

experienced (n=6), and about 45% of participants classified as very experienced (n=13).

A reliability analysis was carried out on the experience scales comprising of a total of

five items. Cronbach's alpha showed this scale to reach good reliability, $\alpha = 0.82$. However,

deleting question 3 would increase the alpha to $\alpha = 0.84$. If this part of the questionnaire will be

used in future studies, it would be best to not include this item.

Social Desirability

This brief section of the survey consisted of thirteen questions from D. P. Crowne and D.

Marlowe's Social Desirability Scale (Crowne and Marlowe, 1960; Reynolds, 1982; Leite and

Beretvas, 2005). The thirteen questions ask participants whether the statements are true or false

in relation to themselves. This scale is used to test whether there is a possible bias of participants

answering questions to be viewed more favorably than others (Tables 3 and 4).

To score social desirability in participants, points are added according to participants'

responses. In the original scale, scores could be between 0 to 33 with set distinctions between

low (0-8 points), average (9-19 points), and high levels (20-33 points) of social desirability.

Appropriate changes were made due to the use of the shortened scale form. For example, the total number of points for this scale could be between 0 and 13, and the different levels are proportional to the original levels. These scores represent how likely a participant is to give answers that are good instead of truthful. The mean score was 6 points with a standard deviation of 2.56. When participants were asked to answer the shortened form of the Social Desirability scale, 62% of participants (n=18) had an average rating of social desirability with a total of 4 to 7 points. In comparison, 14% of participants (n=4) scored low with a total of 0 to 3 points and 24% of participants (n=7) scored very high with a total of 8 to 13 points.

Cronbach's alpha showed the questionnaire to reach good reliability, $\alpha = 0.70$. While that is the case, question 3 was an exception. Excluding this question would increase the alpha to $\alpha = 0.73$. This item could possibly be removed in future studies.

Aggression

In order to measure participants' aggressive tendencies, Bryant and Smith's shortened form of A. H. Buss and M. Perry's Aggression Questionnaire was used (Buss and Perry, 1992; Harris, 1997; Byrant and Smith, 2001). This shortened form of the questionnaire consists of twelve questions that ask participants to rate statements on a five-point scale as to how characteristic they are to themselves and their anger management. This questionnaire helps to indicate how hostile, violent, and/or angry a person can tend to possibly be.

When calculating the results for participants' aggressive tendencies, the total score of their ratings were added together (Table 5). This score, on a scale of 12 to 60, illustrates participants' tendencies to be aggressive. For example, a higher rating correlates with a participant being more likely to be aggressive and angry and engage in hostile or violent

tendencies; moreover, a lower score would correlate with a participant having less aggressive

tendencies. 79% of participants (n=23) scored below the median for total aggression, while about

21% of participants (n=6) scored above the median for total aggression. In the end, the mean for

this scale was 28.38, and the standard deviation was 8.18. Cronbach's alpha showed the

questionnaire to reach good reliability, $\alpha = 0.77$.

Empathy

On the other hand, participants' empathetic tendencies were measured via D. Jolliffe and

D. P. Farrington's Basic Empathy Scale (Jolliffe and Farrington, 2006; Albiero, Matricardi,

Speltri, and Toso, 2009; Carré, Stefaniak, D'Ambrosio, Bensalah, and Besche-Richard, 2013).

This scale features twenty questions that ask participants to rate on a five-point scale how

statements are characteristic to themselves and their forms of empathy. In addition, this scale

aids this research by revealing how empathetic, compassionate, and/or sociable an individual can

possibly tend to be (Table 6).

Similar to the Aggression Questionnaire, the overall scoring for the Basic Empathy Scale

is a total score of their ratings. The scores could be between 20 and 100. Depending on their

scores, participants could be more likely to exhibit empathetic tendencies. For instance, a higher

score correlates with participants exhibiting more or frequent empathic tendencies, while a lower

score correlates with participants engaging in less showings of empathy. 62% of participants

(n=18) scored above the median for total empathy; therefore, about 38% of participants (n=11)

scored below the median for total empathy. The mean was 60.48 with a standard deviation of

4.55 for this scale. When calculating Cronbach's alpha for total empathy, the analysis showed

the questionnaire to reach acceptable reliability, $\alpha = 0.85$.

Moral-based Decision-making Simulation

For this portion of the survey, I asked ten questions that simulate decisions people might possibly have to make when they play a choice-based video game. Five questions stem from different variations of Phillipa Foot's Trolley Problem (Foot, 1967; Thomson, 1976; Thomson, 1984) and the other five questions stem from J. R. Rest's Defining Issues Test (Martin, Shafto, and Vandeinse, 1977; Rest, 1979; Rest, Narvaez, Thoma, and Babeau, 1999). Each question had two options for the participants to choose from (Table 7 and Table 8). Participants were also asked to provide their reasoning for their decision in a couple of sentences. Cronbach's alpha showed the Trolley Problem part of the questionnaire to reach good reliability, $\alpha = 0.70$.

Trolley Problem

When participants were asked whether they would choose to do nothing and let five people be killed or pull the lever and let only one person be killed, 90% of participants (n=26) picked the latter. The majority of participants took a utilitarian approach to this question and even stated so in their reasoning. For example, participants' statement revealed a pattern that "five lives is more than one and greater than one, saving their lives is the best thing to do for the greater good, more lives have more value, etc." In their minds, it is best to approach from utilitarian viewpoint. For the three other participants, they stated that "I cannot play an active role in killing some even in a video game" and "murder is bad."

When asked the same question with the stipulation of pushing a large man over to save the same people, 59% of participants (n=17) said they would prefer to do nothing and let the five people be killed. The results for this scenario was much more divided than the previous question. For the participants who decided that they would prefer to do nothing, they said they "felt worse

about killing someone so directly and putting them in danger" and "physically pushing someone

is different than just pulling a lever." On the other side of the argument, participants still had a

utilitarian approach where they claimed that "five lives are still better than one."

The next question asked what participants would do if the large man was instead a villain.

In this case, 93% of participants (n=27) said they would push the villain. The majority of

participants agreed that "the villain should be pushed because he is the bad guy" and "should be

punished for harming innocent people." In this situation, "the villain deserves and needs to be

pushed to save the good guys." However, two participants still did not agree with their

counterparts. For example, one person claimed, "A villain is still a person too, so I wouldn't kill

him" while another held on to their view that murder is bad in any and every context.

For the next question, participants were asked if they would do nothing and let five

people or collide two trolleys that would kill a sleeping man. 55% of participants (n=16) decided

that they would rather let the trolleys collide. This was another divisive question among the

participants. Most of the participants claimed that the main reasoning behind their collision

decision was that "killing one to save five is the most reasonable answer" and "they wouldn't

necessarily know about the sleeping man." The question was also impacted by the utilitarian

perspective. While that is the case, the minority of participants decided to do nothing because

"there would be too much damage and risk with the trolley's collision and the man dying is not

worth it" and "man had no chance of being hit before and does not want to put him in any danger

now."

Finally, participants were asked an alternative form of the Trolley Problem, where they

are a doctor and must make the decision of killing a man to give five dying people much needed

transplants or doing nothing. This time 72% (n=21) of participants decided that they would do

nothing in this scenario. In this final scenario, more participants chose to do nothing because

they thought that "it isn't right to kill an innocent man who did nothing" and "murder isn't

justifiable in this case." Other reasoning included individuals saying, "It would be inappropriate

to do this, it would cost a doctor to lose their license, and it is not the doctor's place to decide

who lives and who dies." Those who would kill the man, however, claimed that "the needs of the

many outweigh the needs of the few" and "it is incumbent to save as many lives as possible and

it is one's responsibility to do so." Others compared this scenario to embodying a Robin Hood

spirit, where they were giving to people in need. With this in mind, it made it easier for

participants to comprehend and accept their final decision.

Defining Issues Test

The first question asked participants to decide whether or not they would steal food to

keep themselves and their families from starving. 93% (n=27) of participants said they would

take the food. For this situation, many participants discussed how they "must steal in order to

save themselves and their family" and one has to "do what you need to save family" even in the

face of consequences. Other participants claimed that this was another Robin Hood-type of

situation, where they would steal from the rich and give to the poor. Two participants, however,

saw differently. They claimed that is wrong and illegal to steal and they could be severely

punished just for providing for their family. As a result, they did not want to steal.

The next question asked participants whether or not they would report a political

candidate for a crime they committed in the past. In this case, 72% of participants (n=21) stated

that they would not report the story. According to this percentage of participants, they deemed it

was "irrelevant" to report the story if the man has changed and gotten better since this incident.

