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PLAY TOGETHER: HOW WATCHING THE COOPERATIVE PLAY OF VIOLENT
VIDEO GAMES CAN POSITIVELY INFLUENCE DYADIC RELATIONSHIPS

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Bachelor of Science in Psychology

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May 2017

submitted in partial fulfillment of requirement for the degree

MASTER OF ARTS IN COMMUNICATION THEORY AND METHODOLOGY

at the

CLEVELAND STATE UNIVERSITY

May 2021

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ABSTRACT

Media effects research has shown that video games can have both antisocial and prosocial effects, depending on the content of the game. Individuals who play violent video games tend to display more aggressive attitudes and behaviors, while those who play games with prosocial content tend to display more prosocial, or helping, attitudes and behavior. The context in which a video game is played has also been shown to influence media effects, with competitive play leading to increased aggression while cooperative play leads to increased prosociality. However, the existing literature has not examined how these effects might influence the interpersonal relationships between those playing the video game.

To test the effects of gaming context on interpersonal relationships, an experiment was conducted that compared two groups of participants exposed to two levels (competitive or cooperative) of a single factor (gaming context). In the competitive condition, participants watched gameplay footage of two individuals playing a video game competitively, while those in the cooperative condition watched gameplay footage of two individuals playing the same game cooperatively. After exposure, five dependent variables were examined to see how they differed between the two groups: state hostility, prosocial score, positive affect change, negative affect change, and change in perceived relationship quality.

Upon initial analysis, only negative affect change was shown to significantly differ between the two conditions. However, this effect was actually due to an interaction between condition and sex. This study also identified that sex, personality, and media usage habits significantly covaried to some degree with all five dependent variables. These covariates provide evidence for how individual differences might influence the effects that result from watching a video game being played in different multiplayer contexts and, as an extension, how individual differences might influence the effects of gaming context in general.

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CHAPTER I

INTRODUCTION

When research into video games began, it was mainly concerned with the effect that violent video games have on a player's aggression. Over time, though, this negative focus shifted to examine the possible benefits and positive effects of video game play. As a result, research has found that the content of a video game determines its effects, with games containing prosocial content leading to increased prosocial behavior by the player (Passmore & Holder, 2014). However, content is not the only factor that influences a video game's effects; context matters as well. When playing a violent video game cooperatively with another player, individuals actually experience less aggression and increased prosocial behavior (Passmore & Holder, 2014). This provides evidence that the context in which a video game is played is more influential than the content which the game contains. Unfortunately, research seems to focus on cooperation purely as a condition rather than as an actual relationship between players. As such, the literature does not discuss how the increased presence of prosocial behavior might influence this relationship. In response, this thesis intends to examine what effects cooperative video game play might have on the dyadic relationship between players. Because of ethical and safety concerns posed by COVID-19, this study is unable to test these effects as intended.

Instead, the study will examine how *viewing* the cooperative and competitive play of violent video games might influence the relationship between two individuals.

By exploring this relationship, this thesis expects to contribute to the existing literature in several ways. Firstly, this study intends to show how established media effects regarding prosocial behavior and aggression might influence other aspects of an individual's life, such as interpersonal relationships. Secondly, this study will make its predictions by synthesizing the findings of two separate areas of communication research. Lastly, this thesis intends to contribute to the existing literature by investigating an emerging, popular form of media that has not yet been the focus of much research.

To achieve these goals, this thesis first reviews the literature on violent media in general, particularly in regards to television and movies, in order to contextualize the specific research on violent video games and aggression. Then, it explains the General Learning Model as a theoretical model for how video game play can influence behaviors, before discussing evidence that shows that violent video game play is associated with increased aggression. This thesis then examines the prosocial effects of video game play and how these effects are dependent on both the content of a game and the context in which the game is played. This research also explores how aggressive and prosocial behavior might affect interpersonal relationships. Then, it briefly mentions how it may be necessary for participants to identify with the players of a video game, rather than the characters in the game, in order to emulate the effects of playing the game themselves. Lastly, this thesis proposes a series of hypotheses in regards to how viewing the cooperative and competitive play of violent video games might influence the relationship between two individuals, before then discussing how these associations might be affected

by individual differences in the Big Five factors of personality.

Following this review of the existing research, this thesis synthesizes the literature on media effects and interpersonal relationships to hypothesize that individuals who watch a violent video game being played cooperatively should experience a more positive change in their perceptions of interpersonal relationships than would those who watch the same game being played competitively. Furthermore, this thesis predicts that those who watch a game being played cooperatively should report lower state hostility, increased prosocial behavior, a greater increase in positive affect, and a greater decrease in negative affect in comparison to individuals who watch the game being played competitively.

This thesis then continues by describing an all-online experiment that was conducted in order to test the proposed hypotheses. The experiment compared two groups of participants exposed to two levels (competitive or cooperative) of a single factor (gaming context). As part of this experiment, participants first completed a pre-test questionnaire before being assigned to either the competitive or cooperative condition. In the competitive condition, participants watched a series of video clips that showed two individuals playing a video game's "Death Match" mode, in which players competed to see who could score the most "kills" on each other. In contrast, participants in the cooperative condition watched a series of video clips that showed two individuals playing the same video game's "Campaign Mode", in which players worked together to complete a series of objectives. After watching the assigned video recordings, participants then completed a post-test questionnaire. Following a more in-depth explanation of the procedure for this experiment, this thesis then describes the measures and scales used.

Finally, this thesis reviews the results of the experiment before concluding by discussing the practical and theoretical implications that these results might have.

CHAPTER II

LITERATURE REVIEW

Violence and Aggression

When academic interest in video games first began, it was mainly in response to a public fear that violent video games were influential in the development of school shooters (Anderson & Bushman, 2001). Due to this, a majority of the research on video game effects has focused on whether playing violent video games leads to increased antisocial behavior, or behavior that attempts to damage another person's property or well-being (Erreygers et al., 2017). However, this focus on violence and aggression is not unique to video game research, with the field of communication having a long history of studying the effects of violent media. By first examining this broader body of literature, key terms can be defined and a general conclusion about the effects of violence in media can be drawn.

“Aggression” refers to any behavior that intentionally attempts to harm another individual, even if that attempt is unsuccessful (Anderson & Bushman, 2001). In comparison, “violence” refers to “extreme forms of aggression, such as physical assault and murder” (Anderson & Bushman, 2001, p. 354). While all forms of violence are considered aggression, not all aggression is violent. Additionally, “violent media” refers

to any media in which an individual intentionally attempts to harm another (Anderson & Bushman, 2001). Relatedly, violence in media is not limited to the actual portrayal of a violent action. In one definition, media can be considered violent if it overtly describes a “credible threat” of violence or displays the “physically harmful consequences” of a violent action (Weaver, 2011). So, when studying the effects of violent media on aggression, researchers look at whether exposure to the threat, performance, or consequences of intentionally harmful actions through media causes the audience themselves to behave in more intentionally harmful ways. While this chapter will mainly use the term aggression, it should be noted that aggression as a construct is also referred to as hostility in some literature (Anderson et al., 1995).

History in Media. Well before the invention of computers, 1920’s America experienced its own “moral panic” regarding the potential effects of popular media (Hull, 2010). As motion pictures were beginning to grow in popularity, so too were concerns that the violent and sexual content of movies were having a negative influence on children (Hull, 2010). In response to this, a series of studies were conducted by the Motion Picture Research Council (MPRC) in order to answer several questions about movies and their effects on those who watch them. Known as the Payne Fund Studies, this project resulted in the conclusion that movies do exert some influence on the entire movie-going population, not just children (Hull, 2010). Of the fifteen studies conducted, only two looked at whether movies lead to antisocial behavior. While these specific studies found that motion pictures can have both positive and negative effects, depending on the individual, the publicized report focused overwhelmingly on the negative findings. Because of this, the Payne Fund Studies would later be criticized not only for faults in

methodology, but also because of the MPRC's chairman's open hostility towards the movie industry (Hull, 2010).

By the late 1970's, laboratory studies into media effects had shown clear and consistent evidence that participants who view violent media tend to behave more aggressively than do those in control groups (Felson, 1996). These include Dr. Albert Bandura's seminal "Bobo doll" experiments, which were conducted as part of a series of studies on behavioral modelling (Nolen, 2009). During these studies, children who watched adults act physically and verbally aggressive were later more likely to act aggressively themselves, demonstrating that children are able to learn by observing the behavior of adults (Bandura et al., 1961). This effect occurred both when observing the adult in person and when watching a video recording of the adult's behavior (Bandura et al., 1961; Nolen, 2009). According to Bandura, humans have an advanced capability for observational learning, and virtually all learning can be achieved vicariously by observing other people's action and their consequences (2001). In a similar way, individuals are able to learn by observing behaviors displayed in media. It is also important to note that the behaviors observed are not just imitated, but rather they serve as a model for future behaviors. Modelling influences convey rules, and those rules can be used by the learner to generate new behaviors that go beyond what was previously observed (Bandura, 2001). Bandura's work is just one example of how research conducted during this period helped contribute to the current understanding of how media can influence behavior.

However, many studies from this time were criticized for lacking external validity, as the laboratory situations used were very different from situations that lead to

violence in the real world. Several studies attempted to address this criticism by taking a more naturalistic approach (Felson, 1996). One such study, led by Hennigen, compared crime rates between American cities that had access to television and those that did not, (as cited in Felson, 1996, p. 107). Contradicting the previously mentioned laboratory experiments, this study found that the presence of television had no effect on the rate of violent crime. In addition, when a city without television gained access to it, there was no significant increase in violent crime. Another study, conducted by Joy and published in 1986, examined changes in the aggressive behavior of children after the introduction of television in their town, (as cited in Felson, 1996, p. 107). Compared to children in two other towns that already had television, the verbal and physical aggression of the children in the town of interest increased by a significantly greater amount after a period of two years. However, during the first phase of the study, the children who did not have access to television were just as aggressive as those who did. This implies that there was some factor other than exposure to television that influenced aggression (Felson, 1996).

In July of the year 2000, based on the findings of over 1,000 studies, the American Psychological Association and five other professional societies produced a joint statement claiming that evidence “point[s] overwhelmingly to a causal connection between media violence and aggressive behavior in some children” (*Joint Statement*, 2000, p. 1, as cited in Bushman & Anderson, 2001). It is important to note that, while the findings of these studies are significant, the average effect size is actually quite small. This does not dispute the results, however, but merely indicates that exposure to media violence is usually not a sufficient cause of aggression on its own (Bushman & Anderson, 2001). In a publication by Bushman and Anderson, exposure to violent media is

explained as analogous to smoking. Smoking one cigarette is not enough to cause cancer, and not everyone who smokes will develop cancer. However, smoking is still recognized as having dangerous effects. Likewise, repeated exposure to violent media can have a negative effect on certain individuals (2001). In addition, evidence for the effect of violent media on aggression is becoming stronger, as newer studies show larger effect sizes with smaller confidence intervals (Bushman & Anderson, 2001). Similarly, research has shown that playing violent video games leads to increased aggressive behaviors and cognitions (Anderson & Bushman, 2001).

General Learning Model. Before discussing the specific findings of video game research, it is important to review the General Learning Model (GLM), which was created to explain how video games teach and influence behavior (Buckley & Anderson, 2006). According to the GLM, an individual's behavior is based on two types of input variables: personal and situational. Personal variables include individual differences which can be related to one's ability to learn in general (e.g., age, income, self-esteem), one's history of media exposure, and one's susceptibility to the effects of violent video games. In contrast, situational variables are the features of the environment around the individual. The most important of these situational variables concern the game itself, such as whether the content of the game is violent or non-violent (Buckley & Anderson, 2006). Together, these variables interact to influence a person's cognition, affect, and arousal.

Through the cognitive route, input variables make different cognitive constructs more accessible. By increasing accessibility, the input variables can influence different cognitive variables such as thoughts, beliefs, attitudes, and behavioral scripts (Buckley & Anderson, 2006). Through the affective route, input variables can influence a person's

mood and emotions, which can then lead to behavior. Processes in this route include the mere-exposure effect, through which repeated exposure makes an object more attractive, to a point, and systematic desensitization, which can lead to reduced fear in response to a dangerous stimulus (Buckley & Anderson, 2006). Lastly, the level of arousal generated by the input variables can have a strong impact on learning. If material has already been learned well, then increased arousal is less likely to inhibit the retrieval of that information. However, if the material is not learned well, then increased arousal is likely to interfere with the learning and use of that information (Buckley & Anderson, 2006). As a result of these processes, playing video games can result in the learning of facts, the learning of specific behaviors, and even changes in personality (Buckley & Anderson, 2006). Additionally, because the model represents a cyclical process, the GLM can be used to study both the short-term and long-term effects of video-game exposure (Buckley & Anderson, 2006).

Violence and Video Games. For the purpose of this thesis, a “video game” will be defined as any interactive activity that is mediated by a computer interface and through which a player’s actions influence different outcomes (Passmore & Holder, 2014). Combining this with the given definition for violent media, a “violent video game” is any video game in which the player can harm other characters (Cicchirillo & Chory-Assad, 2005). Through several studies, research has shown that participants who play these violent video games are more likely to exhibit aggressive behaviors than participants who play non-violent video games (Anderson & Bushman, 2001; Anderson et al., 2004, Cicchirillo & Chory-Assad, 2005). In addition, violent video games have been shown to increase the accessibility of aggressive thoughts (Anderson & Bushman,

2001; Anderson et al., 2004). Consistent with the General Learning Model, this provides evidence that the relationship between violent video games and aggressive behavior is mediated by the presence of aggressive cognitions (Anderson et al., 2004).

Prosocial Behavior

While many researchers have focused on the negative effects of media, especially in regards to violence and aggression, there is also a large section of the literature which investigates media's positive effects. For example, there is evidence that watching television can lead several psychological benefits (Tsay-Vogel & Krakowiak, 2016). These include increased feelings of enjoyment (Nabi et al., 2003; Papacharissi & Mendelson, 2007) and gratification (Oliver & Bartsch, 2010) as well as elevated positive affect and decreased negative affect (Zillman & Bryant, 1994). Additionally, meaningful portrayals in media have been shown to cause moments of introspection and inspiration, which can then motivate audience members to embrace moral virtues (Oliver, 2008; Oliver et al., 2012). Of the many potential positive effects that media can have, this thesis is most interest in how media might influence one's prosocial behaviors.

In contrast to violence and aggression, prosocial behavior can be defined as voluntary actions intended to benefit others (Eisenberg & Fabes, 1990); prosocial behavior can also refer to acts that are "generally beneficial" to other people (Vieira, 2014). Similar to how research on violent video games was proceeded by decades of literature regarding the effects of violent media in general, there exists a history of research that investigated media as a prosocial influence. During this period, several studies found that children who watched television shows that displayed prosocial and socially desirable content tended to act more helpfully towards their peers than did

children who watched shows with neutral or violent content (Collins & Getz, 1976; Donagher et al., 1976; Sprafkin et al., 1975; Sprafkin & Rubinstein, 1979). Just like the research on violent media and aggression, these effects of prosocial media on prosocial behavior have repeatedly been supported by further investigations. Studies have since shown that these prosocial effects occur amongst both children and adults (Anderson, et al., 2000; Rosenkoetter, 1999) and that frequent viewing of media with prosocial content can result in long-lasting increases in prosocial behavior (Anderson, et al., 2000). Even television shows that were not designed to convey moral lessons, such as reality television, can lead to increased altruism when prosocial behaviors or positive lifestyle changes occur (Tsay-Vogel & Krakowiak, 2016).

