THE EFFECTS OF TRANSPORTATION INTO A

VIDEO GAME WORLD ON AGGRESSIVE

COGNITIONS AND BEHAVIORS

By

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Abstract: Transportation is the state of being highly immersed within a media world. Two studies examined how transportation into a video game world (via character choice) increases aggressive cognitions and behaviors. Study 1 examined the effects of character choice and presence of blood on aggressive cognitions. It was found that freedom of choice increased aggressive cognitions, but only when blood was present in the game. Study 2 examined the effects of character choice and presence of blood on aggressive behaviors via a noise blast competitive reaction time task. Consistent with Study 1, freedom of choice increased aggressive behavior, but only when blood was present in the game. Furthermore, transportation mediated the relationship between choice and aggressive behaviors. Together, these studies offer investigation of the impact of character choice and transportation in video games and emphasize the importance of transportation within video game research. In doing so, this work introduces a potential moderator and mediator for previously established video game effects and opens the door for future examination of how other attitudes and behaviors might be influenced when playing a video game in a highly transported state.

TABLE OF CONTENTS

LIST OF FIGURES

Figure	Page

CHAPTER I

INTRODUCTION

Imagine a man marching down a street in a large city during the dark of night. His current goal is to find another man and ruthlessly beat him. He finds the man and proceeds to strike him numerous times with a baseball bat. Imagine the sounds of the bat as it hits the man, the cries of the man being beaten, the heaviness in the arms of the man brandishing the bat. If I have done an adequate job of describing the scene, you should be able to see the events unfold in your mind's eye. This is because a vivid description like this mentally transports the reader into the narrative world. While you can easily picture these events unfolding, few of us could place ourselves in the world where a man could beat another man in this way without any repercussions. However, millions of people do just that each time they play video games. The current research examines the effects that occur as a result of such mental transportation into the virtual worlds of video games.

In developing my current theory, I have combined two disparate lines of research: video games and transportation. First, I will review the video game literature, which has primarily focused on aggressive cognitions and behaviors. Second, I will review transportation literature, which has primarily focused on written narratives. Finally, I will suggest how the concept of transportation can be applied to video games.

CHAPTER II

REVIEW OF LITERATURE

Effects of Video Games

The majority of video game research has focused on the negative effects of the violent content present. First, research has shown that playing violent video games can increase players' aggressive cognitions. Participants who played a violent game produced more aggressive word completions than those who played a non-violent game (Anderson, Carnagey, Flanagan, Benjamin, Eubanks, & Valentine, 2004). Similarly, playing violent video games has also been shown to cause faster reaction times to aggressive words (Anderson & Dill, 2000) and can lead participants to complete open-ended stories with more violent conclusions (Kirsch, 1998). Finally, a recent meta-analysis (Anderson et al., 2010) found that aggressive cognitions were consistently related to violent video game play. Taken together, these studies indicate that violent video games do have a causal link to aggressive cognitions and this link is evident with both short-term and long-term video game exposure.

Not only are aggressive cognitions more likely to occur when playing violent video games, but so are aggressive behaviors (Anderson et al., 2010). This effect has been examined with several methods ranging from the tendency to "punish" a confederate by making them place their hand in cold water (Ballard & Lineberger, 1999), to administering hot sauce to a confederate who dislikes spicy food (Barlett, Branch, Reodeheffer, & Harris, 2009). However, the most popular method of assessing aggressive behavior involves delivering noise blasts to a confederate and several studies have demonstrated that playing a violent game causes participants to deliver

both longer and higher intensity noise blasts (Anderson & Dill, 2000; Anderson & Carnagey, 2009).

Although violent video games impact aggressive responses, a number of moderators have been shown to strengthen this effect. For example, presence of blood in a game has been shown to increase the effect of video games on aggressive thoughts (Barlett, Harris, & Bruey, 2007). Furthermore, realism of the video game imagery has been shown to increase the effect of video games on aggressive reactions (Barlett & Rodeheffer, 2009). Importantly, these findings demonstrate there are characteristics of games other than the acts of violence that can increase aggressive reactions. Another potential reason for the powerful influence of video games that has yet to be explored is the way that games immerse their players into the video game world. Such immersion into a virtual world is known as transportation.