In addition, multiple participants asserted that "the past does not define who the man is now" and

"his past shouldn't be held against him." On the other hand, other participants stated that it

would be better to release this information to the public. Some claimed it could be a "political

strength" for the man to come clean and talk about how he has changed, where he would earn

more respect from the public. However, one participant in particular said, "While people can

change, this information should not be kept a secret from the public."

For the next question, participants were asked whether or not they would decide to have

an open meeting after having an almost-violent encounter with other members. This time 70% of

participants (n=20) decided that they would continue to have the next meeting. These

participants consistently mentioned the need for communication in this community because

"communication is key" and "opinions must be heard." While that was the case, there was still

some concern for the community. Participants suggested that the meeting should continue but

"regulations should be put in place as a prevention measure" and "police and/or security should

be available." For those who wanted to call off the meeting, they said it was "too dangerous" and

the community "needs to have a safe place to have effective conversation." As a result,

participants suggested that the community take time to "cool off" and prepare for a non-violent

meeting.

When participants were asked whether or not they would give an elderly cancer patient

an increased dosage of medicine with the chance of her dying, 59% (n=17) of participants said

that they would give the woman more medicine. In this case, participants decided that they

would give the woman medicine due to the fact that "she is not only dying, but she is being

sound and rational when it comes to her request." Also, this would allow the woman to "not

suffer during the last moments of her life" and "she would be in the least amount of pain." While

that is the case, some of the other participants claimed that it would be "illegal to help in an

assisted suicide" and "it could risk the doctor's license." In addition, other participants said that

they would be unwilling to end a life in any sense.

Finally, participants were asked whether they would let students continue demonstrating,

even though the students are disrupting traffic, businesses, and the college campus. For this

scenario, 55% of participants (n=16) decided that they would not let the students continue

demonstrating in these ways. The concern for the majority of these participants included that the

protests were illegal and "illegal action should not be met with more illegal action" and the

demonstrations "can't ruin the roads and make everything unsafe." Participants said that the

students should find alternative forms to protest, protest legally and safely, and "peacefully cause

chaos." While that is the case, there was still opposition from other participants. For example,

participants suggested that "protesting is a right" and "since the government does not listen to

nondisruptive forms of protest, more radical means must be employed." According to these

participants, "when a government is unjust, it is a citizen's duty to protest." As a result, the

students argued that they should keep demonstrating in this way to enact change.

Ethics

In this section of the survey, participants were asked twenty questions from D. R.

Forsyth's Ethics Position Questionnaire (Forsyth, 1980; Forsyth, 1981; Forsyth and Berger,

1982). Specifically, the questionnaire asks participants to rate statements as to how characteristic

they are to themselves on a five-point scale. This questionnaire is used to measure differences in

moral thought amongst participants.

This questionnaire is divided up into two groups. For instance, the first ten questions

relate to idealism, while the last ten questions are directed toward relativism (Table 8). Scores

are calculated by finding the sum for each group. Since this scale features a 5-point response

scale, the scores could range from 10 to 50 points for each half. The mean was calculated by

finding the average for each category. In addition, the median was calculated by taking the

highest score possible (50 points) and multiplying that by .734 for idealism and .606 for

relativism. In the end, the mean for idealism was 33.07, the median was 36.7, and the standard

deviation was 7.52. The mean for relativism was 30.90, the median was 30.3, and the standard

deviation was 7.68 for this study. About 69% of participants (n= 20) scored below the median on

idealism; however, 41% of participants (n=12) scored below the median on relativism.

Cronbach's alpha showed the Ethics Position questionnaire as a whole to reach

acceptable reliability, $\alpha = 0.99$. When divided into subscales, the Ethics Positions questionnaire

retained an acceptable reliability with the idealism subscale having, $\alpha = 0.99$, and the relativism

scale having, $\alpha = 0.98$.

Personal Opinion Question

For this opinion question, I wanted to ask participants what they thought about

decision-making in real life compared to that of decision-making when playing a video game.

When asked, "Do you believe your decisions in real-life match your decision-making when you

play video games?", this is how participants responded: 24.1% said no (n=7), 13.8% said yes

(n=4), and 62% said sometimes (n=18). I also asked participants to explain their reasoning.

When comprising a transcript for these results, I found the following correlations among the various participants.

When participants did not agree with the statement, they would use violence as their counter-argument. For example, one participant said, "When playing FPS (a first person shooting game), I am not going to go on a rampage in real life." Others said, "Violent video games don't show up in my life" and "They don't match because it's fictional." When explaining their answer, one individual wrote, "There is a clear disconnect between whatever is happening in video games and real life. Video games are a way to be wacky and destress." Violent video games tend to not be as present when gamers make decisions in real-life. As a result, it seems they don't contribute to decision-making and do not have much of an effect on players..

For the four people who answered "yes" to the personal opinion question, they tended to relate video games to themselves and what they currently do when playing them. For example, one participant asserted, "The good hero characters of video games have inspired me to look for and help more people. I don't slay villiams, but I try to help the innocent." Other participants commented on how they make smart and informed decisions and try to be merciful and good in both situations. It seems that prosocial games or games that focus on heroes tend to encourage players to be good and inspire players to make similar merciful and thoughtful decisions in real life.

A majority of the participants, however, thought that decision-making in real life and during video games can sometimes be similar. Many participants commented on how some decisions would match, while other times they would assume the identity of character or role play to see the different outcomes. For example, one individual said, "I usually try to play

according to my personal morals. Rarely, I sometimes play as villainous or heroic as I can

regardless of what is the most reasonable decision." In addition, one participant commented,

"With free will [in games], "bad" is boring. You get rewarded for being good in games. People

do "bad' in games because it's fun and chaotic. Most wouldn't do it in real life. They understand

it's a game." Other participants related their decision to the fact that video games are just that - a

game. To others, games are "hypothetical." Another participant made the claim that "video

games are a form of escapism and they enable you to live a different life. Decisions don't always

match up." Other individuals claimed that they immersed themselves into the game and made

smaller choices similar to what they would do in real life. Sometimes video games are similar to

real life, but at the same time, participants are able to as one individual put it, "clearly delineate

what's video game and what's real."

Discussion

Demographics

When looking at the demographics of this study's population, it is evident that there was

not an equal representation of female and male participants. During the recruitment process, I

tried to distribute the survey to different organizations. However, I also distributed my survey to

the CFS department, which is historically a more female department. This may be part of the

reason why there were more female participants than males. In addition, almost all of the

participants were between the ages of 18 to 23. This was mostly due to the fact that most of the

participants are current undergraduate students. Participants were also asked about their race.

Most participants responded that they were White/Caucasian. The university has a majority of

Caucasian students, and this could explain the results for this question. I also asked participants

where they were from to see if location or geography has any influence moral-based

decision-making. In the end, all but two participants responded that they were from a southern

state. The university is located in the southern part of the United States, and this could be part of

the reason why almost all of the participants said they were from the South. In the end, there was

no statistical significance with age, race, or geography.

Experience

Overall, female participants tended to have less experience than males with video games.

In addition, all male participants have played a violent video game more than ten times, while

most female participants have played a violent video game an average of five times. For the

other categories of watching and playing violent and nonviolent video games, male participants

had an average between nine and ten times, while female participants had an average around

seven to eight times. With this in mind, male participants seemed to have more experience with

video games. This could be due in part to multiple video game industries having a male

dominated target audience. Video games tend to be targeted to males; consequently, they tend to

play more video games and have more experience than females. Furthermore, having prior

experience with video games, especially choice-based or decision-based video games, could

have influenced the participants' decisions in this study. When asked the moral-based

decision-making simulation questions, male participants made references to prior video games

they have played that have similar situations and took notice of how these choices would

influence the game mechanics. The female participants, on the other hand, answered the

questions as if they were to make the choice in real life and not a video game. Prior experience

with video games seems to influence how participants made moral-based decisions during the simulation.

Social Desirability

According to the original test for social desirability, a person with an average social desirability seems to show an average amount of concern for following and conforming to societal conventions and social rules. Participants with low scores seem to respond in a socially undesirable way; however, they may be more likely than others to be truthful in their answers. On the other hand, participants with high social desirability seem to illustrate high conformity to social conventions and are very concerned with social approval. This trend also applies to the participants in this study. While most participants had an average level of social desirability, about 38% of participants (n=11) had social desirability levels lower or higher than average. These participants could either be blatantly honest regarding their responses to social conventions, or they could be putting up a front to make themselves look more approvable. With this in mind, it calls participants' responses to the rest of the survey to question. In the end, the participants did answer the survey questions as true to their characteristics as possible. When comparing their responses to other survey questions, the participants exhibited their social conventions preferences in a similar way. For instance, participants were honest when giving their reasoning for their decisions, even if their answer is not normally met with social approval. Participants' responses can be trusted for this study.