Prosocial Behavior and Video Games. Reacting to the field's focus on violence and aggression, several researchers argued that video games were being portrayed in an unrepresentatively negative manner. In response, these researchers began to study the positive effects and potential benefits of playing video games (Passmore & Holder, 2014). This research does not attempt to refute the finding that playing violent video games leads to increased aggression, but rather argues that the content of a video game should determine what effects it might have. While most video games cannot be easily assigned into categories (Passmore & Holder, 2014), for this study, games will be considered as having violent, neutral, or prosocial content. As discussed earlier, violent video games allow the player to harm other characters. In contrast, prosocial behavior is defined as voluntary actions intended to benefit others (Eisenberg & Fabes, 1990). Since the actions one take in a game are not always optional, a "prosocial video game" will be defined as any video game in which the player performs actions that are beneficial to

other characters. For clarity, this definition will be refined to exclude any games in which you help one character by hurting another. A “neutral video game”, then, shall refer to any video game in which the player neither harms nor benefits another character.

Similar to studies which examined the effect of watching prosocial television content, research has consistently shown that playing prosocial video games leads to increased prosocial behavior (Passmore & Holder, 2014). In one example, children who played a game with prosocial content were more likely to exhibit helping (prosocial) behavior than children who played a violent or neutral game. In this case, the prosocial behavior consisted of choosing easier puzzles for the child’s partner to complete (Saleem et al, 2012). In addition, prosocial games were shown to decrease the presence of aggressive behaviors (Passmore & Holder, 2014).

There is also evidence that playing prosocial games leads to increased prosocial cognitions and decreased aggressive cognitions (Greitemeyer & Osswald, 2011; Passmore & Holder, 2014). Much like how aggressive cognitions were shown to mediate the relationship between violent video games and aggressive behavior, these increased prosocial and decreased aggressive cognitions most likely mediate the relationships between prosocial video games and prosocial and aggressive behavior respectively (Passmore & Holder, 2014). Other research has shown that mood may also mediate these relationships, as playing prosocial videos game puts participants in a good mood, and those in a good mood displayed more prosocial behavior (Whitaker & Bushman, 2012). As a whole, this body of research shows that, in general, video games have an effect on the player, but these effects are dependent on the content of the game.

Effects of Cooperative Play. As discussed above, the content of a video game helps to determine what effects that game might have upon a player. However, it is not the only situational factor that influences a video game's effects. In fact, the context in which a game is played may actually be more consequential than the content (Passmore & Holder, 2014). While many video games still include a traditional single-player experience, advances in internet speed and the establishment of online gaming services have allowed more players to join other individuals in both cooperative and competitive gaming experiences. Since this thesis focuses on the relationship between players, it will only examine the two multi-player contexts: cooperative and competitive play.

By examining the literature, one can find several definitions for both competition and cooperation. For example, one study defines competition as “a zero-sum game in which one person wins and the other loses” (Fisher & Grégoire, 2006, p. 314), while another describes a competitive situation as one where “people attain their goals only when other participants do not” (Eastin, 2007, p. 452). In comparison, cooperation is described as: “when people work together to achieve a mutually satisfying outcome”, “behavior that maximizes the outcome of a collective”, and a situation in which “individuals only attain their goals when other participants also obtain their goals” (Fisher & Grégoire, 2006, p. 313; Ewoldsen et al., 2012, p. 227; Eastin, 2007, p. 452). Drawing from these definitions, “cooperative play” will refer to when players actively work together to achieve a mutual goal. Conversely, “competitive play” refers to when players actively work against each other to achieve directly conflicting goals.

In general, research shows a positive relationship between competition and aggression (Eastin, 2007). One possible explanation for this is that competitors

continually interfere with each other when attempting to accomplish their goals. Since frustration has been shown to lead to increased levels of aggression, the frustration that results from this constant interference should have a similar effect (Eastin, 2007). In contrast, individuals should experience less frustration when working cooperatively, resulting in decreased aggression (Eastin, 2007). Research into video games supports this assumption, as games played in a cooperative context were shown to lead to lower levels of aggression than when played in a competitive or solitary context (Jerabeck & Ferguson, 2013; Passmore & Holder, 2014). In addition, cooperative gameplay has been shown to both increase prosocial behavior and prime further cooperative behavior, even when the content of the video game was violent (Ewoldsen et al., 2012; Passmore & Holder, 2014). This provides evidence that the context in which a video game is played can neutralize or even reverse the effect of the game's content. It should be noted, however, that these prosocial effects might only exist when cooperation occurs between two individuals or within small groups. As group size increases, group members may experience greater disagreement about how to pursue their goals, leading to increased feelings of frustration (Eastin, 2007).

While the effects of cooperative play can be explained by a lack of frustration, this only works in direct comparison to the effects of playing in a competitive context. Alternatively, there are several other possible explanations. First, acting cooperatively may lead to increased discussion between group members, both in general and in regards to pursuing their shared goals. This type of increased discussion has been shown to enhance feelings of group identity and activate social norms (Komorita & Parks, 1995). These social norms might then promote prosocial behavior between group members.

Additionally, people tend to be more satisfied with decisions made in a cooperative setting than in a competitive one (Fisher & Grégoire, 2006). This increased decision satisfaction may serve as an incentive that encourages further cooperative behavior. It should also be noted that cooperative behavior and prosocial behavior may not be conceptually distinct, especially since cooperation benefits other group members by helping them achieve their goals. Because of this, this thesis will consider cooperative behavior as a specific type of prosocial behavior. Thus, any explanation for changes in prosocial behavior in general should also explain changes in cooperative behavior, although the reverse may be true.

Identification. While the relationships between the concepts discussed in this thesis would ideally be tested through the direct interaction of two individuals, the ethical and safety concerns created by the emergence of COVID-19 have made in-person laboratory sessions impractical. However, by adjusting this study to be conducted entirely online, this thesis was able to investigate another aspect of new media: the influence of online video content. Rather than playing a video game themselves, participants in this study will be required to watch prerecorded footage of two other individuals playing a video game together. As such, the effects of this study will likely be dependent on participants' ability to identify with the players in the video.

Identification can be defined as “an imaginative process through which an audience member assumes the identity, goals, and perspective of a character” (Cohen, 2001, p. 261), although identification occurs both with real people and characters in media. Through identification, an individual loses their sense of self and adopts the identity of another, experiencing the world through someone else's point of view. This

process is an important part of development, as it allows children and adolescents to try new ideas, attitudes, and identities that they might not otherwise be able to experience (Cohen, 2001). In media studies, identification with a character has been associated with feelings of affinity, friendship, similarity, and liking, although it is unclear whether these feelings are a result of identification or necessary for it to occur. Additionally, individuals who more highly identify with a media character are thought to experience increased persuasive and imitative effects of the media (Cohen, 2001).

In regards to video games specifically, research has shown that identification does occur, especially when the player is assigned to play as a specific character in a narrative context (Klimmt et al., 2010). However, this study is less concerned about whether a participant can identify with the character in a gameplay video than with the player. According to recent research, adolescents are spending more time watching online, live-streaming content than traditional cable (Hu et al., 2017). For gaming content, this viewership is primarily motivated by an individual's desire for entertainment, social interaction, and to develop new gaming skills and techniques through observational learning (Lim et al., 2020). Unlike playing a video game directly, viewers must learn these skills via vicarious experience through the streamer. Eventually, this motivation to be able to play a video game as well as a streamer can develop into a form of wishful identification (Lim et al., 2020), a process through which "an individual desires to attempt to become like another person" (Hoffner & Buchanan, 2005, p. 327). The desire to be or act like another person is directly related to identification, as fans are more likely to emulate celebrities such as YouTubers when they have strong feeling of identification with them (Tolbert & Drogos, 2019). As such, it is clear that individuals are not only able

to identify with a video game character but also with someone else who is controlling said character. If participants in this study are able to identify with the players in the prerecorded footage, then the study should be able to achieve results similar to as if the participants were playing the game themselves.

Hypotheses. In terms of gaming context, playing a video game competitively was positively associated with aggression (Eastin, 2007), while cooperative video game play was negatively associated with aggression (Jerabeck & Ferguson, 2013; Passmore & Holder, 2014) and positively associated with prosocial behavior (Passmore & Holder, 2014). Assuming that watching prerecorded video game footage leads to similar results as actually playing the game oneself through identification, then participants who watch a video game being played cooperatively should experience lower levels of aggression than those who watch the same game being played competitively (H1). Similarly, those who watch a game being played cooperatively should be more likely to exhibit prosocial behaviors than those who watch it being played competitively (H2).

H1: Participants who watch a video game being played cooperatively will experience lower average state hostility than individuals who watch a video game being played competitively.

H2: Participants who watch a video game being played cooperatively will make more prosocial choices, on average, than individuals who watch a video game being played competitively.

Prosocial Tendencies. Aside from the effects of media, individuals have their own personal tendencies that influence what prosocial behaviors they might engage in

and in which situation (Carlo et al., 2003). While this study is focused on prosocial actions in general, previous research has indicated that prosocial behaviors can be divided into six separate categories: altruistic, compliant, emotional, public, anonymous, and dire (Carlo & Randall, 2002). Altruistic prosocial behaviors involve voluntary helping due to concern for the needs and welfare of others. These behaviors are often the result of sympathy or internalized social norms and principles. In comparison, compliant prosocial behaviors are those done directly in response to a request for help. These behaviors are more closely associated to one's approval-orientation than they are to sympathy (Carlo & Randall, 2002). Emotional behaviors are ones performed during situations that are highly emotionally charged, such as in response to a crying child. Depending on the situation, some individuals might be overcome by feelings of distress, while others will react with sympathy and a desire to help. Public prosocial behaviors occur in front of an audience, and are often motivated by a desire to earn the approval and respect of others, while anonymous behaviors are helping actions taken when the helper can remain unknown. Lastly, dire prosocial behaviors are ones performed in response to crisis or emergency situations (Carlo & Randall, 2002). It is important that preexisting tendencies for each of these types of behavior be accounted for when determining how exposure to certain media might influence future prosocial actions.

Relationship Effects

While research has shown the influence that the content and context of video game play has on one's behavior, it has not examined how these factors might affect the interpersonal relationships that exist between individuals who engage in competitive or cooperative play. Since this area of research is lacking, this thesis will continue by

discussing the effects that aggressive and prosocial behavior have on interpersonal relationships. Then, it will examine how competitive and cooperative approaches to conflicts within a relationship influence feelings of relationship satisfaction, commitment, and closeness.

Physical Violence and Verbal Aggression. Unsurprisingly, the presence of physical violence in a relationship is associated with decreased relationship quality and marriage satisfaction (Sabourin et al, 1993). When discussing aggression within a relationship, however, it is important to distinguish between physical violence and verbal aggression. Verbal aggression is defined as a destructive form of communication that involves attacking another person's self-concept in an attempt to cause psychological pain (Infante & Wigley, 1986). These attacks can include insults, ridicule, and profanity and often result in hurt feelings, anger, irritation, and embarrassment. Repeated verbal aggression can also lead to the deterioration and eventual destruction of relationships (Infante & Wigley, 1986). While physical violence is easier to identify, it is important to look at verbal aggression as well, as it can be predictive of future violence (Infante & Wigley, 1986; Sabourin et al., 1993). For example, individuals who are high in verbal aggressiveness are more likely to be abusive in their marriages (Sabourin et al, 1993) and use corporal punishment to discipline their children (Kassing et al., 2000). As such, both verbal and physical aggression should result in decreased ratings of relationship quality.

Prosocial Behavior and Mood. When looking at the connection between prosocial behavior and interpersonal relationships, studies have found evidence for several positive effects. For example, individuals who display prosocial behavior tend to be more popular and more well-liked by their peers (Layous et al., 2012), and are seen as

more attractive in romantic relationships (Stavrova & Ehlebracht, 2015). However, most research on prosocial behavior does not examine its influence on interpersonal relationships. Instead, a majority of studies have looked at the association between prosocial behavior and one's mood or affect. As such, this thesis will discuss the potential mediating influence of mood on the relationship between prosocial behavior and relationship quality.

For the purpose of discussion, mood and affect will refer to a more general, cognitive state which can have either a positive or negative valence, while an emotion is a specific cognitive response to a situation or set of stimuli (Fredrickson, 2001). However, it should be noted that positive and negative affect are two discreet factors. Positive affect indicates an individual's level of enthusiasm, activity, and alertness. High positive affect reflects a state of high energy, concentration, and pleasurable engagement, while low positive affect is a state of lethargy and sadness (Watson et al., 1988). Negative affect, in comparison, is a dimension of distress and unpleasurable engagement. High negative affect can indicate a variety of negative moods, including anger, contempt, disgust, guilt, fear, and nervousness, while low negative affect involves a state of calmness (Watson et al., 1988). Because affect is considered present within emotions (Fredrickson, 2001), one's emotions will be considered as reflective of their more general affective state.

Over the past two decades, research has consistently shown that acting in a kind and prosocial manner leads to increased happiness for not only the target of the behavior but for the individual actor as well (Chancellor et al., 2018; Dunn et al., 2008; Nelson et al., 2016). In addition, there is evidence that these prosocial behaviors lead to a greater increase in an individual's affect than do self-centered ones (Dunn et al., 2008; Nelson et

al., 2016). For example, individuals who spent a larger percentage of their income on prosocial expenses, such as gifts and charitable donations, reported being significantly happier than those who instead used that income for personal spending. This same study showed that prosocial spending is the only form of spending that predicts increased happiness at a later point in time (Dunn et al., 2008). In other words, spending money on others is predictive of a more positive affect, while spending money on oneself is not.

Prosocial behavior has also been shown to lead to further prosocial behavior in two distinct but complementary ways. First, the recipient of a prosocial action may be more motivated to “pay it forward” (Chancellor et al., 2018). In this way, one’s prosocial behavior can lead to further prosocial behavior in others. Second, there is evidence of a reciprocal relationship between prosocial behavior and positive affect (Snippe et al., 2018). Not only does prosocial behavior lead to increased positive affect, but positive affect can also lead to further prosocial behavior. This reciprocal relationship can result in an “upward spiral” in which prosocial behavior leads to further prosocial behavior due to one’s continually rising positive mood (Fredrickson, 2001; Nelson et al., 2016). Through these two processes, prosocial behavior may spread through one’s social network as others are inspired to pay it forward and are rewarded by their own prosocial actions (Nelson et al., 2016). There is also evidence that these changes may be long lasting, as repeated prosocial behavior can lead to a stable, long-term increase in one’s affective set point (Lyubomirsky et al., 2005).

While prosocial behavior has been shown to influence one’s mood, mood and emotions have been shown to have an effect on measures of relationship quality. For instance, research has found that positive emotions, such as happiness, lead to increased

feelings of trust in interpersonal encounters, while negative emotions, such as sadness and anger, lead to decreased trust (Dunn & Schweitzer, 2005). This is important because trust is significantly and positively correlated with relationship satisfaction in both men and women (Fitzpatrick & Lafontaine, 2017). It should be noted, however, that this association between emotion and trust is less strong for pre-existing relationships (Dunn & Schweitzer, 2005). Mood has also been shown to influence relationship satisfaction by partially mediating the effect of neuroticism (Abbasi et al., 2018). Research supports the claim that increases in neuroticism correspond to decreases in relationship satisfaction, and that negative affect is partially responsible. Interestingly, those high in neuroticism have also been shown to experience greater increases in positive mood after engaging in prosocial behavior than do those who are low in neuroticism, but the effect fades more quickly (Snippe et al., 2018). More generally, there is evidence that increases in positive affect can lead to greater levels of marital satisfaction (Bradley & Hojjat, 2017).