Transportation

When reading a good book, people often have the sense they are "lost" or "swept up" in the story's world. Such absorption is referred to as *transportation* (Green & Brock, 2000) and is conceptualized as the state of feeling cognitively, emotionally, and imaginally immersed in a narrative world (Gerrig, 1993; Green & Brock, 2000). When people become transported, they begin to react emotionally and cognitively to the story's events. Transportation encourages readers to endorse the attitudes and behaviors portrayed within the narrative world. For example, someone who is transported while reading a crime novel may be more likely to endorse strict crime legislation, think that crime is common in their neighborhood, and adopt a just world mentality (Green & Brock, 2000).

Research shows that when transportation is high, people are likely to change their attitudes to be in line with those present in the media world (Green & Brock, 2000). That is, people who are highly transported suspend their normal assumptions or set of beliefs and begin using the beliefs of the narrative they are presented with as a frame of reference (Strange, 2002). For example, after reading a story that contained violence, participants who were transported

were susceptible to changes in beliefs about violence, such that they expected it more (Green & Brock, 2000). Transportation also promotes attitude change by causing the individual to modify their self-concept in accordance with the story's protagonist. For example, in a transportation study conducted on movies instead of written stories (Sestir & Green, 2010), participants were transported or not while viewing a film clip and asked to rate themselves on a series of traits. Participants who were transported while watching a movie with an arrogant protagonist (*American Psycho*) rated themselves as more arrogant and selfish. Similarly, participants who were transported while watching a movie with a friendly protagonist (*City of Angels*) rated themselves as more friendly and loving. Thus, transportation causes media consumers to change their attitudes and their self-concepts to become more consistent with the story's content.

There is indirect evidence that suggests transportation does occur when playing a video game. Przybylski and colleagues (2012) hypothesized that video games allow players to "try on" different aspects depending on the kinds of video game characters chosen. They examined the effect of playing a game that allowed the player to play as a character who was like their ideal self or not. They found that when playing as a character like their ideal self, participants were motivated to become like that character. Furthermore, immersion into the video game moderated the motivation of players to become more like the characters in the video game such that those more immersed were more intrinsically motivated to become like the character in the video game they played.

Other research suggests that video games with realistic violence increase aggressive feelings and arousal more than games with unrealistic violence (Barlett & Rodeheffer, 2009). Furthermore, video games that include a storyline produce more enjoyment and greater arousal than games without a storyline (Schneider, Lange, Shin, & Bradley, 2004). Other research has established that playing as a video game character that is personalized can lead to more aggressive behaviors (Fischer, Kastenmüller, & Greitemeyer, 2010). Additionally, participants allowed to customize their character reported more arousal and self-activation than participants

4

forced to play as a default character. Thus, features that would appear to increase immersion within the video game world, such as realistic imagery, a storyline or increased customizability have been shown to strengthen the impact that such games have on aggressive responses.

In my own lab, I have examined character choice and how it relates to transportation into a video game world (Stermer & Burkley, 2012a). I found that when players were allowed to choose their video game character, not only did they identify more with the character but they also identified more with the video game world. Thus, they were more transported into the video game world. The distinction between transportation and identification with characters is important because the concept of transportation extends beyond just identifying with one's character and is more about how one relates to the virtual world created in the video game.

To establish that transportation plays an important role in video game play and aggressive responses, I conducted a correlational study (Stermer & Burkley, 2012b) that used a modified transportation measure (Sestir,2008) to measure player's chronic tendencies to become transported into the video game world. The results showed that trait transportation in a video game positively correlated with game play, such that those who were more likely to become transported into video games reported playing games more often ($r = .21$, $p = .007$) and also playing games with greater violent content ($r = .31$, $p < .001$). Trait transportation also positively correlated with aggressive responses, such that those who were more likely to become transported into video games were also those who were more verbally and physically aggressive in their daily lives ($r = .26$, $p < 001$). Although correlational, these data suggest that transportation is an important yet neglected feature of modern video game play.