Aggression

Participants were asked to rate statements about physical and verbal aggression, anger, and hostility as to how characteristic they are to themselves. With almost 80% (n=23) of

participants scoring below the median for total aggression, the results suggested that participants

in this study are less aggressive than previous studies might suggest. While past studies have

claimed that video games encourage violence and acting on aggressive tendencies, these results

have illustrated that participants tend to exhibit and/or act less on their aggression, anger, and

hostility. This was also illustrated throughout the study. Even though the participants chose to

make aggressive choices in the moral-based decision-making simulation, they had a well-thought

out and justifiable reason that focused more so on the benefits of the decision rather than the

aggressive connotation of the decision. For instance, participants decided to push the villain onto

the tracks, and they also decided to give Mrs. Bennett a dosage increase on her medicine. While

these choices involve some type of harm, participants expressed the need to save the five

innocent people on the tracks and to help Mrs. Bennett not suffer during her final hours. In these

scenarios, empathy overcame aggression. Though the participants have average levels of

aggression, they did not rely on them during the simulation. According to the results, aggression

may have less of a role in the video game culture than what the community thought.

Empathy

When participants were asked to rate statements about affective and cognitive empathy,

they had to rate according to how characteristic the statements were to themselves. In the end,

only 62% of participants (n=18) scored above the median for total empathy, while 38% of

participants (n=11) scored below the median for total empathy. Compared to the results from the

Aggression Questionnaire, the participants seem to not be more empathetic than average.

Instead, the participants seem to just be less aggressive than average. With this information, it

contradicts what previous studies have found regarding video games. While prior studies have

claimed that video games inspire players to act on their aggression, anger, and hostility, it seems

that is not the case for this study. Instead of participants being overly empathetic and extremely

less aggressive in their responses to the moral-based decisions, the participants seemed to show

average empathy and less aggression. With this in mind, I believe that the participants relied

more on their empathic tendencies than their aggression tendencies when making moral-based

decisions during mock gameplay. The participants mirrored their empathic tendencies

throughout the survey, especially when they provided reasoning for their decisions. The players

seemed to make the character a version of themselves, and this choice-based simulation allowed

participants to answer in a way that is characteristically similar to themselves. The players

embodied their tendencies and made decisions according to their tendencies. As a result, the

participants seemed to showcase empathy and rely less on the different forms of aggression.

Moral-based Decision-making Simulation

Trolley Problem

When participants were asked each question as a part of the Trolley Problem, a trend

appeared. For instance, most participants would pick the choice that saved the most people. They

decided that saving five people was better than only saving one person. Some participants stated

that five lives were worth more than one, and other participants recognized that their beliefs stem

from utilitarianism. While that was the case, two problems seemed to not follow this trend.

Participants were less apt to make the decision to push a large man onto the tracks and to kill an

innocent man for organs. These participants explained that these decisions were more difficult to

make due to the fact that they were playing a more active role in harming a person. Even though

these set of questions were simulating choices one might make while playing a video game,

some participants took these questions to heart and applied them to real life. For example, a few participants stated that while they might pick one option, they wouldn't do this in real life due to their own morals. From these questions, it seems that while the responses may be aggressive, the participants relied more on their empathic tendencies than their aggressive nature; moreover, they focused more so on the benefits for the majority, rather their than own sake. Once the questions became ethically ambiguous, then participants had to decide between appeasing the majority or staying true to their own morals. For the most part, however, participants maintained their empathy throughout these series of questions.

Defining Issues Test

Similar to the series of Trolley Problem questions, a trend seemed to appear for participants' responses. Again, most participants took on a utilitarian perspective and picked choices that were beneficial for the majority of people. While these choices were less dramatic than the Trolley Problem questions, the Defining Issues Test was still able to gauge participants' empathic and aggressive tendencies. For example in the first two questions about stealing food and reporting a political candidate's old crime, participants chose to steal food for their families in order to survive and not report the story because the candidate has changed. With these choices, participants showed that they rely more on their empathic tendencies than their aggressive tendencies. The following three questions were more ethically ambiguous for participants. In the end, however, participants fell back on their empathic tendencies again. For instance, participants decided that the people need to voice their opinions, they need to not suffer near the end of their lives, and they need to demonstrate in a civil manner that is safe and nondisruptive. With these choices, the benefits fall upon the majority. The participants continued

to act more on their empathic tendencies than on their aggressive nature. As it was illustrated

throughout this survey, participants seem to prefer to make moral and ethical decisions as they

rely more so on their empathic tendencies rather than their aggressive tendencies.

Ethics

For this part of the survey, participants were asked questions to determine their ethics

position and moral philosophy in terms of idealism and relativism. In this case, those who fell

under the idealism category tended to make decisions that solely have the best outlooks, while

participants who fell under the relativism category tended to be more perceptive and logical

about the given situation and made a decision accordingly. In addition, the idealism category

gauged how much participants are concerned for others. On the other hand, the relativism

category illustrated how participants view the different positions on moral philosophy.

Participants in this study demonstrated positions and philosophies that align the most with

relativism. While 31% of participants (n=9) scored above the median on idealism, 59% of

participants (n=17) scored above the median on relativism. These scores and percentages

resemble the choices participants made throughout this study. While participants stated that they

would never make some of these decisions in real life, they made decisions the best they could

that also went along with their personal moral and ethical code. In other words, participants tried

to make decisions that were the best for the majority, but the participants mainly made decisions

that were that made the most logical sense in terms of the situation and their personal morals.

The participants continued to exhibit their empathy through their moral-based decision-making

and reasoning even though the choice simulations were less than ideal.

Personal Opinion Question

For this question, I wanted to see how participants would compare decision-making in reality with that of decision-making as a part of a video game. A majority of the participants said that their video game decision-making sometimes resembles that of their decision-making in real life. These participants stated that they would make similar good decisions; however, they would not make bad decisions or be bad in real life. For example, participants claimed that violent video games especially do not match reality or the choices one would make. With these statements, it became clear that violent video games do not have as much of an effect on players that prior studies have claimed to have. According to this study, participants were less likely to rely and act on their aggressive tendencies. Instead, participants focused more so on their empathic tendencies immersing themselves into the gameplay simulation and made decisions according to what they would do in real life. While video games are advertised to be fun and be a way to escape reality, video games seemed to have a closer connection to reality that participants might not realize. From what was found in this study, participants made moral-based decisions that align with their personal moral and ethical code; moreover, participants were not overly empathic with their decisions, but they were less aggressive than average. In the end, participants seemed to prefer to make empathic decisions during gameplay. It is up for the participants to decide whether or not they will do the same in real life.

Limitations

Although my advisor and I tried our best to limit any and all limitations that could possibly be in our research study, there were still some limitations that were present. One of the most apparent limitations was our use of convenience sampling. Because the sample population

consisted of people most readily available to us, the sample does not represent the entire

population or specifically, the entire population of the University of Tennessee - Knoxville. As a

result, generalizations cannot be made from this research study. In order to prevent this limitation

from recurring, a random sample of students should be collected to participate in the survey

instead. This would provide the most representative population. Second, the sample size in this

study was small. If any one were to conduct this study again, a larger sample would be beneficial

to have in order to better further analyze statistical significance of the different measures. Third,

the sample consisted of more females than males. While we tried to make the population less

skewed in regards to gender, this limitation still occurred. The reason behind this could be that

there are historically more females than males in the Child and Family Studies department, and

that is why more females completed the survey. For future reference, one could contact other

departments that are more equally distributed to participate in order to limit this issue the next

time this research is done.