There is also research that argues that positive affect inhibits the use of destructive interpersonal behavior during conflicts (McCullough et al., 2001). As discussed previously, one such form of destructive behavior is verbal aggression. In relation to mood, a study by Aloia and Solomon found that the presence of negative emotions, especially anger, increases the likelihood that verbal aggression will be used (2016). Utilizing these results, the authors argue that minimizing anger can prevent verbal aggression, while also reducing aggressive behavior in general. In addition, when manipulated to experience a positive mood, participants reported greater feelings of liking for a confederate with whom they were in conflict (McCullough et al., 2001). The participants also indicated that they would be more likely to use collaboration to resolve

conflicts in the future. Based on these studies, it is clear that positive mood not only leads to greater feelings of satisfaction in a relationship, but also reduces the use of behaviors that can negatively impact a relationship. Furthermore, research shows that engaging in prosocial behavior can result in greater positive affect. Because of this, this thesis argues that prosocial behavior is predictive of increased relationship quality through the mediating influence of positive mood.

Cooperation in Interpersonal Relationships. In order to see how competition and cooperation influence interpersonal relationships, one can look at the type of goals that the individuals within a relationship pursue. According to Crocker, Canevello, and Lewis, an individual can either pursue benevolent goals, such as being constructive and supportive of one's partner, or selfish goals, which are focused on one's own interests (2017). When pursuing selfish goals, individuals tend to have zero-sum beliefs about their relationship. That is, when conflict occurs in a relationship, they believe that one partner can only get what they want at the expense of the other (Crocker et al., 2017). These individuals can be seen as approaching conflict with a competitive mindset, as competition can be defined as a zero-sum situation in which people obtain their goals only when others do not (Eastin, 2007; Fisher & Grégoire, 2006). In contrast, those who pursue benevolent goals seem to adopt a cooperative style when faced with an inter-relational conflict. Individuals who pursue benevolent goals view relationships as nonzero-sum and believe that it is possible to resolve conflict in ways where both partners get what they need (Crocker et al., 2017).

In one study, benevolent goals were shown to predict increases in relationship satisfaction, commitment, and closeness through increased nonzero-sum beliefs.

Additionally, nonzero-sum beliefs were shown to be correlated with increased feelings of security and loyalty within a relationship, as well as with decreased feelings of relationship anxiety and avoidance (Crocker et al., 2017). Thus, if working cooperatively is truly analogous to pursuing benevolent goals, then individuals should experience the same positive effects on relationship quality after a cooperative experience.

It should be noted that many of the studies discussed focus on romantic relationships. However, this thesis does not attempt to limit itself to one type of interpersonal relationship. While video games can be played with a romantic partner, they can also be played with family members, friends, and even strangers. Because of this, relationship type will be accounted for so that predictions made by this study can be generalized across all types of pre-existing relationships. In addition, because cooperation within large groups may lead to disagreement and frustration (Eastin, 2007), the size of the cooperative unit should be kept as small as possible to increase the likelihood of prosocial effects. As such, this thesis shall make predictions in regards to how the context in which a video game is played affects the interpersonal relationship between two individuals.

Hypotheses. To predict how the context in which a video game is played affects the relationship between members of a gaming dyad, the body of research concerning video game effects must be synthesized with literature that examines how relationships are influenced by aggressive and prosocial behaviors. There is research that suggests mood might mediate the effect that the context in which a game is played has on prosocial behavior. Playing prosocial video games has been shown to lead to increased positive mood in participants, and those in a good mood displayed more prosocial

behaviors (Whitaker & Bushman, 2012). Similarly, one's affect should be related the effect that watching a game being played cooperatively or competitively has on prosocial behavior (H3A, H3B). This is further supported by evidence that there is a reciprocal relationship between mood and prosocial behavior in general, with increased mood leading to more prosocial behavior, which then increases one's mood even further (Snippe et al., 2018). Based on this relationship, it should be expected that a situation that leads to increased prosocial behavior should also lead to increased positive affect (H4A) and decreased negative affect (H4B).

H3: A. Positive affect will positively and significantly co-vary with the number of prosocial choices made.

B. Negative affect will negatively and significantly co-vary with the number of prosocial choices made.

H4: A. Participants who watch a video game being played cooperatively will experience a greater average increase in positive affect than individuals who watch a video game being played competitively.

B. Participants who watch a video game being played cooperatively will a greater average decrease in negative affect than individuals who watch a video game being played competitively.

In addition, increased positive emotions have been shown to lead to improved social relationships (Abbasi et al., 2018; Bradley & Hojjat, 2017; Dunn & Schweitzer, 2006). As such, if watching a video game being played cooperatively results in higher average positive mood, then individuals who watch the cooperative gameplay recording

should report greater relationship quality than those who watch the game being played competitively (H5). This prediction is further supported by more direct evidence that engaging in relationship-focused prosocial behaviors (e.g., pursuing benevolent goals) can lead to increased feelings of relationship satisfaction, commitment, and closeness (Crocker et al., 2017). The research regarding emotions also suggests that affect should be related to the effect that watching a game being played cooperatively or competitively has on relationship quality (H6A, H6B).

H5: Participants who watch a video game being played cooperatively will report a greater average increase in relationship quality than participants who watch the same game being played competitively.

H6: A. Positive affect will positively and significantly co-vary with the change in perceived relationship quality.

B. Negative affect will negatively and significantly co-vary with the change in perceived relationship quality.

Relational Maintenance. It is also likely that playing video games together can influence the relationship between two people independent of the effects of content and context. One way that this may occur is through the use of video game play as a form of relational maintenance. Relational maintenance can be defined as any behavior that serves to continue and develop a relationship (Ledbetter & Kuzenkoff, 2012). These behaviors can be classified into two broad categories: routine and strategic (Ogolsky & Bowers, 2012). Routine behaviors are ones that consist of everyday interactions and usually occur without the intent of relational maintenance. In contrast, strategic behaviors

are done with the “explicit intent” of maintaining a relationship (Ogolsky & Bowers, 2012). Both types of relational maintenance behaviors have been found to strongly predict factors such as commitment, satisfaction, stability, and liking in interpersonal relationships (Canary & Yum, 2015). Regarding video games specifically, there is evidence that online video game play is positively associated with relational closeness by serving as a form of relational maintenance (Ledbetter & Kuzenkoff, 2012). Because of this, it is important to consider how video game play’s role as a relational maintenance behavior might co-vary with relationship quality, as well as with the other dependent variables included in this study.

Demographics

There is also evidence that demographic factors such as sex and age might influence the dependent variables being investigated by this thesis. For example, research has found that males tend to be more physically and, to a lesser extent, verbally aggressive than females (Archer, 2004). However, males and females experience equivalent increases in aggression after exposure to the same violent media (Plante et al., 2020). Age has also been shown to be significantly associated with aggression. While high levels of aggression during childhood are predictive of aggression as an adult, people do tend to become less aggressive as they age (Lee et al., 2007). Additionally, there is a theoretical argument that adults should be less susceptible to the effects of violent media due to increased impulse control and an understanding of social norms related to aggression (Plante et al., 2020). Few studies have tested this hypothesis, however, and those that have generally fail to find that younger participants are more effected by violent media than older ones (Anderson et al, 2007; Anderson et al., 2010).

There is also evidence that sex and age are both significantly related to prosocial behavior. Men have consistently been found to report lower levels of prosocial behavior than women (Van der Graff et al., 2018), and women are more likely to pursue compassionate goals in their relationships (Crocker & Canavello, 2008). Furthermore, males and females differ in their prosocial tendencies. Females are more likely than males to act prosocially out of altruism or in response to highly emotional situations, while males are more likely to engage in public prosocial behaviors (Carlo et al., 2003). As for age, research has found that prosocial behavior tends to increase as individuals get older (Van Lange et al., 1997). In addition, older age is positively correlated with the frequency of altruistic and anonymous prosocial behaviors (Carlo et al., 2003).

In regards to affect, women tend to report higher levels of negative affect than men, especially for sadness and anxiety (Thomsen et al., 2005). Some research argues that this is because women are more likely to ruminate on their negative mood, causing it to worsen (Thomsen et al., 2005). In contrast, there is no clear evidence that males and females significantly differ in their levels of positive affect (Batz & Tay, 2018). As individuals age, they tend to report higher levels of positive affect (Burr et al., 2020) and lower levels of negative affect (Thomsen et al., 2005). Additionally, research has shown that individuals become more emotionally stable as they age (Burr et al., 2020). This relationship between age and affect may be because older individuals have learned to maximize their positive emotions while minimizing negative ones (Thomsen, et al., 2005).

Lastly, research suggests that sex and age have a significant influence on perceived relationship quality. While several studies have found that women report lower

marital satisfaction than men, a meta-analysis of the existing literature has found no significant sex differences for marital satisfaction (Jackson et al., 2014). However, research has also shown a significant difference between males and females in their more general ratings of relationship satisfaction, with women reporting higher intimacy (i.e., closeness) than men for both romantic partners and best friends (Pearce et al., 2021). Furthermore, there is evidence that females care more about maintaining their relationships than males. This was demonstrated by a series of studies that showed that, when compared to men, women are less likely to lose trust and more likely to regain trust in an individual after that trust is violated (Haselhuhn et al., 2015). These results might also indicate that females' perceptions of relationship quality are more resistant to change than those of males. As for age, research has shown that older adolescents reported higher feelings of closeness in their romantic relationships than did younger adolescents (Adams et al., 2001). The effect of age on romantic relationship quality is less clear for adults, though, since research on this association has been limited (Sorokowski et al., 2017). More generally, older adults tend to experience more satisfying and positive social relationships than younger adults (Luong et al., 2010). As such, the existing literature suggests that ratings of relationship quality should be positively associated with age. Based on the research reviewed, it is clear that both sex and age are significantly related to the five dependent variables being investigated by this study. Because of this, it is important to consider these demographic factors as potential covariates when testing the proposed hypotheses.

Personality

One factor which might also influence the effects of viewing competitive and cooperative video game play is personality. According to the five-factor model of personality (FFM), it is possible to explain an individual's personality through five distinct dimensions (McCrae & Costa, 1997), also known as the "Big Five" (Digman, 1990). These are: extraversion, neuroticism, openness to experience, agreeableness, and conscientiousness (Grice, 2019; McCrae & Costa, 1997). Extraversion, also known as surgency, is associated with being assertive, sociable, and energetic (Digman, 1990). The second dimension, neuroticism, indicates an individual's level of emotional instability, with those high in neuroticism displaying irritable and moody behavior. Openness to experience, or just openness, signifies one's acceptance of feelings and new ideas and their flexibility of thought (Digman, 1990). Additionally, openness is related to inquisitiveness, thoughtfulness, and a preference for intellectual challenges, leading some scholars to refer to this dimension as "intellect" (Grice, 2019). The fourth dimension, agreeableness, is associated with altruism, caring, empathy, sympathy, and kind behavior (Digman, 1990; Grice, 2019). In contrast, those who are low in agreeableness tend to be hostile, self-centered, spiteful, and jealous of others (Digman, 1990). Finally, conscientiousness refers to one's sense of responsibility and duty as well as their foresight (Grice, 2019), and has also been linked to academic achievement and one's will to achieve (Digman, 1990).

Connecting this to the present research, personality scholars have used the FFM to study how each dimension is related to competitive and cooperative behavior. For example, there is evidence that agreeableness is positively correlated with

cooperativeness (LePine & Van Dyne, 2001). In one study, it was concluded that those high in agreeableness have a stronger sense of community because they are more willing to act positively and cooperatively with others to create a sense of belonging (Lownsbury et al., 2003). In another instance, women who scored low in agreeableness were found to be significantly more likely to act competitively with other women (Buunk, Bucksath & Cordero, 2017). Together, these studies support the argument that agreeableness is positively associated with cooperation, while at the same time suggesting that agreeableness is negatively associated with competition. In other words, as one scores higher in agreeableness, they should be more likely to act cooperatively and less likely to act competitively. This is further supported by research that claims that traits associated with agreeableness correlate with prosocial behaviors in general (Penner et al, 2004). More specifically, both altruism (Haesevoets et al., 2018) and empathy (Yamamoto & Takimoto, 2012) have been shown to be positive predictors of cooperative behavior themselves, although the relationship between empathy and cooperation may depend on contextual factors (Sautter et al., 2007).

Another dimension of personality that may be predictive of cooperative behavior is openness. One study found that participants who were high in openness were more likely to act cooperatively in repeated Prisoner's Dilemma scenarios (Al-Ubaydli et al., 2014). This may be due to openness's association with flexibility of thought and openness to new ideas, allowing participants to think past purely competitive strategies. However, of the Big Five personality dimensions, the relationships between openness and competitive and cooperative behavior seem to have been studied the least. Because of

this, more evidence should be collected before strongly asserting the presence or direction of any such relationship.

During the same study, it was also found that lower neuroticism and lower conscientiousness are predictive of cooperative behavior. This latter relationship is supported by a study on student athletes, which found that athletes in individual sports scored higher in conscientiousness than those engaged in team-based sports (Madic et al., 2015). However, this study identified only the relationship rather than trying to be predictive. As such, the authors discuss how athletes in individual sports must show greater discipline and are held more accountable than those on a team. This makes it unclear whether those high in conscientiousness chose individual sports over cooperative ones because of a sense of individual responsibility, or if their sense of responsibility was developed due to the pressures of individual competition. To further complicate matters, a different study found that cooperative behavior was predicted by high conscientiousness (LePine & Van Dyne, 2001). As such, it is uncertain at the moment of writing as to the true nature of the relationship between conscientiousness and cooperation.

As for neuroticism, the findings regarding this dimension are much less mixed. While individuals classified as “hypercompetitive” tend to be highly neurotic (Ryckman et al., 2009), and there is some evidence that high neuroticism is predictive of competition between members of the same sex, especially during “mating” scenarios (Buunk et al, 2017), a vast majority of the literature has shown an inverse relationship between neuroticism and competitive behavior. In fact, a large body of research suggests that neuroticism is associated with competition avoidance (Al-Ubaydli, 2016; Kirkcaldy

& Furnham, 1991; Müller & Schwieren, 2012; Ryckman et al., 2009). For example, women high in neuroticism tend to avoid competitive sports and activities (Kirkcaldy & Furnham, 1991) and tend to perform worse when they do actually compete (Müller & Schwieren, 2012). Additionally, those high in neuroticism who do engage in competitive sports are significantly more likely to play team sports rather than individual ones (Madic et al., 2015). Because neuroticism is associated with anxiety, insecurity, emotional instability, and susceptibility to stress, it is possible that individuals who are high in neuroticism stay out of competitive settings to avoid increased levels of these negative feelings, especially stress (Müller & Schwieren, 2012). Or, to word it differently, those high in neuroticism may not have the emotional stability necessary to deal with the stress of competition (Kirkcaldy & Furnham, 1991). This is further supported by Bouchard, who found that those high in neuroticism tend to use more avoidant and distancing tactics when in conflict with a romantic partner (2003). It is also important to note that many of these studies only focused on competition avoidance in women. While this may be because women score significantly higher in neuroticism than men (Müller & Schwieren, 2012), other potential explanations due to gender differences should be considered.