Present Theory

Some of the factors that increase transportation (e.g., vivid imagery) in written narratives can easily be extended to video games. However, because video games are distinct from written narratives, there may be features of these games that increase transportation in ways that have yet to be explored. One such feature is character choice. Players who are allowed the freedom to

choose their own character may feel a greater sense of connection with the character and as a result, may feel more fully immersed in the video game world.

To my knowledge, only one video game study actually allowed participants to choose their game character. Barlett, Harris and Bruey (2008) conducted two studies examining how the presence of blood in video games increases aggressive responses. In their studies, participants played a video game with blood present or not. Before playing the game, all participants were allowed to select among several characters and fighting styles (e.g., martial arts, weapons). The results showed that people who played the video game with blood present were higher in hostility than people who played with no blood present. However, if choice does increase transportation in the way I have described, this implies that the results of this study may have not occurred if participants' choice had been restricted. That is, all the participants in this study may have experienced a high level of transportation in the game world as a result of their choice and this may have increased the impact that blood had on aggressive responses.

The present studies were designed to provide the first investigation of transportation theory within the context of the virtual world of video games. Specifically, these studies were designed to examine if character choice increases transportation within a video game world and encourages players to adopt the violent attitudes and behaviors present in violent video games. Study 1 explored this possibility by examining the impact of character choice on aggressive cognitions. I hypothesized that participants allowed to choose their own character would report higher transportation and have more aggressive cognitions. Study 2 extended this work by examining the impact of character choice on aggressive behavior. I hypothesized that participants allowed to choose their own character would report higher transportation and a higher level of aggressive behaviors. Both studies compared the impact of character choice with an already established factor of video games known to increase aggressive responses (i.e., presence of blood).

CHAPTER III

STUDY ONE

Overview

Previous research shows that participants who choose a character in a video game are more transported into the game than participants who are forced to play as a character chosen by the researchers (Stermer & Burkley, 2012a). Additionally, previous research (Barlett, et. al, 2008) has established that presence of blood in a video game causes participants to have more aggressive thoughts. However, it is not clear how the ability to choose characters in a game and presence of blood interact. For this study, I hypothesized that participants who were allowed to choose a character and play a game with blood present would have more aggressive thoughts than participants who were not allowed to choose a character, even when blood is present.

Method

Participants and design. One hundred ninety participants (110 men, 80 women) from a large Midwestern university participated for course credit (mean age was 19.47, $SD = 1.65$). Participants reported playing video games between 0 and 25 hours per week ($M = 4.58$, $SD = 5.74$). A 2 (choice vs. no choice) × 2 (blood vs. no blood) design was employed.

Procedure and measures. Participants were seated at a television and a PlayStation 3 video game console. Participants in the choice condition were allowed to play the game (*Mortal Kombat vs. DC Universe*, 2008) as any character desired. Participants in the no choice condition were forced to play as the character Scorpion (i.e., ninja). Participants in the blood condition played the game with the blood level turned on "high." This caused blood to spray from the

7

character each time they were hit. Participants in the no blood condition played the game with the blood level turned "off." This removed all blood and gore from the game. After playing the game for 20 minutes, participants completed the questionnaire packet and were released from the session.

Aggression word completion test. Participants completed a word completion task taken from Anderson, Carnagey, and Eubanks (2003). For this task, participants were presented with 98 word fragments that could be completed to form neutral or aggressive words. For example, "m_ _gle" could be completed as "mingle" (neutral) or "mangle" (aggressive). Participants were given three minutes to complete as many words as possible. The total number of aggressive words was divided by total number of words completed to create a ratio to use as a composite score. This measure is often used as a measure of aggressive cognitions in media research (Anderson, et al., 2003; Greitemeyer, 2011; Sestir & Barthalow, 2010).

State transportation scale. Next, participants completed the video game state transportation scale adapted from Green and Brock's (2000) narrative transportation scale. This scale contained 20 items assessing how involved participants felt with the video game world and its characters (e.g., "I could picture myself in the scene of the events in the game"). Responses were made on a 1 (*not at all*) to 7 (*very much*) rating scale. These items were averaged to create a composite score, with higher values indicating higher transportation (α = .84).