There were also some limitations when it came to our Qualtrics survey. First, when

looking back at participants' surveys, I noticed that there were timing issues. For example,

participants would start the survey but would not complete it. However, the survey timer would

keep going. I think for the next reiteration of this study, a time limit should be placed on the

survey to prevent this from recurring. For instance, after a certain amount of time is up, the

survey would be labeled as complete and sent to the data records on Qualtrics. Once this is done,

then it should aid to eliminate timing issues. Second, some of the questions in the survey seemed

to be a little confusing to some of the participants. For example, the last personal question

seemed to cause the most confusion. It is possible that I wasn't very clear in what I was trying to

ask, and that contributed to some of the answers that the participants provided. As a result, I

think the question should be reworded and/or include some clarification so that participants can

have a better understanding of what I am actually asking. Third, many of the participants were

not included in the final sample due to their survey being incomplete as a result of them not

filling in the "write-in" spaces. When creating the survey, I did not make any of the questions

required to answer. Consequently, many participants did not write anything because they did not

have to answer the question, so they simply skipped the question.With this in mind for future

studies, I suggest making all questions required to answer, so that the results will be complete.

The last limitation for this research study is that the survey itself is a self-report simulation. Due

to participants being able to self-report their answers and decisions, there is a high probability

that they will be biased in their answers. Even though the survey tested Social Desirability near

the beginning, participants could still be biased in their answers, especially ones that can be

written by the participant. This is important to note for future studies, and the Social Desirability

Scale should continue to be included in future iterations of this study.

By knowing and identifying these limitations now, it is possible that these limitations can

be reduced or eliminated in the future studies. Changes can be made accordingly. Hopefully with

these suggestions and changes, the study will provide more accurate and generalizable results

that can be used to further study the effects of empathy and aggression during gameplay

decision-making.

Implications

The findings demonstrate that participants' empathetic tendencies seem to play a bigger

role than their aggressive tendencies when they make moral-based decisions during gameplay.

Currently in the world of gaming, more and more games are coming out that allow players to make their own choices. Players can be as violent, prosocial, or neutral that they want to be. With the results from this study, it seems that players tend to play or make decisions that align more with what decisions they themselves would make in the given situation - at least for their first playthrough. In this case, players made choices that were more empathic. As the choice-based trend continues for games, it would be beneficial to see if the trend also continues for their patrons' decisions during gameplay. For example, in the future, are players still more likely to make empathic decisions during gameplay or have things changed? If more studies are done on this particular topic of research, then it would be interesting to see if and how players' moral-based decision-making have changed and have impacted the gaming industry.

While the above results were collected from this study, more research should still be done to determine whether or not this trend is consistent or repeatable, and whether it can be generalizable to the public. In order to provide the most reliable and valid results, future researchers should enact the changes and suggestions provided in the limitations and then conduct the study as it was presented. By doing these steps and replicating the study, the results should provide future researchers additional insights into how empathetic and aggressive tendencies influence decision-making during gameplay and how these results can be applied to gamers of all ages and possibly the video game industry.

Conclusion

In the end, my hypothesis was correct. During the moral-based decision-making simulation, participants mirrored their aggressive and empathic tendencies and made choices similar to what they would choose to do in real life. In particular, participants in this study relied

more on their empathic tendencies than their aggressive tendencies when making moral-based decisions during gameplay simulations. Participants, for instance, took on a utilitarian perspective and decided what would be best for the majority in a given situation. While participants chose more empathetic choices, there were still some instances of aggression. As a result, future studies should be conducted to determine whether this trend can and will occur again and if it can be generalizable to the public. Although the common perception about video games is that they encourage players to embody their aggression, this study seemed to point to the contrary. In this case, empathy and prosociality are still in play for many gamers. Choice-based video games are becoming more and more popular in the gaming industry. As these games continue to sweep through gaming communities across the globe, it gives players and participants another chance to make more moral-based decisions. What will they choose to do this time? That is the question. The trend may have revealed that empathy and prosociality are the most common decisions for these participants, however, a single choice can change everything. It is time to play another game or simulation, and it is up to the players to decide once again.

Descriptive Tables

Table 1 (Experience)
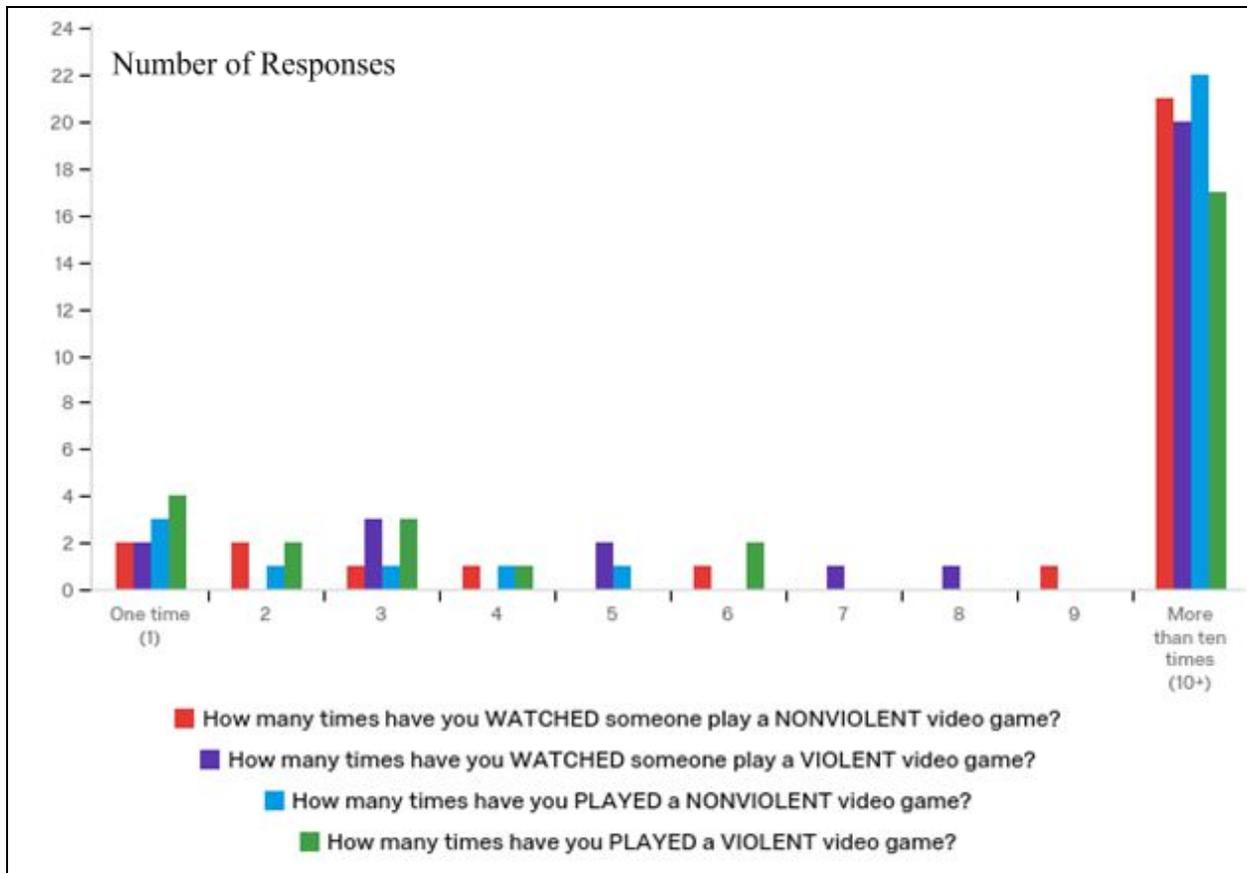
Table 2 (Experience)
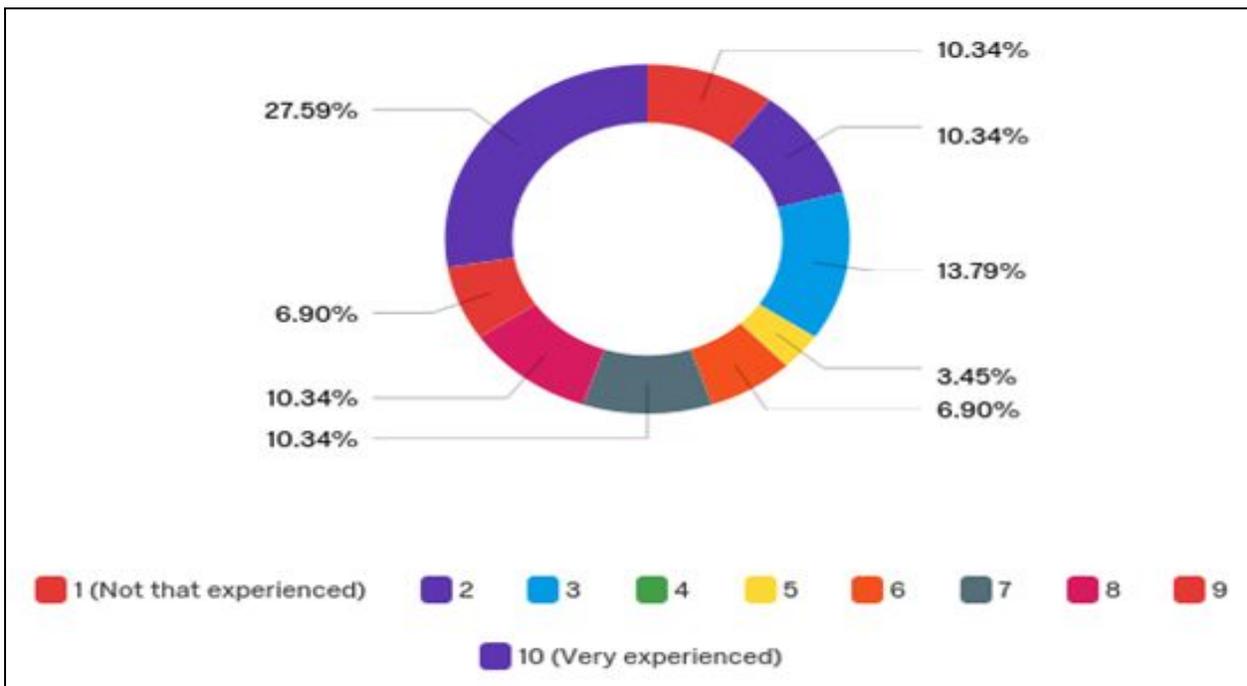
Tables 3 (Social Desirability)