Lastly, extroversion has been linked to both cooperative and competitive behaviors. In athletics, those who are more extroverted tend to engage in team sports, while those who are more introverted prefer individual-oriented activities. This is most likely because group participation helps satisfy an extrovert's desire for interpersonal interactions (Kirkcaldy & Furnham, 1990). However, athletes tend to be more extroverted than non-athletes in general (Madic et al., 2015). In addition, while cooperation is necessary for team-based athletics, the individuals involved must also act competitively

against their opponents. This leads to a pair of potential conclusions. Firstly, extroversion may be predictive of both cooperative and competitive behavior, as introverts might prefer to avoid situations in which interpersonal conflict can occur. The other possible explanation is that these studies (Kirkcaldy & Furnham, 1990; Madic et al., 2015) only show that extraversion is a predictor of engagement in athletics in general, with some influence on the type of athletics an individual chooses. Because of this possibility, it is important to look at research that focuses on non-athletic situations. In one such study, which used a repeated prisoner's dilemma scenario, it was found that there is no relationship between extraversion and cooperative behavior (Al-Ubaydli et al., 2016). Conflicting with this, however, is another study that focused on cooperative behavior in groups. In this study, the researchers provide evidence that extroversion is positively associated with cooperative behaviors (LePine & Van Dyne, 2001). As such, extraversion may only be predictive of cooperative behavior in a group setting, rather than when an individual is engaged in a dyadic interaction.

Unfortunately, while agreeableness and neuroticism both seem to have a clear association with competitive and cooperative behaviors, the other three of the Big Five personality dimensions lack the evidence necessary to make a strong claim one way or the other. In the case of openness, there appears to be a positive relationship with cooperation. However, the lack of research into this dimension makes it hard to assert the existence of this relationship with any sort of certainty. As for conscientiousness and extroversion, the literature provides conflicting findings. This may be due to a lack of research using the five-factor model of personality in the field of communication. While other fields have made use of the FFM, the trend among communication scholars has

been to examine individual variables of personality rather than using integrative models (Knapp & Daly, 2011). Because of this, the current literature review has relied mainly on the work of personality scholars and sports psychologists. Still, it is important to consider how the Big Five factors of personality might co-vary with the dependent variables being investigated by this research (R1).

R1: How might the Big Five factors of personality co-vary with state hostility, prosocial score, positive and negative affect change, and changes in perceived relationship quality?

In order to investigate the effect of viewing cooperative and competitive play of violent video games on the relationship between two individuals, this study will focus on five dependent variables: state hostility, prosocial score, positive affect change, negative affect change, and change in perceived relationship quality. In addition, this thesis will examine how the Big Five factors of personality and other individual differences might be related these dependent variables. The following section explains in detail the procedure for testing the hypotheses and research question listed previously, as well as the measures and scales used.

CHAPTER III

METHODS

In order to test the proposed hypotheses, an experiment was conducted that compared two groups of participants exposed to two levels (competitive or cooperative) of a single factor (gaming context). This study received IRB approval, and data collection took place between October and December of 2020. The following sections explain who participated in this experiment, what procedures were followed, and what scales and measures were used.

All participants completed this study using their own personal electronic devices, and both questionnaires were created and administered using SurveyMonkey. Random assignment to conditions was done using the simple random method available on SurveyMonkey.

Participants

Participants recruited for this study consisted of students from an urban, Midwestern university who were enrolled in at least one communication course. The students were asked to participate through email and in-class announcements, and were offered compensation in the form of extra credit for one communication course of their

choice. Participants who completed the study were also entered into a drawing to win a \$100 Amazon gift card or one of two \$50 Amazon gift cards.

A total of 51 participants completed this study. However, 3 participants were removed for indicating a major event within their relationship which may have resulted in changes to the dependent variables that were not due to manipulation (e.g., a fight, a break-up), and 3 were removed due to evidence that they did not watch their assigned video in its entirety. Of the remaining 45 participants, 31 were female and 14 were male. 38 participants identified as White, 4 as Black/African American, 2 as Hispanic or Latino, 1 as Mixed Race, and 1 as Middle Eastern. Participants ranged in age from 18 to 44, with a mean age of 23.8.

Procedure

After volunteering to participate in this study, participants were asked to complete two online questionnaires. The first of these served as a pre-test questionnaire, and was used to collect demographic information such as age, race, and ethnicity. After responding to these measures, participants were tasked with completing a series of items that assessed how each individual rates on the Big Five dimensions of personality (Thompson, 2008). Then, the questionnaire measured each participant's affect utilizing the Positive and Negative Affect Schedule (PANAS) (Watson et al., 1988). This questionnaire was also used to collect data on potential third variables, including measures for participants' individual gaming and online video viewing habits, as well as a measure of preexisting prosocial tendencies (Carlo & Randall, 2002).

After entering their individual information, participants were asked to identify someone with whom they frequently play video games or otherwise have a close relationship with. The questionnaire then assessed a participant's preexisting perceptions of the relationship that exists between them and the identified individual. These perceptions were measured using items designed to evaluate relationship satisfaction, closeness, and trust (Crocker et al., 2017; Dunn & Schweitzer, 2005). During data analysis, these three variables are used to create a single score for perceived relationship quality. Participants were also asked if any event had occurred recently which may have influenced their perceptions in order to control for changes in relationship quality that may not be due to the experimental design. Finally, participants were asked about the role that video games play in their relationship with the identified individual. Participants responded to items regarding their dyadic video game playing habits and to a set of measures designed to determine to what extent playing video games together serves as a form of relational maintenance in said relationship.

Participants were sent a link to the second questionnaire after indicating they had completed all pre-test measures. At the beginning of this questionnaire, participants were randomly assigned to watch a series of video clips of two persons playing a video game either competitively or cooperatively. The game used to record the videos for this study was *Gears of War 5*, which was produced by Epic Games in 2019. This game was chosen because it is a violent, shooter-type game that has both a cooperative campaign mode and an online, competitive multiplayer mode. Gameplay video was collected using two *Xbox One* gaming consoles and an Elgato HD60S recording device.

Following the random assignment, 20 participants watched the competitive version and 25 watched the cooperative version. In the competitive condition, the video clips showed the two players engaging in a “Death Match” scenario. In this type of game mode, players compete to see who can score the most “kills” on each other in a set period of time. In the cooperative condition, participants watched video clips of two individuals playing the video game’s “Campaign Mode”. This mode requires players to work together to complete a series of objectives that involve fighting against computer-controlled enemies. Before watching the videos, participants were asked to imagine that they were Player A, the player from whose perspective the video clips were recorded, and that the individual with whom they had identified as having relationship during the pre-test questionnaire was Player B, the other human-controlled character. The gameplay videos in each condition were similar in length, with the competitive video lasting 7 minutes 8 seconds and the cooperative video lasting 8 minutes 18 seconds. Furthermore, the recordings consisted only of gameplay footage, and did not include any audio or video of the two individuals who were playing the game. This was in order to prevent the influence of any parasocial relationships.

Immediately after watching their assigned gameplay footage, participants responded to a series of manipulation-test type items. These items measured perceived violence of the video game as well as the level of cooperation and competition displayed by the two players. Other items measured each participant’s level of enjoyment, frustration, and ability to identify with the players of the game. Then, participants completed the State Hostility Scale (Anderson et al., 1995) in order to measure their aggression. This is for comparison with previous studies that found that video games with

violent content played in a cooperative context should result in lower aggression than when played in a competitive context (Jerabeck & Ferguson, 2013; Passmore & Holder, 2014). Participants were also readministered the PANAS as a post-test measure of positive and negative affect.

Then, participants were asked to read a series of five short stories taken from the objective measure of prosocial moral reasoning (PROM) developed by Carlo, Eisenberg, and Knight (1992). These stories were designed to create a conflict between the needs, wants, and desires of the protagonist and those of another character. For each story, participants were given a choice of whether the protagonist should act prosocially, selfishly, or if they were unsure as to what the protagonist should do. The responses from these five stories are used to create a scale of each participant's prosocial behavior. Lastly, participants once again rated their perception of the relationship that exists between them and the individual whom they had identified during the first half of this study using the measures for satisfaction, closeness, and trust.

The pre-test questionnaire took approximately 15 minutes to complete, and the second questionnaire took approximately 30 minutes to complete, including the time needed to watch the assigned video. The two questionnaires were completed in separate sessions, and the second questionnaire was usually administered within one week after a participant completed the pre-test questionnaire.

Covariates

This study also accounted for several variables which might co-vary with the dependent variables being examined. As mentioned previously, these include pre-existing

prosocial tendencies, the use of relational maintenance behaviors, the Big Five factors of personality, and demographic variables such as age, sex, and ethnicity. Also accounted for in this study were variables related to online video viewing habits, independent and interpersonal video game playing habits, perceptions of video violence, and feelings of enjoyment, frustration, and identification.

Measures and Scales

The following section describes how each variable accounted for in this study was measured; including scale constructions when necessary. Descriptive statistics for each variable are also listed here.

Personality. Individual ratings on the Big-Five dimensions of personality were assessed using the International English Big-Five Mini-Markers (Thompson, 2008). Participants responded to 40, one-word characteristics (e.g., Shy, Creative, Intelligent) by rating how accurately each characteristic describes themselves. For each item, participants responded on a 7-point interval scale (1 = Inaccurate; 7 = Accurate). [See Appendix A]. This scale determined a participant's score on each of the Big-Five dimensions of personality: openness ($M = 5.20$, $SD = 0.91$, $\alpha = .822$), conscientiousness ($M = 5.15$, $SD = 0.99$, $\alpha = .789$), extraversion ($M = 4.19$, $SD = 1.22$, $\alpha = .880$), agreeableness ($M = 6.00$, $SD = 0.62$, $\alpha = .776$), and neuroticism ($M = 4.16$, $SD = 1.03$, $\alpha = .782$). The descriptive statistics for each dimension are listed in Table 1.

Partner Sex. Participants were asked to indicate the biological sex of the individual whom they had identified earlier in the study (1 = Female; 2 = Male; 3 =

Other). The distribution of partner sex by condition is detailed in the results chapter (See Table 16).

Table 1 Summary statistics for big five factors of personality

Individual Items and Scales*	Mean	S.D.
Openness (Cronbach's alpha = 0.822, i = 8)	5.20	0.91
Conscientiousness (Cronbach's alpha = 0.789, i = 8)	5.15	0.99
Extraversion (Cronbach's alpha = 0.880, i = 8)	4.19	1.22
Agreeableness (Cronbach's alpha = 0.776, i = 8)	6.00	0.62
Neuroticism (Cronbach's alpha = 0.782, i = 8)	4.16	1.03

Note *Individual items ranged from 1 to 7, scales constructed by taking the mean of item.

n = 45

Relationship Type. Participants were asked to indicate the type of relationship they had with the individual whom they had identified earlier in the study. Responses were classified as either Non-Romantic (1) or Romantic (2). The distribution of relationship type by condition is detailed in the results chapter (See Table 16).

Relationship Quality Change. Relationship quality was determined by taking the average score of three different measures: satisfaction, closeness and trust. *Relationship satisfaction* was measured using a version of the scale utilized by Crocker et al. (2017) that was modified to reference the individual identified by each participant earlier in the study. Participants rated their relationship with the individual they identified using a 7-point Likert-scale (1 = Strongly Disagree; 7 = Strongly Agree) on five items: “I have a good relationship with (individual)”, “My relationship with (individual) is stable”, “My

relationship with (individual) is strong”, “My relationship with (individual) makes me happy”, and “Everything considered, my relationship with (individual) is happy” ($\alpha = .858$).

Relationship closeness was also measured using items from Crocker et al. (2017) that were modified to reference the individual identified by each participant earlier in the study. Participants responded to the questions “How close do you feel to (individual)” and “Relative to what you know about similar relationships between other people, how would you characterize your relationship with (individual)?” on 7-point Likert-type scales (1 = Not at all/ Not as close as others; 7 = Extremely/ Much closer than others”) ($\alpha = .815$).

Relationship trust was measured using a version of the Trust Inventory from Dunn and Schweitzer (2005) that was modified to reference the individual identified by each participant earlier in the study. Participants evaluated how trusting they are of the indicated individual by responding to ten items (e.g., “I would expect _____ to pay me back if I loaned him/her \$40”) on a 7-point Likert-type scale (1 = Not at all likely; 7 = Very Likely) ($\alpha = .815$). [See Appendix B].

Each of these scales were administered both before and after exposure to the assigned condition, resulting in a pre-test ($M = 6.27$, $SD = 0.70$, $\alpha = .770$) and post-test ($M = 6.27$, $SD = 0.69$, $\alpha = .712$) measure of relationship quality. Relationship quality change was calculated by subtracting the pre-test score from the post-test score ($M = .0096$, $SD = 0.42$). The descriptive statistics for these scales are reported in Table 2.

Table 2 Summary statistics for relationship quality

Individual Items and Scales*	Mean	S.D.
Relationship Quality Pre	6.27	0.70
(Cronbach's alpha = 0.770, i = 3)		
Satisfaction Pre	6.62	0.59
Closeness Pre	6.10	1.07
Trust Pre	6.10	0.88
Relationship Quality Post	6.27	0.69
(Cronbach's alpha = 0.712, i = 3)		
Satisfaction Post	6.58	0.65
Closeness Post	6.03	1.10
Trust Post	6.18	0.85
Relationship Quality Change	-0.0096	0.42

Note: *Individual scales ranged from 1 to 7, scale constructed by taking the mean of scales. Change calculated by subtracting pre scores from post scores.

n = 45

Relational Maintenance Gaming. The role of video game play as a form of relational maintenance was measured using a version of the relational maintenance measure designed by Osswald, Clark, and Kelley (2004) that was modified to refer to behaviors engaged in while playing video games, similar to the method used by Ledbetter and Kuznekoff (2012). During the pre-test questionnaire, participants were shown 13 items that start with the root “When playing video games together, how often do you and your partner...” (e.g., “...try to make each other laugh”) and 4 items that begin with the root “How often do you and your partner use video games to...” (e.g., “Celebrate special occasions together”). Participants responded to all items using a 7-point Likert-type scale (1 = Never; 7 = Very Frequently). [See Appendix C]. A general score for the frequency of relational maintenance behavior while gaming was determined by taking the average of these 17 items ($M = 4.27$, $SD = 1.76$). The descriptive statistics for each item are listed in Table 3.