Trait aggression scale. Next, participants completed the trait aggression scale taken from Buss and Perry (1992). Participants rated their agreement with 29 different statements (e.g., "Once in a while I can't control the urge to strike another person"). Responses were made on a 1 (*extremely uncharacteristic of me*) to 7 (*extremely characteristic of me*) scale. These items were averaged to create a composite score of trait aggression, with higher values indicating greater physical aggression, verbal aggression, quickness to anger, and hostility toward others (α = .87).

This measure is often used as a measure of trait aggression by aggression researchers (Anderson & Dill, 2000; Buss & Perry, 1992).

   Trait transportation scale. To control for individual differences in chronic transportation, participants completed the trait transportation scale taken from Sestir (2008). Participants rated 10 different statements having to do with their transportation level when interacting with media (e.g., "How often do you feel or react as if the experiences of the character you control in a video game are happening to you"). Responses were made on a 1 (*not at all*) to 7 (*very much*) rating scale. These items were averaged to create a composite score of trait transportation, with higher values indicating greater trait transportation ($\alpha = .73$).

   Demographics. Finally, participants indicated their age, race, gender, and hours per week spent playing video games.

Results

   No significant group differences were present on trait aggression, trait transportation or any demographic variables (*F's* < 1).

   Aggression word completion test. Responses on the word completion test were analyzed with a 2 (choice vs. no choice) × 2 (blood vs. no blood) Analysis of Covariance (ANCOVA) with trait aggression entered as a covariate. The main effects for choice and blood conditions were not significant (*F's* < 1). However, the interaction was significant, $F(1, 185) = 6.00$, $p = .02$, $\eta^2_p = .03$. For participants who played the game with blood, those in the choice condition ($M = .21$, $SD = .10$) produced more aggressive words than those in the no choice condition ($M = .16$, $SD = .16$), $F(1, 185) = 8.50$, $p = .004$, $d = .56$ (Figure 1). For participants who played the game without blood, those in the choice condition ($M = .20$, $SD = .09$) did not differ from those in the no choice condition ($M = .20$, $SD = .10$), $F(1, 185) = .24$, $p = .63$, $d = 0$.

   State transportation scale. The data were analyzed with a 2 (choice vs. no choice) × 2 (blood vs. no blood) ANCOVA with trait transportation entered as a covariate. The results

revealed a significant main effect of choice on state transportation, $F(1, 185) = 3.80$, $p = .05$, η^2_p = .02. Consistent with previous research (Stermer & Burkley, 2012a), participants in the choice condition ($M = 3.75$, $SD = .92$) reported higher levels of transportation than participants in the no choice condition ($M = 3.51$, $SD = .95$). The main effect of blood and the interaction were not significant ($F's < 1$).

Discussion

Study 1 sought to examine the effects of choice on aggressive cognitions. As predicted, participants who played a video game with blood had more aggressive cognitions when given freedom to choose their character. This suggests that presence of blood in a game is not enough to cause aggressive cognitions. These results also suggest that variables known to increase aggression (blood) only show effects when allowed freedom of choice. Finally, these results indicate that ability to choose a character in a video game can induce higher state transportation than being forced to play as a pre-determined character.

CHAPTER IV

STUDY TWO

Overview

Study 2 examined if the effect found in Study 1 can extend to aggressive behaviors. As stated previously, research has established an effect of violent games on aggressive behavior (Anderson, Gentile, & Buckley, 2007; Anderson et al., 2010), but never has state transportation been examined within this context. This study examined this relationship using an already established measure of behavioral aggression, the competitive reaction time task (Bushman, 1995; Taylor, 1967).

Method

No significant group differences were present on trait aggression, trait transportation or any demographic variables ($F's < 1$).

Participants and design. Ninety-eight participants (67 men, 31 women) from a large Midwestern university participated for course credit (mean age was 19.31, $SD = 1.80$). Participants reported playing video games between 0 and 35 hours per week ($M = 4.47$, $SD = 5.67$). As in Study 1, a 2(freedom of choice vs. no choice) × 2 (blood vs. no blood) design was employed. The primary dependent measures were noise blast duration, noise blast intensity, and state transportation.