Number of Responses

- ■ It is sometimes hard for me to go on with my work when I am not engaged.
- ■ I sometimes feel resentful when I don't get my way.
- ■ On a few occasions, I have given up doing something because I thought too l...
- ■ There have been times when I felt like rebelling against people in authorit...
- ■ No matter who I'm talking to, I'm always a good listener.
- ■ There have been occasions when I took advantage of someone.
- ■ I'm always willing to admit it when I make a mistake.
- ■ I sometimes try to get even, rather than forgive and forget.
- ■ I am always courteous, even to people who are disagreeable.
- ■ I have never been irked when people expressed ideas very different from my ...
- ■ There have been times when I was quite jealous of the good fortunes of othe...
- ■ I am sometimes irritated by people who ask favors of me.
- ■ I have never deliberately said something that hurt someone's feelings.

Table 4 (Social Desirability)

Participant	+1 for **True** Responses to Statements 5, 7, 9, 10, and 13	+1 for **False** Responses to Statements 1, 2, 3, 4, 6, 8, 11, and 12	Total Points (0 - 13)
1	4	3	7
2	1	0	1
3	2	3	5
4	1	4	5
5	1	3	4

Participant	+1 for **True** Responses to Statements 5, 7, 9, 10, and 13	+1 for **False** Responses to Statements 1, 2, 3, 4, 6, 8, 11, and 12	Total Points (0 - 13)
6	3	1	4
7	4	6	10
8	1	3	4
9	4	2	6
10	3	4	7
11	3	6	9
12	3	3	6
13	2	4	6
14	2	4	6
15	3	1	4
16	3	4	7
17	2	6	8
18	2	1	3
19	2	2	4
20	1	0	1
21	2	5	7
22	4	6	10
23	3	0	3
24	3	5	8
25	1	3	4

Participant	+1 for <u>True</u> Responses to Statements 5, 7, 9, 10, and 13	+1 for <u>False</u> Responses to Statements 1, 2, 3, 4, 6, 8, 11, and 12	Total Points (0 - 13)
26	4	5	9
27	5	7	12
28	3	4	7
29	3	4	7

Table 5 (Aggression)

Participant	Physical Aggression Scores	Verbal Aggression Scores	Anger Scores	Hostility Scores	Total Scores (12 - 60)
1	3	5	8	7	23
2	4	13	6	7	30
3	8	10	8	3	29
4	4	8	5	5	22
5	3	11	9	3	26
6	6	7	7	9	29
7	7	7	6	9	29
8	3	3	4	5	15
9	14	8	15	15	52
10	3	4	9	10	26
11	3	6	5	8	22
12	8	9	10	11	38

Participant	Physical Aggression Scores	Verbal Aggression Scores	Anger Scores	Hostility Scores	Total Scores (12 - 60)
13	4	7	3	9	23
14	10	6	7	6	29
15	3	8	6	9	26
16	8	10	11	10	39
17	3	4	7	9	23
18	5	12	4	6	27
19	3	7	5	9	24
20	7	15	7	7	36
21	3	4	5	3	15
22	5	7	6	10	28
23	12	13	14	11	50
24	3	8	3	9	23
25	3	11	9	7	30
26	4	7	5	8	24
27	7	8	4	6	25
28	9	9	3	6	27
29	6	11	3	13	33

Table 6 (Empathy)

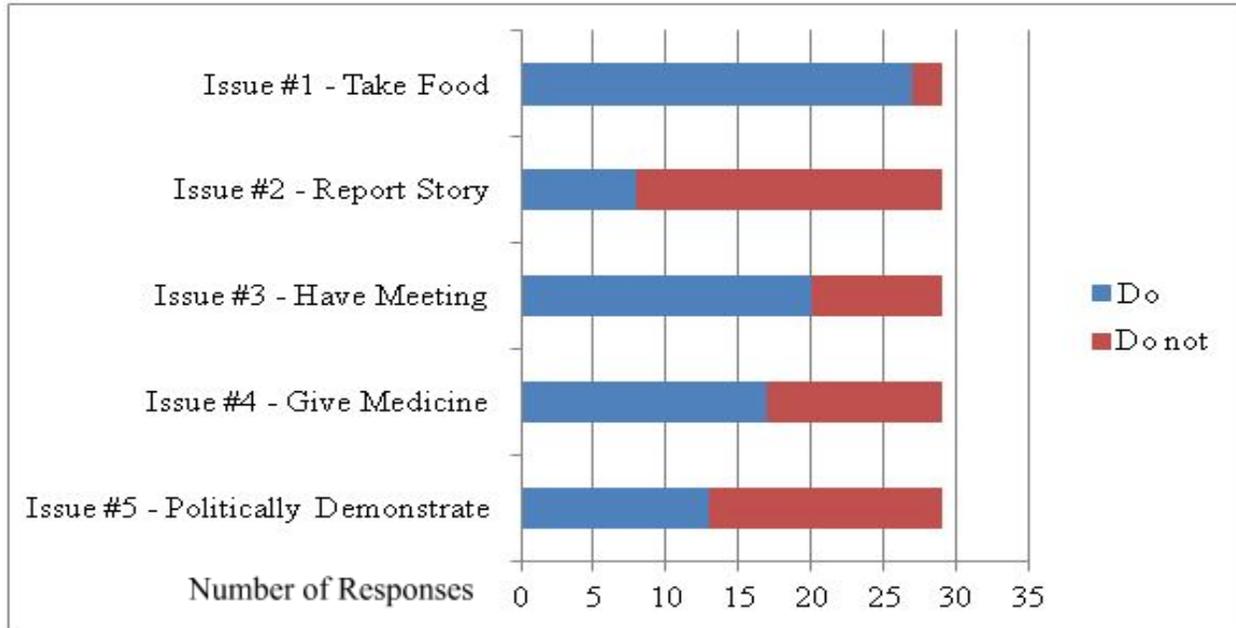| Participant	Affective Empathy Scores (Responses to Questions: 1, 2, 4, 5, 7, 8, 11, 13, 15, 17, 18)	Cognitive Empathy Scores (Responses to Questions: 3, 6, 9, 10, 12, 14, 16, 19, 20)	Total Scores (20 - 100)
1	32	30	62
2	31	30	61
3	38	33	71
4	30	29	59
5	36	26	62
6	35	33	68
7	30	26	56
8	30	29	59
9	33	32	65
10	31	33	64
11	30	25	61
12	28	27	55
13	34	31	65
14	32	30	62
15	32	29	61
16	31	27	58
17	33	27	60
18	35	25	60

Participant	Affective Empathy Scores (Responses to Questions: 1, 2, 4, 5, 7, 8, 11, 13, 15, 17, 18)	Cognitive Empathy Scores (Responses to Questions: 3, 6, 9, 10, 12, 14, 16, 19, 20)	Total Scores (20 - 100)
19	33	27	60
20	23	24	47
21	27	27	54
22	29	28	57
23	38	28	66
24	31	28	59
25	30	32	62
26	33	27	60
27	37	28	65
28	25	33	58
29	25	32	57