Table 3 Summary statistics for relational maintenance behaviors while gaming

Individual Items and Scales*	Mean	S.D.
Gaming Maintenance	4.27	1.76
(Cronbach's alpha = 0.959, i = 13)		
Express thanks when one of you does something nice for the other?	4.38	2.17
Try to make each other laugh?	5.62	2.15
Try to be upbeat and cheerful?	5.33	2.14
Reminisce about things you did together in the past?	4.93	2.30
Try to make the other person "feel good" about who they are?	4.69	2.14
Let each other know you accept them for who they are?	4.27	2.28
Share your private thoughts with each other?	4.33	2.38
Repair misunderstandings?	4.09	2.41
Give advice to each other?	4.62	2.26
Show signs of affection to each other?	3.93	2.49
Have intellectually stimulating conversations?	4.60	2.27
Do favors for each other?	4.58	2.25
Work together on job tasks?	4.11	2.19
Support each other when one of you is going through a hard time?	3.38	2.38
Provide each other with emotional support?	3.29	2.24
Make an effort to spend time together, even when you are busy?	4.07	2.62
Celebrate special occasions together?	3.22	2.40

Note: *Individual items ranged from 1 = Never to 7 = Very Frequently, scale constructed by taking mean of items.

n = 45

Relational Maintenance. This study also measured the presence of more general, task-related relational maintenance behaviors in a participant's relationship as a control variable. During the pre-test questionnaire, participants were shown three items that began with the root "How often do you and this individual...": "Do new or unique activities together", "Get together just to hang out", and "Work together on jobs or tasks". Participants responded to these items using a 7-point Likert-type scale (1 = Never;

7 = Very Frequently). Participants were also shown four items that began with the root “How important are the following activities in the relationship between you and this individual?”: “Do new or unique activities together”, “Get together just to hang out”, “Work together on jobs or tasks?”, and “Play video games together”. These items were responded to using a 7-point Likert-type scale (1 = Not Important at All; 7 = Very Important). A general score for relational maintenance behavior was determined by taking the average of these 7 items ($M = 4.59$, $SD = 1.15$). The descriptive statistics for each item are listed in Table 4.

Table 4 Summary statistics for relational maintenance behaviors

Individual Items and Scales	Mean	S.D.
Relational Maintenance	4.59	1.15
(Cronbach's alpha = 0.758, i = 7)		
Do new or unique activities together? *	4.60	1.54
Get together just to hang out? *	5.60	1.63
Work together on jobs or tasks? *	4.07	1.95
Do new or unique activities together? **	4.58	1.84
Get together just to hang out? **	5.91	1.16
Work together on jobs or tasks? **	4.07	2.15
Play video games together? **	3.33	2.15

Note: *Individual items ranged from 1 = Never to 7 = Very Frequently, scale constructed by taking mean of items.

**Individual items ranged from 1 = Not Important at All to 7 = Very Important, scale constructed by taking mean of items.

n = 45

Positive and Negative Affect Change. Affect was measured using the Positive and Negative Affect Schedule (Watson et al., 1988). Participants were shown a list of 20 feelings and emotions (e.g., “hostile”) and asked to rate to what extent they “feel this way right now, that is, at the present moment” for each item. Participants responded to each

item on a 7-point Likert-type scale (1 = Very slightly or not at all; 7 = Extremely). [See Appendix D].

The PANAS was administered both before and after exposure to the assigned condition, resulting in pre-test and post-test measures of positive affect ($M = 42.62$, $SD = 11.87$; $M = 34.60$, $SD = 14.85$) and negative affect ($M = 23.89$, $SD = 12.60$; $M = 18.44$, $SD = 11.30$). Positive affect change ($M = -8.02$, $SD = 14.07$) and negative affect change ($M = -5.44$, $SD = 14.01$) were calculated by subtracting the associated pre-test score from the post-test score. The descriptive statistics for these scales are reported in Table 5.

State Hostility. For the purposes of this study, aggression will be operationalized as one's level of state hostility (Anderson et al., 1995). State Hostility was measured using the State Hostility Scale developed by Anderson, Deuser, and DeNeve (1995). Participants were asked to respond to 35 mood statements (e.g., "I feel aggravated") using a 7-point Likert-type scale (1 = Strongly Disagree; 7 = Strongly Agree). [See Appendix E]. ($M = 2.61$, $SD = 0.77$, $\alpha = .936$).

Table 5 Summary statistics for positive and negative affect

Individual Items and Scales*	Mean	S.D.
Positive Affect Change	-8.02	14.07
Positive Affect Pre	42.62	11.87
Positive Affect Post	34.60	14.85
Negative Affect Change	-5.44	14.01
Negative Affect Pre	23.89	12.60
Negative Affect Post	18.44	11.30

Note: *Change calculated by subtracting pre scores from post scores

n = 45

Prosocial Tendencies. Participants' pre-existing prosocial tendencies were measured using the Prosocial Tendencies Measure (PTM) created by Carlo and Randall

(2002). Participants were shown a series of 23 statements (e.g., “I can help others best when people are watching me”) and were asked to indicate “how much each statement describes you”. Participants responded using a 7-point Likert-type scale (1 = Does not describe me at all; 7 = Describes me greatly). [See Appendix F].

Participants were rated on six separate dimensions of prosocial tendencies: altruism ($M = 6.03$, $SD = 0.77$, $\alpha = .529$), anonymous ($M = 4.25$, $SD = 1.44$, $\alpha = .869$), public ($M = 2.04$, $SD = 0.95$, $\alpha = .810$), emotion ($M = 5.21$, $SD = 1.15$, $\alpha = .777$), dire ($M = 5.10$, $SD = 1.24$, $\alpha = .740$), and compliant ($M = 5.98$, $SD = 1.02$, $\alpha = .896$). The descriptive statistics for each dimension are reported in Table 6.

Table 6 Summary statistics for prosocial tendencies

Individual Items and Scales*	Mean	S.D.
PTM Altruism (Cronbach's alpha = 0.529, i = 5)	6.03	0.77
PTM Anonymous (Cronbach's alpha = 0.869, i = 5)	4.25	1.44
PTM Public (Cronbach's alpha = 0.810, i = 4)	2.04	0.95
PTM Emotion (Cronbach's alpha = 0.777, i = 4)	5.21	1.15
PTM Dire (Cronbach's alpha = 0.740, i = 3)	5.10	1.24
PTM Compliant (Cronbach's alpha = 0.896, i = 2)	5.98	1.02

Note *Individual items ranged from 1 to 7, scales constructed by taking the mean of item.

n = 45

Prosocial Behavior. Prosocial behavior was measured using five stories from the objective measure of prosocial moral reasoning (PROM) created by Carlo, Eisenberg, and Knight (1992). Each story described a situation in which the wants, needs, and

desires of the protagonist were in conflict with those of another character. After reading each story, participants were asked whether the protagonist should act in one of two ways, or if they were unsure as to what the protagonist should do. Of the two choices, one was always a prosocial action and the other was always a selfish action (e.g., “Tony should give blood”, “Tony should not give blood”). [See Appendix G]. Participants responded on a 3-point scale (-1 = Selfish Action, 0 = “Not Sure”, 1 = Prosocial Action). The responses from each of the five stories are combined to create a measure of prosocial behavior ($M = 2.87$, $SD = 1.49$, $\alpha = .188$). The descriptive statistics for this measure are listed in Table 7. While the Cronbach’s alpha for prosocial score is very low, this should not matter. Rather than being an index, prosocial score is used here as a way to quantify observable behavior so that it may be compared numerically.

Table 7 Summary statistics for prosocial choices

Individual Items and Scales*	Mean	S.D.
Prosocial Score	2.87	1.49
(Cronbach's alpha = 0.188, i = 5)		
Sandy Story	0.93	0.33
Tony Story	0.33	0.74
John Story	1.00	0.00
Scott Story	0.00	0.83
Eric Story	0.60	0.65

Note *Individual items ranged from -1 = No to 1 = Yes, scale constructed by taking the sum of items.

n = 45

Online Video Viewing Habits. Participants’ online video viewing habits were accounted for using several methods. *Video Service Usage* was measured by having participants indicate how often they view videos using 10 different platforms (“Netflix”, “Hulu”, “Amazon Video”, “Twitter”, “Instagram”, “Facebook”, “Twitch”, “Other Social

Media Sites”, and “Other Video Streaming Services”). Participants were asked “When watching videos online, how often do you use the following services?” and responded to each item using a 7-point Likert-type scale (1 = Never; 7 = Very Frequently).

These items were further divided into three subscales through factor analysis, with principal components factoring, orthogonal rotation, and a fixed number of three factors. The measure of sampling adequacy (MSA) was .588 and the Bartlett’s test of sphericity resulted in a highly significant chi-square (99.77, $p < .001$), indicating the appropriateness of factor analysis for this set of ten items (See Table 8). The three factors were separated into subscales based on the items that loaded highly and cleanly on each factor. The first subscale was titled “Social Media”, as it includes free platforms that allow anyone to post video content (Instagram, Twitter, YouTube) ($M = 4.73$, $SD = 1.80$, $\alpha = .733$). The second subscale was titled “Streaming Services”, as it includes subscription-based video platforms with professionally created and curated content (Netflix, Hulu, Amazon Video, Other video streaming services) ($M = 3.58$, $SD = 1.43$, $\alpha = .604$). Lastly, the third subscale was titled “Other Video Services”, as it includes items that did not cleanly factor into the other two subscales (Twitch, Facebook, Other social media sites) ($M = 2.97$, $SD = 1.18$, $\alpha = .414$). The descriptive statistics for these subscales are reported in Table 9. The low alpha for Other Video Services is most likely due to the items not being highly related to each other, but also not loading highly into the other subscales. Scales were constructed by taking the average of the included items.

Participants were also asked “When watching videos online, how often do you watch videos of other individuals playing video games?”, to which they responded on a 7-point Likert-type scale (1 = Every Day; 7 = Never). These scores were reverse coded to

Table 8 Principal components factor analysis of video platform usage measures (orthogonal rotation)

	Factor Loadings			Communalities:
	1: Social Media	2: Streaming Services	3: Other Video Services	
Instagram	0.865	0.014	0.281	0.828
Twitter	0.781	0.271	0.121	0.698
YouTube	0.729	-0.117	-0.346	0.665
Netflix	0.141	0.710	0.123	0.539
Other Video Streaming Services	0.156	0.701	0.238	0.572
Hulu	-0.088	0.653	0.044	0.436
Amazon Video	0.041	0.598	-0.132	0.377
Twitch	0.167	0.182	-0.820	0.734
Other Social Media Sites	0.142	0.218	0.618	0.449
Facebook	0.431	0.189	0.558	0.572
Eigenvalue	2.177	1.984	1.670	[5.831]
Percent of Total Variance	21.773	19.836	16.702	58.311
Percent of Common Variance	37.339	34.018	28.643	100.000

KMO measure of sampling adequacy = .588

Bartlett's test of sphericity: approx. chi-square = 99.767, df = 45, $p < .001$

$n = 45$

be consistent with other measures used during this study. This item was used as a measure of how frequently a participant watches other individuals play video games online ($M = 3.67$, $SD = 2.41$) (See Table 9).

Monetary support of online video creators was measured by having participants respond Yes (1) or No (0) to the following four items: “I have donated money to an online content creator”, “I have bought merchandise from an online content creator”, “I have a paid subscription to an online content creator”, and “I have supported an online content creator in a way not listed”. A general score of monetary support was created by taking the sum of these four items ($M = 0.69$, $SD = 0.90$).

Participants also responded Yes (1) or No (2) as to whether they have a Twitch Prime account. This score was dummy coded such that Yes = 1 and No = 0 ($M = 0.11$, $SD = 0.32$). The descriptive statistics for these measures are reported in Table 9.

Individual Gaming Habits. Participants' individual gaming habits were accounted for by measuring how often they play games of different genres and determining whether or not they had previously played a game from the *Gears of War* franchise. *Individual Gaming Genre Frequency* was measured by having participants indicate how often they play video games from 11 different genres ("Shooter", "Fighting", "Casual", "Sports", "Puzzle", "Strategy", "Action/Adventure", "Simulator", "Arcade", "Roleplaying Game", and "MMORPG"). Participants were asked "When playing video games, how often do you play games of the following genres?" and responded to each item using a 7-point Likert-type scale (1 = Never; 7 = Very Frequently).

These items were further divided into three subscales through factor analysis, with principal components factoring, orthogonal rotation, and an extraction cutoff of eigenvalue = 1.0. The measure of sampling adequacy (MSA) was .709 and the Bartlett's test of sphericity resulted in a highly significant chi-square (223.65, $p < .001$), indicating the appropriateness of factor analysis for this set of ten items (See Table 10). The three factors were separated into subscales based on the items that loaded highly and cleanly on each factor. The first subscale was titled "Other Types of Games", as it includes several genres of video game that cannot easily be classified into one category (Strategy, Puzzle, Arcade, Casual, Simulator) ($M = 2.92$, $SD = 1.52$, $\alpha = .798$). The second subscale was titled "Exploration-Type Games", as it includes genres of video game that tend to include

Table 9 Summary statistics for online video viewing habits

Individual Items and Scales	Mean	S.D.
Use Social Media*	4.73	1.80
(Cronbach's alpha = 0.733, i = 3)		
Twitter	3.53	2.44
Instagram	4.64	2.47
YouTube	6.00	1.71
Use Streaming Services*	3.59	1.43
(Cronbach's alpha = 0.604, i = 4)		
Netflix	5.60	1.86
Hulu	3.67	2.54
Amazon Video	2.53	2.00
Other Video Streaming Services	2.58	1.97
Use Other Video Services*	2.97	1.18
(Cronbach's alpha = 0.414, i = 3)		
Twitch	2.07	1.86
Facebook	3.24	2.19
Other Social Media Sites	3.60	2.60
Frequency of watching others play video games online	3.67	2.41
(single item measure)		
Monetary support of online video creators**	0.69	0.90
Donated money	0.13	0.34
Bought merchandise	0.33	0.48
Have a paid subscription	0.18	0.39
Other	0.04	0.21
Do you have a Twitch Prime subscription?	0.11	0.32
(single item measure)		

Note: *Individual items ranged from 1 = Never to 7 = Very Frequently, scale constructed by taking the mean of items.

**Individual items ranged from 0 = No to 1 = Yes, scale constructed by taking the sum of items.

n = 45

large, open worlds and encourage self-guided exploration (Action/Adventure, RPG,

MMORPG) ($M = 2.64$, $SD = 1.60$, $\alpha = .736$). Lastly, the third subscale was titled

“Action-Type Games”, as it includes genres of video game that tend to put an emphasis

on the moment-to-moment actions of the player, rather than the “world” of the game (Shooter, Fighting, Sports) ($M = 2.68$, $SD = 1.65$, $\alpha = .676$). Subscales were constructed by taking the average of the included items. The descriptive statistics for these subscales are reported in Table 11.

Table 10 Principal components factor analysis of video game genre frequency measures (orthogonal rotation)

	Factor Loadings			Communalities:
	1: Other Types of Games	2: Exploration- Type Games	3: Action- Type Games	
Strategy	0.805	0.113	0.048	0.663
Puzzle	0.789	-0.199	-0.259	0.729
Arcade	0.701	0.096	0.323	0.605
Casual	0.700	0.374	0.074	0.636
Simulator	0.597	0.424	0.204	0.578
MMORPG	0.014	0.838	-0.054	0.705
Action/Adventure	0.461	0.675	0.376	0.810
RPG	0.261	0.667	0.279	0.590
Sports	0.212	-0.103	0.836	0.755
Shooter	-0.064	0.579	0.658	0.772
Fighting	-0.032	0.343	0.597	0.475
Eigenvalue	2.939	2.446	1.932	[7.317]
Percent of Total Variance	26.720	22.239	17.561	66.520
Percent of Common Variance	40.168	33.432	26.400	100.000

KMO measure of sampling adequacy = .709

Bartlett's test of sphericity: approx. chi-square = 223.646, df = 55, $p < .001$, $n = 45$

Participants also responded Yes (1) or No (2) to the question “Have you ever played a game from the *Gears of War Franchise*?” These responses were dummy coded such that Yes = 1 and No = 0 ($M = 0.22$, $SD = 0.42$) (See Table 11).