Procedure and measures. The procedure was identical to Study 1 with two exceptions.

First participants in the no choice condition played as the character chosen by the participant in the most recent choice condition. This was done in an effort to remove any desirability confounds that could have been associated with the character in the no choice condition. Second, the aggressive cognition task used in Study 1 was replaced with an aggressive behavior task (i.e., competitive reaction time task).

Competitive reaction time task. In this task, participants completed a version of the Taylor Competitive Reaction Time task (Taylor, 1967; Bushman, 1995). This procedure is often used by aggression researchers and is considered a reliable and valid measure of aggressive behaviors (Anderson & Dill, 2000; Bushman, 1995). The goal for participants' was to push a button faster than the "opponent." Participants completed a total of twenty-five trials. At the beginning of each trial, the participant set the noise intensity and noise blast duration that would be given to their "opponent" if the participant won the trial. Noise intensity ranged from 0 to 10. Noise blasts at level 1 were 55 decibels, noise blasts at level 2 were 60 decibels, and subsequently increased by 5 decibels up to 100 decibels at level 10. Duration was chose from a scale from .5 seconds to 5 seconds, in half-second increments. Participants were led to believe there was another participant in another room competing on the same task as their "opponent." In reality, the program was designed to allow the participant to win 13 of the 25 trials. Noise blasts administered to the participant were randomly selected from the intensity and duration range and administered in a random pattern. Two primary dependent measures were derived from this task. First, the average noise blast duration that the participants delivered across the trials was calculated. Second, the average intensity of noise blasts that participants delivered across all trials was calculated. Both measures are commonly used as indications of aggressive behavior (e.g., Anderson & Carnagey, 2009).

Questionnaire packet. The packet of questions administered after the Competitive Reaction Time Task was identical to the packet used in Study 1. It contained the state transportation scale, trait aggression scale, trait transportation scale, and demographics questions.

Results

 Competitive reaction time task. Both aggression measures were analyzed with a 2 (choice vs. no choice) × 2 (blood vs. no blood) ANCOVA with trait aggression entered as a covariate. Similar to Study 1, the results for noise blast duration indicated the main effects for choice and blood conditions were not significant ($F's < 1$). The interaction was significant, $F(1, 93) = 6.83$, $p = .01$, $\eta^2_p = .07$. For participants who played the game with blood, those in the choice condition ($M = 6.76$, $SD = 1.77$) administered longer noise blasts that those in the no choice condition ($M = 4.69$, $SD = 2.03$), $F(1, 93) = 4.07$, $p = .04$, $d = 1.09$ (see Figure 2). For participants who played without blood, those in the choice condition ($M = 4.84$, $SD = 1.98$) did not differ from those in the no choice condition ($M = 5.70$, $SD = 1.54$), $F(1, 93) = 2.81$, $p = .10$, $d = .49$.

 Similarly, the results for average intensity indicated the main effects for choice and blood conditions were not significant ($F's < 1$). The interaction was significant, $F(1, 93) = 6.86$, $p = .01$, $\eta^2_p = .07$. The overall pattern of means is similar to that of noise blast duration; however, the primary simple main effect driving this interaction appears to be among participants who were allowed to choose their character. For participants who played the game as a character of their choice, those who played the game with blood present ($M = 6.18$, $SD = 1.88$) administered louder noise blasts than participants who played the game without blood present ($M = 4.99$, $SD = 1.99$), $F(1, 93) = 4.29$, $p = .04$, $d = .61$ (Figure 3). For participants who played the game as a pre-determined character, those who played the game with blood ($M = 5.21$, $SD = 2.34$) did not significantly differ from those who played the game without blood ($M = 6.13$, $SD = 1.71$), $F(1, 93) = 2.66$, $p = .10$, $d = .45$.

 State transportation scale. State transportation was analyzed with a 2 (choice vs. no choice) × 2 (blood vs. no blood) ANCOVA with trait transportation entered as a covariate. The results revealed a significant main effect of choice, $F(1, 93) = 4.14$, $p = .04$, $\eta^2_p = .04$.