Table 7 (Trolley Problem)
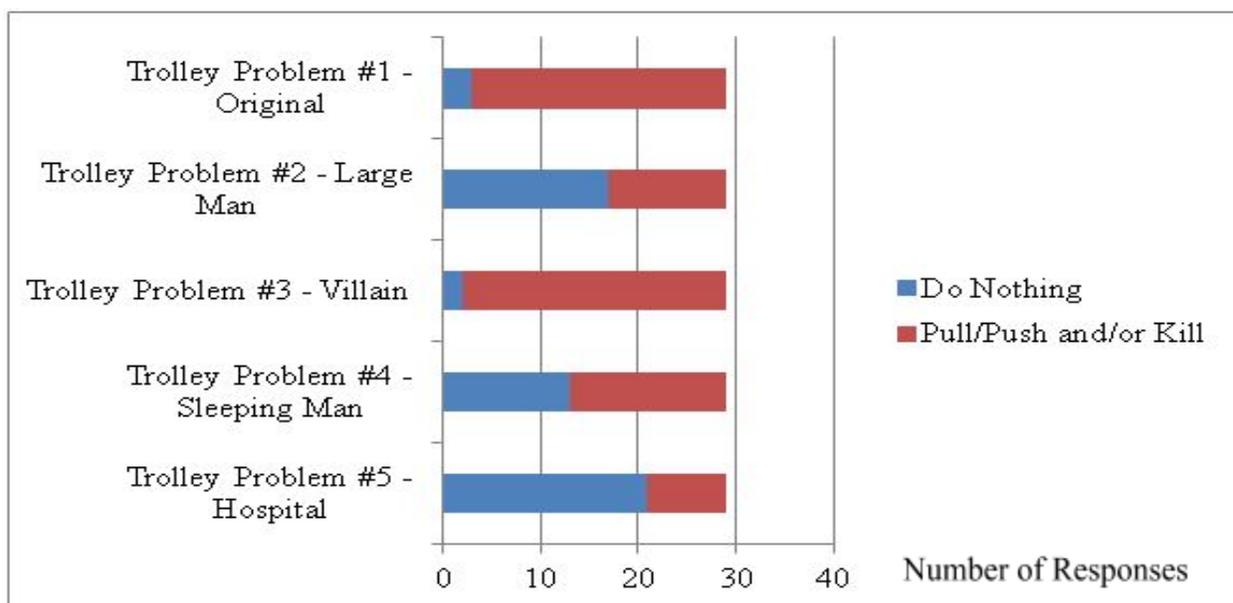
Table 8 (Defining Issues)

Table 9 (Ethics)

Participant	Idealism Scores (Responses to Questions: 1 - 10)	Relativism Scores (Responses to Questions: 11 - 20)	Total Scores (20 - 100)
1	34	13	47
2	35	36	71
3	36	37	73
4	34	36	70
5	21	25	46
6	41	28	69
7	29	32	61
8	31	37	68
9	39	34	73

Participant	Idealism Scores (Responses to Questions: 1 - 10)	Relativism Scores (Responses to Questions: 11 - 20)	Total Scores (20 - 100)
10	45	34	79
11	43	31	74
12	35	31	66
13	43	29	72
14	24	21	45
15	48	37	85
16	27	29	56
17	35	35	70
18	39	12	51
19	30	30	60
20	42	46	88
21	24	41	65
22	28	34	62
23	35	39	74
24	27	34	61
25	37	35	72
26	27	16	43
27	23	28	51
28	18	29	47
29	29	27	56

References

Albiero, P., Matricardi, G., Speltri, D., & Toso, D. (2009). The assessment of empathy in

   adolescence: A contribution to the Italian validation of the "Basic Empathy Scale".

   Journal of Adolescence, 32(2), 393-408.

Bartholow, B. D., Sestir, M. A., & Davis, E. B. (2005). Correlates and consequences of exposure

   to video game violence: Hostile personality, empathy, and aggressive behavior.

   Personality & Social Psychology Bulletin, 31(11), 1573-1586. DOI:

   10.1177/0146167205277205

Buss, A. H., & Perry, M. (1992). The aggression questionnaire. *Journal of Personality and

   Social Psychology, 63*(3), 452.

Bryant, F. B., & Smith, B. D. (2001). Refining the architecture of aggression: A measurement

   model for the Buss–Perry Aggression Questionnaire. *Journal of Research in Personality,

   35*(2), 138-167.

Carré, A., Stefaniak, N., D'Ambrosio, F., Bensalah, L., & Besche-Richard, C. (2013). The Basic

   Empathy Scale in Adults (BES-A): Factor structure of a revised form. *Psychological

   Assessment, 25*(3), 679.

Crowne, D. P., & Marlowe, D. (1960). A new scale of social desirability independent of

   psychopathology. *Journal of Consulting Psychology, 24*(4), 349.

Delhove, M., & Greitemeyer, T. (2018). The relationship between video game character

   preferences and aggressive and prosocial personality traits. *Psychology of Popular Media

   Culture,* DOI: 10.1037/ppm0000211

Foot, P. (1967). The problem of abortion and the doctrine of the double effect. *Oxford Review.*

Forsyth, D. R. (1980). A taxonomy of ethical ideologies. *Journal of Personality and Social*

    Psychology, 39(1), 175.

Forsyth, D. R. (1981). Moral judgment: The influence of ethical ideology. *Personality and Social*

    Psychology Bulletin, 7(2), 218-223.

Forsyth, D. R., & Berger, R. E. (1982). The effects of ethical ideology on moral behavior. *The*

    Journal of Social Psychology, 117(1), 53-56.

Funk, J. B., Buchman, D. D., Jenks, J., & Bechtoldt, H. (2003). Playing violent video games,

    desensitization, and moral education in children. *Applied Developmental Psychology, 24,*

    413-436. DOI: 10.1016/S0193-3973(03)00073-X

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 & Social*

    Psychology Bulletin, 35(6), 752-763. DOI: 10.1177/0146167209333045

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), 578–589. DOI: 10.1177/0146167213520459

Harris, J. A. (1997). A further evaluation of the Aggression Questionnaire: Issues of validity and

    reliability. *Behaviour Research and Therapy, 35*(11), 1047-1053.

Hilliard, L. J., Buckingham, M. H., Geldhof, G. J., Gansert, P., Stack, C., Gelgoot, E. S., …

    Lerner, R. M. (2016). Perspective taking and decision-making in educational game play:

A mixed-methods study. *Applied Developmental Science*. DOI:

10.1080/10888691.2016.1204918

Jolliffe, D., & Farrington, D. P. (2006). Development and validation of the Basic Empathy Scale.

Journal of Adolescence, 29(4), 589-611.

Khoo, A. (2012). Video games as moral educators?. *Asia Pacific Journal of Education, 32*(4),

416-429. DOI: 10.1080/02188791.2012.738638

Leite, W. L., & Beretvas, S. N. (2005). Validation of scores on the Marlowe-Crowne social

desirability scale and the balanced inventory of desirable responding. *Educational and*

*Psychological Measurement, 65(*1), 140-154.

Martin, R. M., Shafto, M., & Vandeinse, W. (1977). The reliability, validity, and design of the

Defining Issues Test. *Developmental Psychology, 13*(5), 460.

Ruggiero, D. (2014). The effect of a persuasive social impact game on affective learning and

attitude. *Computers in Human Behavior, 45,* 213-221. DOI: 10.1016/j.chb.2014.11.062

Rest, J. R. (1979). Defining issues test. University of Minnesota, Minnesota moral research

project.

Rest, J. R., Narvaez, D., Thoma, S. J., and Bebeau, M. J. (1999). DIT2: Devising and testing a

revised instrument of moral judgment. *Journal of Educational Psychology, 91*(4),

644-659.

Reynolds, W. M. (1982). Development of reliable and valid short forms of the Marlowe‑Crowne

Social Desirability Scale. *Journal of Clinical Psychology, 38*(1), 119-125.

Schrier, K. (2017). Designing role-playing video games for ethical thinking. *Educational*

    Technology Research and Development, 65(4), 831-868. DOI:

    10.1007/s11423-016-9489-7

Siyez, D. M., & Baran, B. (2017). Determining reactive and proactive aggression and empathy

    levels of middle school students regarding their video game preferences. *Computers in*

    Human Behavior, 72, 286-295. DOI: 10.1016/j.chb.2017.03.006

Tamborini, R., Bowman, N. D., Prabhu, S., Hahn, L., Klebig, B., Grall, C., & Novotny, E.