Interpersonal Gaming Habits. A participant’s interpersonal gaming habits were accounted for by identifying what types of video games they tend to play with others and

in what settings they play them. *Interpersonal Gaming Genre Frequency* was measured by having participants indicate how often they play video games from 11 different genres (“Shooter”, “Fighting”, “Casual”, “Sports”, “Puzzle”, “Strategy”, “Action/Adventure”, “Simulator”, “Arcade”, “Roleplaying Game”, and “MMORPG”) with the individual they identified earlier in the study. Participants were asked “When playing video games with this individual, how often do you play games of the following genres?” and responded to each item using a 7-point Likert-type scale (1 = Never; 7 = Very Frequently).

Table 11 Summary statistics for individual gaming habits

Individual Items and Scales*	Mean	S.D.
Play Action-Type Games	2.68	1.65
(Cronbach's alpha = 0.676, i = 3)		
Shooter	3.44	2.49
Fighting	2.62	2.09
Sports	1.98	1.67
Play Exploration-Type Games	2.64	1.60
(Cronbach's alpha = 0.736, i = 3)		
Action/Adventure	3.42	2.32
Role Playing Game	3.02	2.23
MMORPG	1.47	1.20
Play Other Types of Games	2.92	1.52
(Cronbach's alpha = 0.798, i = 5)		
Casual	3.22	2.15
Puzzle	3.02	2.09
Strategy	3.47	2.15
Simulator	2.44	2.05
Arcade	2.47	1.71
Have you ever played a game from the <i>Gears of War</i> franchise?	0.22	0.42
(single item measure)		

Note: *Individual items ranged from 1 = Never to 7 = Very Frequently, scale constructed by taking mean of items.

n = 45

For consistency, these items were further divided into three subscales based on the factor analysis performed on the items for individual gaming genre frequency (See Table 10). The first subscale, “Other Types of Games”, includes the Strategy, Puzzle, Arcade, Casual, and Simulator genres of video games ($M = 2.27$, $SD = 1.30$, $\alpha = .696$). The second subscale, “Exploration-Type Games”, includes the Action/Adventure, RPG, and MMORPG genres of video games ($M = 2.04$, $SD = 1.56$, $\alpha = .760$). Lastly, the third subscale, “Action-Type Games”, includes the Shooter, Fighting, and Sports genres of video games ($M = 2.41$, $SD = 1.47$, $\alpha = .393$). Subscales were constructed by taking the average of the included items. The descriptive statistics for these subscales are reported in Table 12.

Participants were also asked about the contexts in which they tend to play video games with the individual they identified. Participants responded to the questions “When playing video games with this individual, how often do you play in person?” and “When playing video games with this individual, how often do you play online?” using a 7-point Likert-type scale (1 = Never; 7 = Very Frequently) ($M = 4.02$, $SD = 2.36$; $M = 3.36$, $SD = 2.65$). The descriptive statistics for these items are listed in Table 12.

Video Violence. After watching the assigned video, participants responded to the prompt “In terms of violent content, how would you rate the video game shown in the video?” on a 7-point Likert-type scale (1 = Not Violent at All; 7 = Extremely Violent). This item measured participants’ perceptions of video violence ($M = 5.84$, $SD = 1.04$) (See Table 13).

Perceptions of Cooperative and Competitive Behavior. Participants’ perceptions of cooperative and competitive behavior while watching their assigned video

Table 12 Summary statistics for interpersonal gaming habits

Individual Items and Scales*	Mean	S.D.
Play Action-Type Games (Cronbach's alpha = 0.393, i = 3)	2.41	1.47
Shooter	3.04	2.50
Fighting	2.49	2.29
Sports	1.71	1.67
Play Exploration-Type Games (Cronbach's alpha = 0.760, i = 3)	2.04	1.56
Action/Adventure	2.80	2.31
Role Playing Game	1.84	1.77
MMORPG	1.59	1.53
Play Other Types of Games (Cronbach's alpha = 0.696, i = 5)	2.27	1.30
Casual	2.73	2.07
Puzzle	2.16	1.93
Strategy	2.38	2.04
Simulator	1.76	1.71
Arcade	2.33	1.88
Play together in person (single item measure)	4.02	2.36
Play together online (single item measure)	3.36	2.65

Note: *Individual items ranged from 1 = Never to 7 = Very Frequently, scale constructed by taking mean of items.

n = 45

were measured to serve as manipulation checks. *Perceptions of cooperative behavior* were measured using three items: “As a pair, Player A and Player B appeared to act cooperatively”, “As an individual, Player A appeared to act cooperatively with Player B”, and “As an individual, Player B appeared to act cooperatively with Player A”.

Perceptions of competitive behavior were also measured using three items: “As a pair, Player A and Player B appeared to act competitively”, “As an individual, Player A appeared to act competitively with Player B”, and “As an individual, Player B appeared

to act competitively with Player A”. Participants responded to all eight items using a 7-point Likert-type scale (1 = Strongly Disagree; 7 = Strongly agree). General ratings of both cooperative behavior ($M = 3.87$, $SD = 2.20$, $\alpha = .981$) and competitive behavior ($M = 3.93$, $SD = 1.94$, $\alpha = .583$) were determined by taking the average of the associated items. The descriptive statistics for these scales are listed in Table 13.

Enjoyment. Enjoyment was measured using four items: “As a pair, I believe this individual and I would have enjoyed playing this game together”, “I would have enjoyed playing this game with this individual”, “This individual would have enjoyed playing this game with me”, and “I enjoyed watching the gameplay video”. Participants responded to these items using a 7-point Likert-type scale (1 = Strongly Disagree; 7 = Strongly agree), and a general score for enjoyment was determined by taking the mean of these items ($M = 3.99$, $SD = 1.81$, $\alpha = .869$). The descriptive statistics for this scale are reported in Table 14.

Frustration. Frustration was measured using four items: “As a pair, I believe this individual and I would have felt frustrated playing this game together”, “I would have felt frustrated playing this game with this individual”, “This individual would have felt frustrated playing this game with me”, and “I felt frustrated watching the gameplay video”. Participants responded to these items using a 7-point Likert-type scale (1 = Strongly Disagree; 7 = Strongly agree), and a general score for frustration was determined by taking the mean of these items ($M = 3.28$, $SD = 1.54$, $\alpha = .818$). The descriptive statistics for this scale are reported in Table 14.

Identification. While watching their assigned video, participants were asked to imagine that they were Player A in the video and that the individual they had identified

during the pre-test questionnaire was Player B. After finishing the video, participants responded to the items “I was able to imagine that I was Player A” and “I was able to imagine that this individual was Player B” using a 7-point Likert-type scale (1 = Strongly Disagree; 7 = Strongly agree). The average of these two items was used to determine each participants’ ability to identify with the players of the game ($M = 4.78$, $SD = 1.90$, $\alpha = .846$). The descriptive statistics for this scale are reported in Table 14.

Table 13 Summary statistics for video violence, cooperation, and competition

Individual Items and Scales*	Mean	S.D.
Video Violence	5.84	1.04
(single item measure)		
Cooperation Check	3.87	2.20
(Cronbach's alpha = 0.981, i = 3)		
Player A and Player B acted cooperatively as a pair.	3.98	2.33
Player A acted cooperatively as an individual.	3.80	2.22
Player B acted cooperatively as an individual.	3.82	2.19
Competition Check	3.93	1.94
(Cronbach's alpha = 0.853, i = 3)		
Player A and Player B acted competitively as a pair.	3.69	2.19
Player A acted competitively as an individual.	4.02	2.30
Player B acted competitively as an individual.	4.09	2.13

Note: *Individual items ranged from 1 = Strongly Disagree to 7 = Strongly Agree, scale constructed by taking mean of items.

n = 45

Statistical Tests

It was predicted that the average values for state hostility, prosocial score, positive affect change, negative affect change, and change in perceived relationship quality would be significantly different for participants in the cooperative and competitive conditions.

Table 14 Summary statistics for enjoyment, frustration, and identification

Individual Items and Scales*	Mean	S.D.
Enjoyment	3.99	1.81
(Cronbach's alpha = 0.869, i = 4)		
As a pair, I believe this individual and I would have enjoyed playing this game together.	4.04	2.18
I would have enjoyed playing this game with this individual.	4.29	2.18
This individual would have enjoyed playing this game with me.	4.24	2.08
I enjoyed watching the gameplay video.	3.40	2.09
Frustration	3.28	1.54
(Cronbach's alpha = 0.818, i = 4)		
As a pair, I believe this individual and I would have felt frustrated playing this game together.	3.47	1.90
I would have felt frustrated playing this game with this individual.	3.44	1.97
This individual would have felt frustrated playing this game with me.	3.51	1.98
I felt frustrated watching the gameplay video.	2.71	1.73
Identification	4.78	1.90
(Cronbach's alpha = 0.846, i = 2)		
I was able to imagine that I was Player A.	4.93	1.98
I was able to imagine that this individual was Player B.	4.62	2.09

Note: *Individual items ranged from 1 = Strongly Disagree to 7 = Strongly Agree, scale constructed by taking mean of items.

n = 45

To test for these differences in means between groups, the analysis began by using a series of independent sample *t*-tests. Then, to account for potential third variables, a secondary ANCOVA test was also conducted for each of the five dependent variables. These ANCOVAs also allowed this thesis to investigate the hypotheses that predicted positive and negative affect would be significant covariates for the relationships between condition and prosocial score and relationship quality change. Lastly, by identifying

significant covariates, this study was able to examine how the Big Five factors of personality were related to the five dependent variables.

CHAPTER IV

RESULTS

This section begins by examining the demographic differences between participants in the two experimental conditions. Then, a set of analyses are performed to ensure that the independent variable is properly manipulated between the conditions. The remainder of this section is then dedicated to a discussion of the analyses used to test the hypotheses and their results.

Descriptive Analysis

A series of descriptive analyses were conducted in order to understand the frequency of the respondents in the dataset with reference to their demographics and other general questions. The first variable examined was age. The minimum age for participants was 18 and the maximum age was 44 ($M = 23.76$, $SD = 5.73$). There was no statistical difference in age between the two conditions ($t_{(43)} = -1.22$, $p = .231$).

Participants were also asked for the age of the individual they identified during the study, which was labeled partner age. The minimum partner age was 14 and the maximum partner age was 51 ($M = 24.91$, $SD = 7.66$). There was no statistical difference in age

between the two conditions ($t_{(43)} = -0.28, p = .783$). The descriptive statistics for these variables are reported in Table 15.

Table 15 Summary statistics for demographics

Individual Items and Scales*	Mean	S.D.
Age	23.76	5.73
Partner Age	24.91	7.66

31 (68.9%) of participants identified as female and 14 (31.1%) identified as male. In the competitive video condition, there were 13 (65.0%) female participants and 7 (35.0%) male participants. In the cooperative video condition, there were 18 (72.0%) female participants and 7 (28.0%) male participants. There was no statistical difference between the two conditions ($\chi^2 = .614$). The distribution by condition for sex can be found in Table 16.

Due to a low number of minority participants, ethnicity was grouped into two categories: white and non-white. 38 (84.0%) participants identified as white and 7 (16.0%) identified as non-white. In the competitive video condition, there were 17 (85.0%) white participants and 3 (15.0%) non-white participants. In the cooperative video condition, there were 21 (84.0%) white participants and 4 (16.0%) non-white participants. There was no statistical difference between the two conditions ($\chi^2 = .927$). The distribution by condition for ethnicity can be found in Table 16.

Participants were also asked for the sex of the individual they identified during the study, which was labeled partner sex. 13 (28.9%) of these partners were identified as female and 31 (68.9%) were identified as male. One participant either did not know or preferred not to identify the sex of the individual they identified. In the competitive video

condition, there were 5 (25.0%) participants who identified their partner as female and 15 (75.0%) participants who identified their partner as male. In the cooperative video condition, there were 8 (32.0%) participants who identified their partner as female and 16 (64.0%) participants who identified their partner as male. There was no statistical difference between the two conditions ($\chi^2 = .428$). The distribution by condition for partner sex can be found in Table 16.

The type of relationship between a participant and the individual they identified was classified as either romantic or non-romantic. 30 (66.7%) of relationships were non-romantic and 15 (33.3%) of relationships were romantic. In the competitive video condition, there were 16 (80.0%) participants who were in a non-romantic relationship with the individual they identified and 4 (20.0%) participants who were in a romantic relationship with the individual they identified. In the cooperative video condition, there were 14 (56.0%) participants who were in a non-romantic relationship with the individual they identified and 11 (44.0%) participants who were in a romantic relationship with the individual they identified. There was no statistical difference between the two conditions ($\chi^2 = .090$). The distribution by condition for relationship type can be found in Table 16.

Manipulation Check

Perceptions of cooperative and competitive behaviors were compared between the two conditions to verify that the independent variable of context (cooperative context/competitive context) was properly manipulated. An independent samples *t*-test was performed to compare the average perception of cooperative behavior between participants in the cooperative and competitive conditions. There was a significant

Table 16 Demographic Frequencies by Condition

Baseline Characteristic	Competitive Video		Cooperative Video		Full Sample	
	n	%	n	%	n	%
Sex						
Female	13	65.0	18	72.0	31	68.9
Male	7	35.0	7	28.0	14	31.1
Ethnicity						
White	17	85.0	21	84.0	38	84.4
Non-White	3	15.0	4	16.0	7	15.6
Partner Sex						
Female	5	25.0	8	32.0	13	28.9
Male	15	75.0	16	64.0	31	68.9
Relationship Type						
Non-Romantic	16	80.0	14	56.0	30	66.7
Romantic	4	20.0	11	44.0	15	33.3

difference in perception of cooperative behavior for those who watched the game being played cooperatively ($M = 5.51$, $SD = 1.18$) and those who watched the game being played competitively ($M = 2.68$, $SD = 1.13$), $t_{(43)} = -10.20$, $p < .001$ (See Table 17). These results suggest that more cooperative behavior was displayed in the cooperative condition than in the competitive condition.

An independent samples t -test was performed to compare the average perception of competitive behavior between participants in the cooperative and competitive conditions. There was a significant difference in perception of competitive behavior for those who watched the game being played cooperatively ($M = 1.82$, $SD = 1.57$) and those who watched the game being played competitively ($M = 5.50$, $SD = 1.57$), $t_{(43)} = 7.01$, $p < .001$ (See Table 17). These results suggest that more competitive behavior was displayed in the competitive condition than in the cooperative condition. Based on these

tests, this thesis is confident that the independent variable was properly manipulated between conditions.

Table 17 Independent Sample t-Test of Cooperation and Competition by Condition

Dependent Variable	Cooperative			Competitive			<i>t</i>	<i>p</i>
	<i>n</i>	<i>M</i>	<i>SD</i>	<i>n</i>	<i>M</i>	<i>SD</i>		
Cooperation Check	25	5.51	1.18	20	2.68	1.13	-10.20	< 0.001
Competition Check	25	1.82	1.24	20	5.50	1.57	7.01	< 0.001

State Hostility

It was predicted that participants who watch a video game being played in a cooperative context will experience lower average state hostility than individuals who watch a video game being played in a competitive context (H1). An independent samples *t*-test was performed to compare the average rating of state hostility between participants in the cooperative and competitive conditions. The results for this *t*-test are reported in Table 18. There was not a significant difference in state hostility for those who watched the game being played cooperatively ($M = 2.55$, $SD = 0.65$) and those who watched the game being played competitively ($M = 2.68$, $SD = 0.91$), $t_{(43)} = 0.55$, $p = .583$. These results suggest that condition had no effect on state hostility.