Consistent with previous research (Stermer & Burkley, 2012a) and Study 1, participants in the choice condition ($M = 4.20$, $SD = .89$) reported higher levels of transportation than those in the no choice condition ($M = 3.74$, $SD = .94$). The main effect of blood and the interaction were not significant ($F < 1$).

Mediational analyses. For a more thorough examination of the findings, multiple meditational analyses were conducted. I hypothesized that transportation would mediate the impact of choice on aggressive responses, but only when blood was present. Although the results did not reveal evidence of mediation for noise intensity measure, they did for noise duration. To test the potential mediation effects, a bootstrapping analysis based on 1000 bootstraps was run (Preacher & Hayes, 2004). I assessed whether state transportation mediated the impact of choice on noise blast duration separately for participants in the blood and no blood conditions. For participants in the blood condition, results showed a significant effect of choice on duration of noise blast ($t = -2.04$, $p = .05$), which was reduced to non-significance ($t = -1.30$, $p = .20$) when controlling for the state transportation, which was still significant ($t = -2.70$, $p = .01$). Thus, state transportation fully mediated the relationship between choice and noise blast duration (*LL 95 CI* $= -1.32$; *UL 95 CI* $= -.03$; $p < .05$). That is, participants who were allowed choice were more likely to be transported, and through higher levels of transportation, more likely to administer longer noise blasts. This same pattern of mediation was not evident for participants who played the game without blood.

Discussion

Study 2 is the first to demonstrate the impact of video game character choice and video game transportation on aggressive behaviors. First, this study demonstrated that players were more aggressive when they were allowed to choose their own character and played a game with blood. Second, this effect of choice on aggressive behaviors was fully mediated by state transportation for the noise blast duration measure. When participants were allowed to choose their own character, they felt more transported into the video game world, and this in turn made

14

them more likely to adopt the aggressive behaviors present in the gory video game. Taken together, these results indicate that video game features known to increase aggression (e.g., presence of blood) are more likely to do so when participants are fully immersed in the game. The results also highlight the fact that character choice and transportation are two important features of video games that have been largely neglected by the gaming literature.

CHAPTER V

GENERAL DISCUSSION

Two studies examined the variables of character choice and state transportation within the context of a video game and their impact on aggressive responses. Study 1 found that a previously established effect (i.e., presence of blood) only influenced participants' aggressive cognitions when they were able to choose their character. Study 2 extended these results and found that blood only influenced participants' aggressive behaviors when participants were allowed to choose their character. Furthermore, Study 2 revealed the effect of character choice on noise blast duration was fully accounted for by changes in state transportation within the video game world. Importantly, these studies offer the first empirical demonstration of the importance of character choice and transportation within the context of a video game.

Although the present studies represent an important extension to video game research on video games, several questions remain. First, my studies focused exclusively on one feature thought to increase transportation: character choice. However, there are likely other features of video games that would also increase transportation (e.g., presence of story, quality of graphics). I hypothesize that character choice led to more investment into the video game itself and thus, was more transporting. This could be due to more feeling of control over the game or it could be due to character choices that are more similar to one's self. While I didn't measure investment explicitly, transportation does take into account the level of investment of the player.

Second, to examine the impact that character choice can have, I paired it with an external

violence cue known to increase aggressive responses: presence of blood. Future research, however, should examine if other variables thought to increase aggression (e.g., perspective, target of violence, duration of time spent playing) also interact with character choice to produce greater aggression.

Third, although both studies demonstrated the expected pattern when blood was present, the pattern of means when blood was not present was somewhat unexpected. In Study 1, both choice and no choice conditions demonstrated a high level of aggressive cognitions when no blood was present. Thus, it could be that instead of choice boosting aggressive cognitions in the blood condition, a lack of choice dampens aggressive cognitions. However, regardless of whether choice increases or lack of choice decreases, what does remain clear is the importance of choice in producing changes in aggressive cognitions, especially when external violence cues are present. In Study 2, a lack of blood reversed our predicted effect, with those in the choice condition demonstrating less aggression than those in the non-choice. Although I speculate this may have been a result of frustration, this explanation remains speculative. Future research should include a measure of frustration to test this possibility. Future research should also consider adding a non-violent game control group to possibly tease out the cause of this unexpected pattern. Without a true control group, it is difficult to determine which game conditions are increasing or decreasing aggression in an objective, rather than relative, way. Although these possibilities are intriguing, they are beyond the scope of the present work.