    (2016). The effect of moral intuitions on decisions in video game play: The impact of

    chronic and temporary intuition accessibility. *New Media & Society, 20*(2), 564-580.

    DOI: 10.1177/1461444816664356

Teng, Z., Nie, Q., Liu, Y., & Guo, C. (2018). Is prosocial video game exposure related to

    prosociality? an ERP study based on a prosocial help needed decision task. *Computers in*

    Human Behavior, 79, 30-39. DOI: 10.1016/j.chb.2017.10.014

Thomson, J. J. (1976). Killing, letting die, and the trolley problem. *The Monist, 59(*2), 204-217.

Thomson, J. J. (1984). The trolley problem. *Yale LJ, 94*, 1395.

Appendix - Online Survey

Moral-based Decision-Making in Gameplay
Informed Consent Statement

Research Study Title: Moral-based Decision-making in Gameplay
Researchers: Keirsten Brown, University of Tennessee, Knoxville
                 Dr. Julia Jaekel, University of Tennessee, Knoxville

INTRODUCTION
You are invited to be a part of a research study. This study's purpose is to find out how one's personal characteristics are linked to decision-making in gameplay. The study will look at aggression, empathy, social desirability, and demographic background variables when making moral-based decisions in gameplay.

INFORMATION ABOUT PARTICIPANTS' INVOLVEMENT IN THE STUDY
Being in this study is up to you. You can stop up until you submit the survey. After you submit the survey, we cannot remove your responses because we will not know which responses came from you. If you agree to be in the study, the total amount of time to complete this online survey in its entirety will take between thirty (30) and forty (40) minutes.

If you agree to be in this study, we will ask you to answer questions about your demographic background and what moral choice you would make in a given scenario based on common ethical dilemmas found in moral psychology. You can skip survey questions that you do not want to answer.

RISKS
A potential risk for participating in this research is possible distress from completing some of the scenarios. If you feel distressed at any point in the research study, feel free to talk to someone. The information for the National Alliance on Mental Health helpline is included here: 1-800-950-NAMI (6264). In addition, if you want to talk to someone on campus, then you can call the UT 24-hour helpline. The numbers is 865-974-HELP (4357). Other than that, there are no foreseeable risks other than those encountered in everyday life.

BENEFITS
We do not expect you to benefit from being in this study. Your participation may help us to learn more about moral-based decision-making in video games. We hope the knowledge gained from this study will benefit others in the future.

CONFIDENTIALITY
All responses are collected anonymously. Data will be stored securely and will be made available only to the student PI and the faculty advisor. No reference will be possible which could link individual participants to the study.

CONTACT INFORMATION

If you have questions at any time about the study or the procedures, or you experience adverse effects as a result of participating in this study, you may contact the student PI, Keirsten Brown, at kbrow115@vols.utk.edu, or the faculty advisor, Dr. Julia Jaekel, at jjaekel@utk.edu.

If you have questions about your rights as a participant or wish to speak with someone other than the research team about the study, you may contact the University of Tennessee IRB Compliance Officer at utkirb@utk.edu or (865) 974-7697.

PARTICIPATION

Your participation in this study is voluntary; you may decline to participate without penalty. For example, your decision will not affect your grades, relationship with your instructors or the researchers, or standing with the University of Tennessee, Knoxville. In addition, if you decide to participate, you may withdraw from the study at any time without penalty. Your decision to participate or not cannot be traced back to you.

STATEMENT OF CONSENT

I have read this form, been given the chance to ask questions and have my questions answered. If I have more questions, I have been told who to contact. By clicking the "**I Agree**" button below, I am agreeing to be in this study. I can print or save a copy of this consent information for future reference. If I do not want to be in this study, I can close my internet browser.
- I Agree

Demographics

- What is your gender?
  - Male
  - Female
  - Transgender
  - Other
  - Prefer to not answer

- What is your age?
  - 18
  - 19
  - 20
  - 21
  - 22
  - 23
  - 24
  - 25

- ○ 26
- ○ 27
- ○ 28
- ○ 29
- ○ 30
- ○ 30+
- ○ Prefer to not answer

- ● What race are you?
  - ○ Black or African American
  - ○ White or Caucasian
  - ○ Hispanic or Latino
  - ○ American Indian
  - ○ Alaska Native
  - ○ Asian American
  - ○ Native Hawaiian
  - ○ Other Pacific Islander
  - ○ Other
    - ■ If other, please include your answer in the space provided.
  - ○ Prefer to not answer

- ● In the space provided, please identify which city you are from, or if you prefer, which city do you consider your home to be? If you would prefer to not answer, please write that in the space provided.

- ● What religion you identify with or do you practice?
  - ○ I do not practice a religion (Secular/Atheist/Agnostic)
  - ○ Christianity
  - ○ Islam
  - ○ Judaism
  - ○ Hinduism
  - ○ Buddhism
  - ○ Baha'i
  - ○ Other
    - ■ If other, please include your answer in the space provided.
  - ○ Prefer to not answer

Experience

Please answer these five (5) questions by deciding what number best applies to your experience within the last year with video games.

NOTE: In this case, a VIOLENT video game is a game that includes characters or scenes "using or involving physical force intended to hurt, damage, or kill someone or something." (From the Webster dictionary)

	One time (1)	2	3	4	5	6	7	8	9	More than ten times (10+)
How many times have you WATCHED someone play a NONVIOLENT video game?										
How many times have you WATCHED someone play a VIOLENT video game?										
How many times have you PLAYED a NONVIOLENT video game?										
How many times have you PLAYED a VIOLENT video game?										

- On a scale of one (1) to ten (10), how experienced do you think you are with video games?
    - 1 (Not that experienced)
    - 2

- 3
- 4
- 5
- 6
- 7
- 8
- 9
- 10 (Very experienced)

Moral-based Decision-Making in Gameplay

Social Desirability

Please answer these thirteen (13) questions by deciding whether the statements below are true or false for you.

	True	False
It is sometimes hard for me to go on with my work when I am not engaged.		
I sometimes feel resentful when I don't get my way.		
On a few occasions, I have given up doing something because I thought too little of my ability.		
There have been times when I felt like rebelling against people in authority even though I knew they were right.		
No matter who I'm talking to, I'm always a good listener.		
There have been occasions when I took advantage of someone.		
I'm always willing to admit it when I make a mistake.		
I sometimes try to get even, rather than forgive and forget.		
I am always courteous, even to people who are disagreeable.		
I have never been irked when people expressed ideas very different from my own.		
There have been times when I was quite jealous of the good fortunes of others.		

I am sometimes irritated by people who ask favors of me.		
I have never deliberately said something that hurt someone's feelings.		

Aggression

Please answer the next twelve (12) questions by determining how characteristic these statements are for you on a scale of one (1) to five (5).

	Very unlike me (1)	Somewhat unlike me (2)	Neither unlike or like me (3)	Somewhat like me (4)	Very like me (5)
Given enough provocation, I may hit another person.					
There are people who pushed me so far that we came to blows.					
I have threatened people I know.					
I often find myself disagreeing with people.					
I can't help getting into arguments when people disagree with me.					
My friends say that I am somewhat argumentative.					
I flare up quickly but get over it quickly.					
Sometimes I fly off the handle for no good reason.					

I have trouble controlling my temper.					
At times I feel I have gotten a raw deal out of life.					
Other people always seem to get the breaks.					
I wonder why sometimes I feel so bitter about things.					

Empathy

Please answer the next twenty (20) questions by determining how characteristic these statements are for you on a scale of one (1) to five (5).

	Strongly Disagree (1)	Disagree (2)	Neither agree or disagree (3)	Agree (4)	Strongly Agree (5)
My friend's emotions don't affect me much.					
After being with a friend who is sad about something, I usually feel sad.					
I can understand my friend's happiness when she/he/they does/do well at something.					
I get frightened when I watch characters in a scary movie.					
I get caught up in other people's feelings easily.					
I find it hard to know when my friend is frightened.					

I don't become sad when I see other people crying.				
Other people's feelings don't bother me at all.				
When someone is feeling 'down,' I can usually understand how they feel.				
I can usually work out when my friend is scared.				
I often become sad when watching sad things on TV or in films.				
I can often understand how people are feeling even before they tell me.				
Seeing a person who has been angered has no effect on my feelings.				
I can usually work out when people are cheerful.				
I tend to feel scared when I am with a friend who is afraid.				
I can usually realize quickly when a friend is angry.				
I often get swept up in my friend's feelings.				
My friend's unhappiness doesn't make me feel anything.				
I am not usually aware of my friend's feelings.				
I have trouble figuring out when my friend is happy.				