A correlation matrix was created to test for any significant relationships between state hostility and the other independent variables measured by this study. Of these, negative affect ($r = .331$, $p = .026$), watching gaming videos ($r = -.336$, $p = .024$), using social media ($r = -.335$, $p = .024$), and relationship quality ($r = -.326$, $p = .029$) were all significantly correlated to state hostility. The full correlation matrix can be found in Table 38 [See Appendix H].

Table 18 Independent Sample t-Test of State Hostility by Condition								
Dependent Variable	Cooperative			Competitive			<i>t</i>	<i>p</i>
	<i>n</i>	<i>M</i>	<i>SD</i>	<i>N</i>	<i>M</i>	<i>SD</i>		
State Hostility	25	2.55	0.65	20	2.68	0.91	0.55	0.583

For each of the dependent variables, a secondary, two-way analysis of covariance (ANCOVA) was conducted to further examine the initial findings while accounting for demographics and other key variables. For state hostility, a 2 x 2 ANCOVA was performed with condition (two groups: cooperative and competitive) and sex (two groups: female and male) as fixed factors, and 29 variables were included as covariates. Sex was used as a factor for this model because previous research shows evidence for an association between sex and aggression and because there were no significant differences in the distribution of males and females between conditions. Descriptive statistics for state hostility by condition and sex are reported in Table 19. The results of this analysis and the included covariates can be found in Table 20.

Table 19 Descriptive Statistics of State Hostility by Condition and Sex									
Sex	Cooperative			Competitive			Total		
	<i>n</i>	<i>M</i>	<i>SD</i>	<i>n</i>	<i>M</i>	<i>SD</i>	<i>n</i>	<i>M</i>	<i>SD</i>
Female	18	2.55	0.72	13	2.80	0.96	31	2.66	0.82
Male	6	2.64	0.43	7	2.46	0.83	13	2.54	0.66

There was not a significant main effect for condition ($F_{(1,11)} = .418, p = .531$), but there was a significant main effect for sex ($F_{(1,11)} = 7.61, p = .019$) on state hostility. On average, female participants reported significantly higher state hostility ($M = 2.66, SD = 0.82$) than did male participants ($M = 2.54, SD = 0.66$). There was also no interaction effect between condition and sex ($F_{(1,11)} = .183, p = .677$).

Table 20 Two-Way Analysis of Covariance of State Hostility by Condition and Sex

Source	<i>df</i>	<i>SS</i>	<i>MS</i>	<i>F</i>	<i>p</i>
Corrected Model ^a	32	24.40	0.76	7.62	< 0.001
Intercept	1	4.98	4.98	49.79	< 0.001
Age*	1	3.23	3.23	32.25	< 0.001
Partner Sex*	1	0.92	0.92	9.23	0.011
Openness	1	0.38	0.38	3.75	0.079
Conscientiousness*	1	1.93	1.93	19.31	0.001
Extraversion*	1	2.55	2.55	25.48	< 0.001
Agreeableness*	1	1.93	1.93	19.27	0.001
Positive Affect (Pre)*	1	1.34	1.34	13.34	0.004
Negative Affect (Pre)	1	0.43	0.43	4.34	0.061
PTM Anonymous*	1	2.97	2.97	29.64	< 0.001
PTM Public	1	0.29	0.29	2.89	0.117
PTM Dire*	1	1.16	1.16	11.61	0.006
PTM Compliant	1	0.21	0.21	2.10	0.175
Gaming Video Frequency*	1	2.99	2.99	29.87	< 0.001
Twitch Prime*	1	3.66	3.66	36.53	< 0.001
Video Support*	1	1.58	1.58	15.82	0.002
Social Media*	1	1.22	1.22	12.17	0.005
Other Video Services*	1	0.85	0.85	8.47	0.014
Played <i>Gears of War</i> *	1	1.82	1.82	18.18	0.001
Action-Type Games Ind*	1	0.54	0.54	5.38	0.041
Exploration-Type Games Ind	1	0.25	0.25	2.50	0.142
Other Games Ind*	1	1.08	1.08	10.79	0.007
Play Together Online	1	0.23	0.23	2.26	0.161
Action-Type Games Pair	1	0.18	0.18	1.78	0.209
Exploration-Type Games Pair	1	0.31	0.31	3.07	0.108
Other Games Pair	1	0.24	0.24	2.43	0.147
Rel. Maintenance Gaming	1	0.20	0.20	1.98	0.187
Relationship Type*	1	0.77	0.77	7.65	0.018
Relationship Quality (Pre)*	1	0.77	0.77	7.69	0.018
Identification	1	0.45	0.45	4.50	0.057
Condition	1	0.04	0.04	0.42	0.531
Sex	1	0.76	0.76	7.60	0.019
Condition*Sex	1	0.02	0.02	0.18	0.677
Error	11	1.10	0.10		
Total	44	327.86			
Corrected Total	43	25.50			

^aR Squared = .957 (Adj. R Squared = .831)

18 covariates showed a significant relationship to state hostility: age ($F_{(1,11)} = 32.25, p < .001$), sex of the imagined partner ($F_{(1,11)} = 9.23, p = .011$), conscientiousness ($F_{(1,11)} = 19.32, p = .001$), extraversion ($F_{(1,11)} = 25.48, p < .001$), agreeableness ($F_{(1,11)} = 19.28, p = .001$), positive affect ($F_{(1,11)} = 13.34, p = .004$), PTM anonymous ($F_{(1,11)} = 29.65, p < .001$), PTM dire ($F_{(1,11)} = 11.61, p = .006$), watching gaming videos ($F_{(1,11)} = 29.87, p < .001$), having a Twitch prime subscription ($F_{(1,11)} = 36.53, p < .001$), supporting online video creators ($F_{(1,11)} = 15.82, p = .002$), using social media ($F_{(1,11)} = 12.174, p = .005$), using other video services ($F_{(1,11)} = 8.48, p = .014$), played *Gears of War* ($F_{(1,11)} = 18.19, p = .001$), play action-type games ($F_{(1,11)} = 5.37, p = .041$), play other types of games ($F_{(1,11)} = 10.80, p = .007$), relationship type ($F_{(1,11)} = 7.65, p = .018$), and relationship quality ($F_{(1,11)} = 7.70, p = .018$). The directions of these relationships are based on the simple, bi-variate correlations found in Table 38 [See Appendix H].

Prosocial Behavior

It was predicted that participants who watch a video game being played in a cooperative context will make more prosocial choices, on average, than individuals who watch a video game being played in a competitive context (H2). An independent samples *t*-test was performed to compare the average prosocial score of participants in the cooperative and competitive conditions. The results for this *t*-test are reported in Table 21. There was not a significant difference in prosocial score for those who watched the game being played cooperatively ($M = 3.00, SD = 1.47$) and those who watched the game being played competitively ($M = 2.70, SD = 1.53$), $t_{(43)} = -0.67, p = .507$. These results

suggest that condition had no effect on the number of prosocial choices a participant made.

A correlation matrix was created to test for any significant relationships between prosocial score and the other independent variables measured by this study. Of these, no variables were significantly correlated to prosocial score. The full correlation matrix can be found in Table 39 [See Appendix I].

Table 21 Independent Sample t-Test of Prosocial Score by Condition

Dependent Variable	Cooperative			Competitive			<i>t</i>	<i>p</i>
	<i>n</i>	<i>M</i>	<i>SD</i>	<i>n</i>	<i>M</i>	<i>SD</i>		
Prosocial Score	25	3.00	1.47	20	2.70	1.53	-0.67	0.507

For prosocial score, a 2 x 2 ANCOVA was performed with condition (two groups: cooperative and competitive) and sex of the imagined partner (two groups: female and male) as fixed factors, and 25 variables were included as covariates. Partner sex was used as a factor for this model because there were no significant differences in the distribution of partners identified as male or female and because it maximized the amount of total variance in prosocial score explained. Descriptive statistics for prosocial score by condition and partner sex are reported in Table 22. The results of this analysis and the included covariates can be found in Table 23.

Table 22 Descriptive Statistics of Prosocial Score by Condition and Imagined Partner Sex

Partner Sex	Cooperative			Competitive			Total		
	<i>n</i>	<i>M</i>	<i>SD</i>	<i>n</i>	<i>M</i>	<i>SD</i>	<i>n</i>	<i>M</i>	<i>SD</i>
Female	9	3.22	1.39	5	2.60	1.14	14	3.00	1.30
Male	15	2.93	1.58	15	2.73	1.67	30	2.83	1.60

There was a significant main effect for both condition ($F_{(1,15)} = 16.15, p = .001$) and sex of the imagined partner ($F_{(1,15)} = 5.56, p = .032$) on prosocial score. In addition, there was a significant interaction effect between condition and partner sex ($F_{(1,15)} = 8.40, p = .011$). Participants in the cooperative condition who identified their partner as female made more prosocial choices on average than did individuals in the same condition who identified their partner as male ($M = 3.22, SD = 1.39; M = 2.93, SD = 1.58$), while individuals in the competitive condition who identified their partner as female made *less* prosocial choices on average than did individuals in the same condition who identified their partner as male ($M = 2.60, SD = 1.14; M = 2.73, SD = 1.67$).

21 covariates showed a significant relationship to prosocial score: age ($F_{(1,15)} = 33.32, p < .001$), age of the imagined partner ($F_{(1,15)} = 62.40, p < .001$), openness ($F_{(1,15)} = 12.68, p = .003$), neuroticism ($F_{(1,15)} = 57.62, p < .001$), positive affect ($F_{(1,15)} = 114.46, p < .001$), PTM anonymous ($F_{(1,15)} = 62.72, p < .001$), PTM public ($F_{(1,15)} = 10.27, p = .006$), PTM dire ($F_{(1,15)} = 13.55, p = .002$), PTM emotion ($F_{(1,15)} = 14.87, p < .001$), watching gaming videos ($F_{(1,15)} = 36.26, p < .001$), having a Twitch prime subscription ($F_{(1,15)} = 20.80, p < .001$), supporting online video creators ($F_{(1,15)} = 21.74, p < .001$), played *Gears of War* ($F_{(1,15)} = 66.09, p = .001$), play action-type games ($F_{(1,15)} = 5.85, p = .029$), play exploration-type games ($F_{(1,15)} = 7.99, p = .013$), play other types of games together ($F_{(1,15)} = 8.27, p = .012$), relationship type ($F_{(1,15)} = 27.74, p < .001$), relationship quality ($F_{(1,15)} = 27.50, p < .001$), relational maintenance ($F_{(1,15)} = 68.26, p < .001$), video violence ($F_{(1,15)} = 12.30, p = .003$), and frustration ($F_{(1,15)} = 16.51, p = .001$). The directions of these relationships are based on the simple, bi-variate correlations found in Table 39 [See Appendix I].

Table 23 Two-Way Analysis of Covariance of Prosocial Score by Condition and Imagined Partner Sex

Source	<i>df</i>	<i>SS</i>	<i>MS</i>	<i>F</i>	<i>P</i>
Corrected Model ^a	28	93.51	3.34	17.15	< 0.001
Intercept	1	1.23	1.23	6.29	0.024
Age*	1	6.49	6.49	33.32	< 0.001
Partner Age*	1	12.15	12.15	62.40	< 0.001
Openness*	1	2.47	2.47	12.68	0.003
Neuroticism*	1	11.22	11.22	57.62	< 0.001
Positive Affect (Pre)*	1	22.29	22.29	114.46	< 0.001
PTM Anonymous*	1	12.21	12.21	62.72	< 0.001
PTM Public*	1	2.00	2.00	10.27	0.006
PTM Dire*	1	2.64	2.64	13.55	0.002
PTM Emotion*	1	2.90	2.90	14.87	< 0.001
Gaming Video Frequency*	1	7.06	7.06	36.26	< 0.001
Twitch Prime*	1	4.05	4.05	20.80	< 0.001
Video Support*	1	4.23	4.23	21.74	< 0.001
Other Video Services	1	0.41	0.41	2.10	0.168
Played <i>Gears of War</i> *	1	12.87	12.87	66.09	< 0.001
Action-Type Games Ind*	1	1.14	1.14	5.85	0.029
Exploration-Type Games Ind*	1	1.56	1.56	7.99	0.013
Other Games Ind	1	0.88	0.88	4.51	0.051
Play Together Online	1	0.84	0.84	4.30	0.056
Exploration-Type Games Pair	1	0.36	0.36	1.87	0.192
Other Games Pair*	1	1.61	1.61	8.27	0.012
Relationship Type*	1	5.40	5.40	27.74	< 0.001
Relationship Quality (Pre)*	1	5.36	5.36	27.50	< 0.001
Relational Maintenance*	1	13.29	13.29	68.26	< 0.001
Video Violence*	1	2.40	2.40	12.30	0.003
Frustration*	1	3.22	3.22	16.51	0.001
Condition	1	3.15	3.15	16.16	0.001
Partner Sex	1	1.08	1.08	5.56	0.032
Condition*Partner Sex	1	1.64	1.64	8.40	0.011
Error	15	2.92	0.19		
Total	44	463.00			
Corrected Total	43	96.43			

^aR Squared = .970 (Adj. R Squared = .913)

It was also hypothesized that both positive affect (H3A) and negative affect (H3B) would significantly co-vary with prosocial score. Positive affect was shown to significantly co-vary with prosocial score ($F_{(1,15)} = 114.46, p < .001$); however, positive affect and prosocial score were negatively correlated, opposite from what was predicted. Negative affect was not identified as a significant covariate and there was no significant correlation between negative affect and prosocial score ($r = .188, p = .299$).

Positive Affect

It was predicted that participants who watch a video game being played in a cooperative context will have a more positive change in positive affect, on average, than individuals who watch a video game being played in a competitive context (H4A). An independent samples *t*-test was performed to compare the average change in positive affect of participants in the cooperative and competitive conditions. The results for this *t*-test are reported in Table 24. There was not a significant difference in positive affect change for those who watched the game being played cooperatively ($M = -9.84, SD = 13.13$) and those who watched the game being played competitively ($M = -5.75, SD = 15.21$), $t_{(43)} = 0.97, p = .339$. These results suggest that condition had no effect on a participant's change in positive affect.

Table 24 Independent Sample t-Test of Positive Affect Change by Condition

Dependent Variable	Cooperative			Competitive			<i>t</i>	<i>p</i>
	<i>n</i>	<i>M</i>	<i>SD</i>	<i>n</i>	<i>M</i>	<i>SD</i>		
Positive Affect Change	25	-9.84	13.13	20	-5.75	15.21	0.97	0.339

A correlation matrix was created to test for any significant relationships between positive affect change and the other independent variables measured by this study. Of these, partner sex ($r = .402, p = .006$), having played a *Gears of War* game ($r = .339, p = .023$), enjoyment ($r = .404, p = .006$), and identification ($r = .313, p = .037$) were all significantly correlated to positive affect change. The full correlation matrix can be found in Table 40 [See Appendix J].

For positive affect change, a 2 x 2 ANCOVA was performed with condition (two groups: cooperative and competitive) and sex (two groups: female and male) as fixed factors, and 22 variables were included as covariates. Sex was used as a factor for this model because previous research shows evidence for an association between sex and positive affect and because there were no significant differences in the distribution of males and females between conditions. Descriptive statistics for positive affect change by condition and sex are reported in Table 25. The results of this analysis and the included covariates can be found in Table 26.