Despite these potential limitations, the present studies offer important implications for the study of video games. Across both studies character choice was found to be a powerful factor in determining how video games influence real-world aggressive responses. This demonstration is particularly noteworthy since most video game studies conducted in the laboratory assign participants to play the game as a designated character (e.g., Adachi & Willoughby, 2011; Whitaker & Bushman, 2012). This means that a feature common in real-world video game play has been largely non-existent in video game research. I encourage future video game researchers

to incorporate character choice into their studies and to also consider how transportation, via choice or other factors, may impact the way video games alter players' real-world responses.

Several other avenues for future research are brought to mind when examining the current data. Other aspects of character choice need to be examined. The current studies focused on freedom to choose a character from the pre-designed characters of the video game. Many current video games allow the player to create their own characters to play as in the game. For example, a character can be created that looks exactly like oneself or one that looks like an idealized self. Previous research has established that when playing a game as a character similar to oneself increases aggressive responses (Fischer, Kastenmuller, & Greitemeyer (2010). However it's not clear the role transportation might have in this effect. Furthermore, playing as a character more like an idealized self could lead to lower aggressive responses if that idealized self is non-violent.

Additionally, as mentioned in my introduction, video games allow players to engage in behaviors without repercussions. In some games the player can viciously attack characters in the game and there is no response from the characters or environment of the rest of the game. In the games used in the current research, violence against the other characters is required. Future research could examine the moderating effects of this repercussion dynamic. When players are rewarded in the game for aggressive behaviors, are their aggressive attitudes and behaviors and attitudes on subsequent tasks influenced differently than if the aggressive behaviors in the game are ignored or punished?

Finally, future research needs to examine potential personality differences in trait transportation. While I have conducted research that examined the relationship between trait transportation and trait aggression (Stermer & Burkley 2012) other personality variables must be examined to further understand the processes that allow a person to become adequately transported into a video game world.