Moral-based Decision-making Simulation
Please answer the following five (5) scenarios as if you were playing a character in a video game, and you were given these choices to complete the next steps of your quest. Pick the statement that you agree with the most, then please briefly explain your reasoning for picking that option in two (2) to three (3) sentences.

- You see a runaway trolley moving toward five tied-up (or otherwise incapacitated) people lying on the tracks. You are standing next to a lever that controls a switch. If you pull the lever, the trolley will be redirected onto a side track, and the five people on the main track will be saved. However, there is a single person lying on the side track.
  - Do nothing and allow the trolley to kill the five people on the main track.
  - Pull the lever, diverting the trolley onto the side track where it will kill one person.
  - Briefly explain your reasoning for reaching your decision.

- As before, a trolley is hurtling down a track towards five people. You are on a bridge under which it will pass, and you can stop it by putting something very heavy in front of it. As it happens, there is a very large man next to you – your only way to stop the trolley is to push him over the bridge and onto the track, killing him to save five.
  - Do nothing and allow the trolley to kill the five people on the main track.
  - Push the large man onto the track, killing him in order to save the five people.
  - Briefly explain your reasoning for reaching your decision.

- The large man is in fact the villain, who put the five people in danger. If you were to push the villain to his death, you would save five innocent people.
  - Do nothing and allow the trolley to kill the five people on the main track.
  - Push the large villain onto the track, killing him in order to save the five people.
  - Briefly explain your reasoning for reaching your decision.

- As before, a trolley is hurtling down a track towards five people. You can divert its path by colliding another trolley into it, but if you do, both will be derailed and go down a hill, and into a yard where a man is sleeping in a hammock. He would be killed.
  - Do nothing and allow the trolley to kill the five people on the main track.
  - Collide the trolley with another trolley and kill the sleeping man.
  - Briefly explain your reasoning for reaching your decision.

- Now that the trolley is gone, we are now at the hospital. A brilliant transplant surgeon has five patients, each in need of a different organ, each of whom will die without that organ. Unfortunately, there are no organs available to perform any of these five transplant

operations. A healthy young traveler, just passing through the city the doctor works in, comes in for a routine checkup. In the course of doing the checkup, the doctor discovers that his organs are compatible with all five of his dying patients. Suppose further that if the young man were to disappear, no one would suspect the doctor.

- ○ Let the man go and let the patients die without their organ transplants.
- ○ Kill the man and save all five patients with his organs.
- ○ Briefly explain your reasoning for reaching your decision.

Moral-based Decision-making Simulation

Please answer the following five (5) scenarios as if you were playing a character in a video game, and you were given these choices to complete the next step of your quest. Pick the statement that you agree with most, then please briefly explain your reasoning for picking that option in two (2) to three (3) sentences.

- The small village in northern India has experienced shortages of food before, but this year's famine is worse than ever. Some families are even trying to feed themselves by making soup from tree bark. Mustaq Singh's family is near starvation. He has heard that a rich man in his village has supplies of food stored away and is hoarding food while its price goes higher so that he can sell the food later at a huge profit. Mustaq is desperate and thinks about stealing some food from the rich man's warehouse. The small amount of food that he needs for his family probably wouldn't even be missed, but there is still a chance of getting caught.
    - ○ Take the food
    - ○ Do not take the food
    - ○ Briefly explain your reasoning for reaching your decision.

- Molly Dayton has been a news reporter for the *Gazette* newspaper for over a decade. Almost by accident, she learned that one of the candidates for Lieutenant Governor for her state, Grover Thompson, had been arrested for shoplifting 20 years earlier. Reporter Dayton found out that early in his life, Candidate Thompson had undergone a confused period and done things he later regretted, actions which would be very out-of-character now. His shoplifting had been a minor offense and charges had been dropped by the department store. Thompson has not only straightened himself out since then, but built a distinguished record in helping many people and in leading constructive community projects. Now, Reporter Dayton regards Thompson as the best candidate in the field and likely to go on to important leadership positions in the state. Reporter Dayton wonders whether or not she should write the story about Thompson's earlier troubles because in the upcoming close and heated election, she fears that such a news story could wreck Thompson's chance to win.

- ○ Report the story
- ○ Do not report the story
- ○ Briefly explain your reasoning for reaching your decision.

- Mr. Grant has been elected to the School Board District 190 and was chosen to be Chairman. The district is bitterly divided over the closing of one of the high schools. One of the high schools has to be closed for financial reasons, but there is no agreement over which school to close. During his election to the School Board, Mr. Grant had proposed a series of "Open Meetings" in which members of the community could voice their opinions. He hoped that dialogue would make the community realize the necessity of closing one high school. Also he hoped that through open discussions, the difficulty of the decision would be appreciated, and that the community would ultimately support the school board decision. The first Open Meeting was a disaster. Passionate speeches dominated the microphones and threatened violence. The meeting barely closed without fist-fights. Later in the week, school board members received threatening phone calls. Mr. Grant wonders if he ought to call off the next Open Meeting.
  - ○ Call off the next open meeting
  - ○ Have the next open meeting
  - ○ Briefly explain your reasoning for reaching your decision.

- Mrs. Bennett is 62 years old, and in the last phases of colon cancer. She is in terrible pain and asks the doctor to give her more pain-killer medicine. The doctor has given her the maximum safe dose already and is reluctant to increase the dosage because it would probably hasten her death. In a clear and rational mental state, Mrs. Bennett says that she realizes this; but she wants to end her suffering even if it means ending her life.
  - ○ Give Mrs. Bennett an increased dosage
  - ○ Should not give her an increased dosage
  - ○ Briefly explain your reasoning for reaching your decision.

- Political and economic instability in a South American country prompted the President of the United States to send troops to "police" the area. Students at many campuses in the U.S.A. have protested that the United States is using its military might for economic advantage. There is widespread suspicion that big oil multinational companies are pressuring the President to safeguard a cheap oil supply even if it means loss of life. Students at one campus took to the streets in demonstrations, tying up traffic and stopping regular business in the town. The president of the university demanded that the students stop their illegal demonstrations. Students then took over the college's administration building, completely paralyzing the college.
  - ○ Students should continue demonstrating in these ways

- ○ Students should not continue demonstrating in these ways
- ○ Briefly explain your reasoning for reaching your decision.

Ethics

Please answer the next twenty (20) questions by determining how characteristic these statements are for you on a scale of one (1) to five (5).

	Strongly Disagree (1)	Disagree (2)	Neither agree or disagree (3)	Agree (4)	Strongly Agree (5)
People should make certain that their actions never intentionally harm another even to a small degree.					
Risks to another should never be tolerated, irrespective of how small the risks might be.					
The existence of potential harm to others is always wrong, irrespective of the benefits to be gained.					
One should never psychologically or physically harm another person.					
One should not perform an action that might in any way threaten the dignity and welfare of another individual.					
If an action could harm an innocent other, then it should not be done.					
Deciding whether or not to perform an act by balancing the positive consequences					

of the act against the negative consequences of the act is immoral.				
The dignity and welfare of the people should be the most important concern in any society.				
It is never necessary to sacrifice the welfare of others.				
Moral behaviors are actions that closely match ideals of the most "perfect" action.				
There are no ethical principles that are so important they should be a part of any code of ethics.				
It is acceptable for ethical perspectives to vary from one situation and society to another.				
Moral standards should be seen as being individualistic; what one person considers to be moral may be judged to be immoral by another person.				
Different type of morality cannot be compared as to "rightness."				
Questions of what is ethical for everyone can never be resolved since what is moral or immoral is up to the individual.				
Moral standards are simply personal rules that indicate				

how a person should behave, and are not able to be applied in making judgments of others.				
Ethical considerations in interpersonal relations are so complex that individuals should be allowed to formulate their own individual codes.				
Rigidly codifying an ethical position that prevents certain types of actions could stand in the way of better human relations and adjustment.				
No rule concerning lying can be formulated; whether a lie is permissible or not permissible totally depends on the situation.				
Whether a lie is judged to be moral or immoral depends upon the circumstances surrounding the action.				

Personal Opinion Question

Please answer this last question as it applies to you.

- Do you believe your decisions in real-life match your decision-making when you play video games?
  - No
  - Yes
  - Sometimes
  - Please provide a short explanation for your reasoning in reaching your decision in two (2) to three (3) sentences.