18

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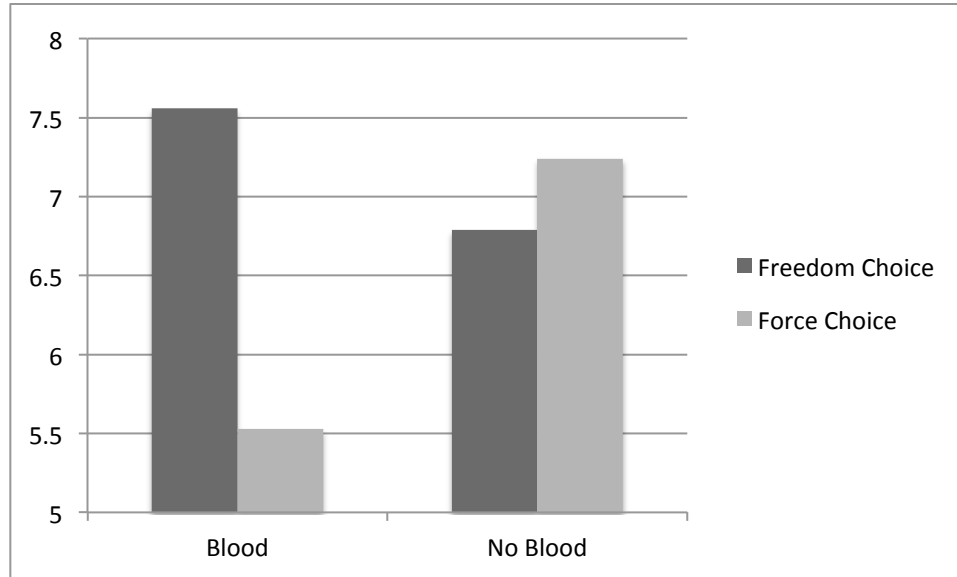
Figure 1, Study 1. Aggressive words as a function of choice of character and presence of blood.
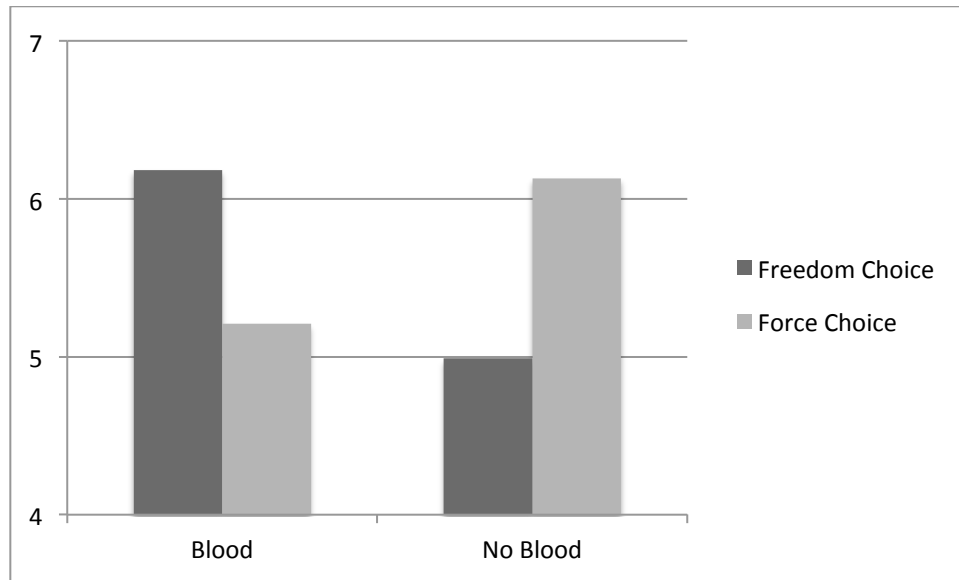
Figure 2, Study 2. Noise blast duration as a function of character choice and presence of blood.
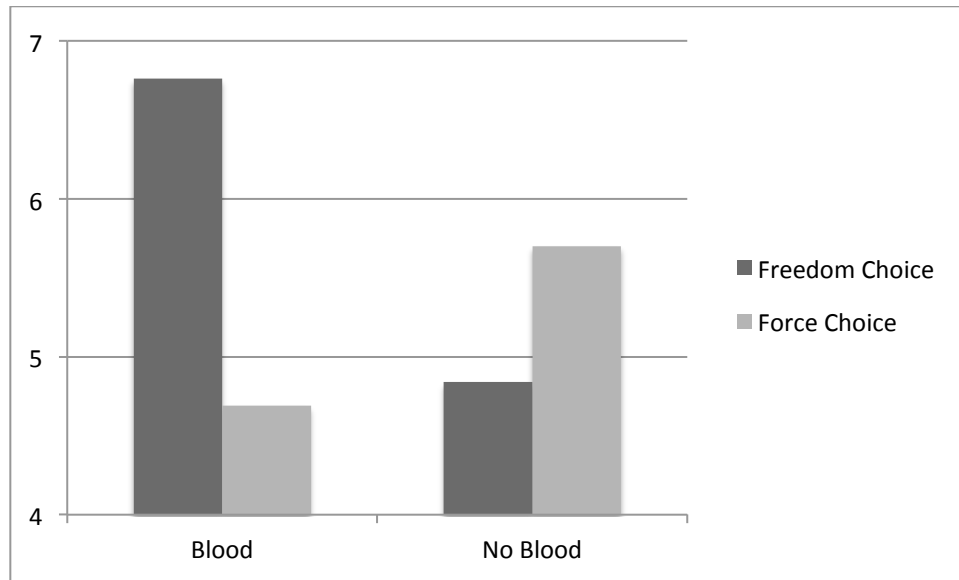
Figure 3, Study 2. Noise blast intensity as a function of character choice and presence of blood.

VITA

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