Table 25 Descriptive Statistics of Positive Affect Change by Condition and Sex

Sex	Cooperative			Competitive			Total		
	<i>n</i>	<i>M</i>	<i>SD</i>	<i>n</i>	<i>M</i>	<i>SD</i>	<i>n</i>	<i>M</i>	<i>SD</i>
Female	18	-10.29	12.81	13	-8.85	15.25	31	-9.67	13.68
Male	6	-9.33	17.31	7	0.00	14.45	13	-4.31	15.89

There was not a significant main effect for condition ($F_{(1,16)} = 2.38, p = .143$), but there was a significant main effect for sex ($F_{(1,16)} = 13.55, p = .002$) on positive affect change. On average, female participants reported a significantly greater decrease in positive affect ($M = -9.67, SD = 13.68$) than did male participants ($M = -4.31, SD =$

15.89). There was also no interaction effect between condition and sex ($F_{(1,16)} = .001, p = .957$).

Table 26 Two-Way Analysis of Covariance of Positive Affect Change by Condition and Sex

Source	<i>df</i>	<i>SS</i>	<i>MS</i>	<i>F</i>	<i>p</i>
Corrected Model ^a	26	8040.16	309.24	7.28	< 0.001
Intercept	1	421.60	421.60	9.92	0.006
Age*	1	400.63	400.63	9.43	0.007
Partner Sex*	1	571.26	571.26	13.45	0.002
Openness*	1	587.41	587.41	13.83	0.002
Neuroticism*	1	317.86	317.86	7.48	0.015
PTM Anonymous*	1	241.99	241.99	5.70	0.030
PTM Public*	1	254.68	254.68	5.99	0.026
PTM Emotion*	1	350.65	350.65	8.25	0.011
PTM Compliant	1	189.80	189.80	4.47	0.051
Gaming Video Frequency*	1	1038.43	1038.43	24.44	< 0.001
Twitch Prime*	1	297.11	297.11	6.99	0.018
Video Support*	1	491.88	491.88	11.58	0.004
Played <i>Gears of War</i> *	1	1595.03	1595.03	37.54	< 0.001
Action-Type Games Ind	1	157.12	157.12	3.70	0.072
Other Games Ind*	1	312.88	312.88	7.36	0.015
Play Together in Person	1	0.47	0.47	0.01	0.918
Play Together Online*	1	926.66	926.66	21.81	< 0.001
Action-Type Games Pair*	1	233.32	233.32	5.49	0.032
Exploration-Type Games Pair	1	77.78	77.78	1.83	0.195
Other Games Pair*	1	521.74	521.74	12.28	0.003
Relationship Type*	1	350.05	350.05	8.24	0.011
Video Violence*	1	310.10	310.10	7.30	0.016
Enjoyment*	1	258.71	258.71	6.09	0.025
Identification	1	56.44	56.44	1.33	0.266
Condition	1	101.07	101.07	2.38	0.143
Sex	1	575.53	575.53	13.55	0.002
Condition*Sex	1	0.13	0.13	0.00	0.957
Error	16	679.75	42.48		
Total	43	11504.00			
Corrected Total	42	8719.91			

^aR Squared = .922 (Adj. R Squared = .795)

18 covariates showed a significant relationship to positive affect change: age ($F_{(1,16)} = 9.43, p = .007$), sex of the imagined partner ($F_{(1,16)} = 13.45, p = .002$), openness ($F_{(1,16)} = 13.83, p = .002$), neuroticism ($F_{(1,16)} = 7.48, p = .015$), PTM anonymous ($F_{(1,16)} = 5.70, p = .030$), PTM public ($F_{(1,16)} = 5.99, p = .026$), PTM emotion ($F_{(1,16)} = 8.25, p = .011$), watching gaming videos ($F_{(1,16)} = 24.44, p < .001$), having a Twitch prime subscription ($F_{(1,16)} = 6.99, p = .018$), supporting online video creators ($F_{(1,16)} = 11.58, p = .004$), played *Gears of War* ($F_{(1,16)} = 37.54, p < .001$), play other types of games ($F_{(1,16)} = 7.36, p = .015$), play together online ($F_{(1,16)} = 21.81, p < .001$), play action-type games together ($F_{(1,16)} = 5.49, p = .032$), play other types of games together ($F_{(1,16)} = 12.28, p = .003$), relationship type ($F_{(1,16)} = 8.24, p = .011$), video violence ($F_{(1,16)} = 7.30, p = .016$), and enjoyment ($F_{(1,16)} = 6.09, p = .025$). The directions of these relationships are based on the simple, bi-variate correlations found in Table 40 [See Appendix J].

Negative Affect

It was predicted that participants who watch a video game being played in a cooperative context will have a more negative change in negative affect, on average, than individuals who watch a video game being played in a competitive context (H4B). An independent samples *t*-test was performed to compare the average change in negative affect of participants in the cooperative and competitive conditions. The results for this *t*-test are reported in Table 27. There was a significantly larger decrease in negative affect for participants who watched the game being played cooperatively ($M = -9.08, SD = 15.09$) than for those who watched the game being played competitively ($M = -0.90, SD = 11.29$), $t_{(43)} = 2.01, p = .050$. These results suggest that condition had an effect on a participant's change in negative affect.

A correlation matrix was created to test for any significant relationships between negative affect change and the other independent variables measured by this study. Of these, conscientiousness ($r = .305, p = .042$), neuroticism ($r = -.305, p = .041$), and PTM public ($r = -.337, p = .023$) were all significantly correlated to negative affect change. The full correlation matrix can be found in Table 41 [See Appendix K].

Table 27 Independent Sample t-Test of Negative Affect Change by Condition

Dependent Variable	Cooperative			Competitive			<i>t</i>	<i>p</i>
	<i>N</i>	<i>M</i>	<i>SD</i>	<i>n</i>	<i>M</i>	<i>SD</i>		
Negative Affect Change	25	-9.08	15.09	20	-0.90	11.29	2.01	0.050

For negative affect change, a 2 x 2 ANCOVA was performed with condition (two groups: cooperative and competitive) and sex (two groups: female and male) as fixed factors, and 26 variables were included as covariates. Sex was used as a factor for this model because previous research shows evidence for an association between sex and negative affect and because there were no significant differences in the distribution of males and females between conditions. Descriptive statistics for negative affect change by condition and sex are reported in Table 28. The results of this analysis and the included covariates can be found in Table 29.

Table 28 Descriptive Statistics of Negative Affect Change by Condition and Sex

Sex	Cooperative			Competitive			Total		
	<i>n</i>	<i>M</i>	<i>SD</i>	<i>n</i>	<i>M</i>	<i>SD</i>	<i>n</i>	<i>M</i>	<i>SD</i>
Female	18	-9.24	13.99	13	-1.85	12.42	31	-6.03	13.63
Male	6	-10.00	19.34	7	0.86	9.48	13	-4.57	15.68

There was not a significant main effect for condition ($F_{(1,14)} = .112, p = .743$) or for sex ($F_{(1,14)} = .728, p = .408$) on negative affect change. However, there was a significant interaction effect between condition and sex ($F_{(1,14)} = 4.81, p = .046$). On average, male participants in the cooperative condition reported a larger decrease in negative affect than female participants ($M = -10.00, SD = 19.34; M = -9.24, SD = 13.99$), but male participants in the competitive condition had an increase in negative affect ($M = 0.86, SD = 9.48$) while female participants had a small decrease in negative affect ($M = -1.85, SD = 12.42$).

21 covariates showed a significant relationship to negative affect change: age ($F_{(1,14)} = 7.63, p = .015$), neuroticism ($F_{(1,14)} = 5.84, p = .030$), PTM altruism ($F_{(1,14)} = 5.41, p = .036$), PTM anonymous ($F_{(1,14)} = 29.85, p < .001$), PTM public ($F_{(1,14)} = 8.75, p = .010$), PTM emotion ($F_{(1,14)} = 8.69, p = .011$), PTM dire ($F_{(1,14)} = 61.75, p < .001$), watching gaming videos ($F_{(1,14)} = 23.66, p < .001$), having a Twitch prime subscription ($F_{(1,14)} = 22.69, p < .001$), supporting online video creators ($F_{(1,14)} = 24.51, p < .001$), using other video services ($F_{(1,14)} = 16.42, p = .001$), played *Gears of War* ($F_{(1,14)} = 5.70, p = .032$), play action-type games ($F_{(1,14)} = 17.01, p = .001$), play other types of games ($F_{(1,14)} = 19.53, p < .001$), play together in person ($F_{(1,14)} = 9.72, p = .008$), play exploration-type games together ($F_{(1,14)} = 9.08, p = .009$), relationship maintenance behaviors while gaming ($F_{(1,14)} = 19.27, p < .001$), relational maintenance ($F_{(1,14)} = 6.39, p = .024$), enjoyment ($F_{(1,14)} = 4.61, p = .050$), frustration ($F_{(1,14)} = 7.40, p = .017$), and identification ($F_{(1,14)} = 12.64, p = .003$). The directions of these relationships are based on the simple, bi-variate correlations found in Table 41 [See Appendix K].

Table 29 Two-Way Analysis of Covariance of Negative Affect Change by Condition and Sex

Source	<i>df</i>	<i>SS</i>	<i>MS</i>	<i>F</i>	<i>p</i>
Corrected Model ^a	29	8201.12	282.80	9.86	< 0.001
Intercept	1	335.14	335.14	11.68	0.004
Age*	1	218.88	218.88	7.63	0.015
Partner Age	1	40.13	40.13	1.40	0.091
Openness	1	130.85	130.85	4.56	0.051
Conscientiousness	1	69.38	69.38	2.42	0.142
Neuroticism*	1	167.67	167.67	5.84	0.030
PTM Altruism*	1	155.27	155.27	5.41	0.036
PTM Anonymous*	1	856.50	856.50	29.85	< 0.001
PTM Public*	1	251.17	251.17	8.75	0.010
PTM Emotion*	1	249.38	249.38	8.69	0.011
PTM Dire*	1	1771.74	1771.74	61.75	< 0.001
PTM Compliant	1	65.16	65.16	2.27	0.154
Gaming Video Frequency*	1	678.69	678.69	23.66	< 0.001
Twitch Prime*	1	650.96	650.96	22.69	< 0.001
Video Support*	1	703.08	703.08	24.51	< 0.001
Other Video Services*	1	470.97	470.97	16.42	0.001
Played <i>Gears of War</i> *	1	163.41	163.41	5.70	0.032
Action-Type Games Ind*	1	488.17	488.17	17.01	0.001
Other Games Ind*	1	560.47	560.47	19.53	< 0.001
Play Together in Person*	1	278.87	278.87	9.72	0.008
Exploration-Type Games Pair*	1	260.51	260.51	9.08	0.009
Other Games Pair	1	36.07	36.07	1.26	0.281
Rel. Maintenance Gaming*	1	552.78	552.78	19.27	< 0.001
Relational Maintenance*	1	183.24	183.24	6.39	0.024
Enjoyment*	1	132.40	132.40	4.61	0.050
Frustration*	1	212.19	212.19	7.40	0.017
Identification*	1	362.75	362.75	12.64	0.003
Condition	1	3.22	3.22	0.11	0.743
Sex	1	20.89	20.89	0.73	0.408
Condition*Sex	1	138.00	138.00	4.81	0.046
Error	14	401.67	28.69		
Total	44	9967.00			
Corrected Total	43	8602.80			

^aR Squared = .953 (Adj. R Squared = .857)

Relationship Quality

It was predicted that participants who watch a video game being played in a cooperative context will have a more positive change in their perception of relationship quality, on average, than individuals who watch a video game being played in a competitive context (H5). An independent samples *t*-test was performed to compare the average change in perceived relationship quality of participants in the cooperative and competitive conditions. The results for this *t*-test are reported in Table 30. There was not a significant difference in relationship quality change for those who watched the game being played cooperatively ($M = -.009$, $SD = 0.49$) and those who watched the game being played competitively ($M = -0.010$, $SD = 0.32$), $t_{(43)} = -0.005$, $p = .996$. These results suggest that condition had no effect on a participant's change in perceived relationship quality.

Table 30 Independent Sample t-Test of Relationship Quality Change by Condition

Dependent Variable	Cooperative			Competitive			<i>t</i>	<i>p</i>
	<i>n</i>	<i>M</i>	<i>SD</i>	<i>n</i>	<i>M</i>	<i>SD</i>		
Relationship Quality Change	25	-0.009	0.49	20	-0.010	0.32	-0.005	0.996

A correlation matrix was created to test for any significant relationships between perceived relationship quality change and the other independent variables measured by this study. Of these, partner sex ($r = -.405$, $p = .006$), PTM anonymous ($r = -.300$, $p = .045$), and using other video services ($r = .358$, $p = .016$) were all significantly correlated to perceived relationship quality change. The full correlation matrix can be found in Table 42 [See Appendix L].

For change in perceived relationship quality, a 2 x 2 ANCOVA was performed with condition (two groups: cooperative and competitive) and sex of the imagined partner (two groups: female and male) as fixed factors, and 19 variables were included as covariates. Partner sex was used as a factor for this model because there were no significant differences in the distribution of partners identified as male or female and because it maximized the amount of total variance in relationship quality change explained. Descriptive statistics for relationship quality change by condition and partner sex are reported in Table 31. The results of this analysis and the included covariates can be found in Table 32.

Table 31 Descriptive Statistics of Perceived Relationship Quality Change by Condition and Imagined Partner Sex

Partner Sex	Cooperative			Competitive			Total		
	<i>n</i>	<i>M</i>	<i>SD</i>	<i>N</i>	<i>M</i>	<i>SD</i>	<i>n</i>	<i>M</i>	<i>SD</i>
Female	9	0.289	0.568	5	0.153	0.236	14	0.241	0.470
Male	15	-0.182	0.372	15	-0.064	0.334	30	-0.123	0.353

There was a significant main effect for condition ($F_{(1,21)} = 47.90, p < .001$) but not for sex of the imagined partner ($F_{(1, 21)} = 1.32, p = .265$) on perceived relationship quality change. In addition, there was a significant interaction effect between condition and partner sex ($F_{(1, 21)} = 35.36, p < .001$). Participants in the cooperative condition who identified their partner as female averaged a greater positive change in perceived relationship quality than did those in the competitive condition ($M = 0.289, SD = 0.568$; $M = 0.153, SD = 0.236$), while participants in the cooperative condition who identified their partner as male averaged a greater *decrease* in perceived relationship quality than did those in the competitive condition ($M = -0.182, SD = 0.372$; $M = -0.064, SD = 0.334$).

Table 32 Two-Way Analysis of Covariance of Perceived Relationship Quality Change by Condition and Imagined Partner Sex

Source	<i>df</i>	<i>SS</i>	<i>MS</i>	<i>F</i>	<i>p</i>
Corrected Model ^a	22	6.80	0.31	6.91	< 0.001
Intercept	1	1.19	1.19	26.61	< 0.001
Age*	1	0.76	0.76	17.09	< 0.001
Sex*	1	0.96	0.96	21.49	< 0.001
Neuroticism*	1	0.65	0.65	14.56	0.001
Positive Affect (Pre)	1	0.15	0.15	3.24	0.087
Negative Affect (Pre)*	1	1.49	1.49	33.23	< 0.001
PTM Anonymous*	1	1.54	1.54	34.42	< 0.001
PTM Emotion*	1	0.73	0.73	16.35	< 0.001
PTM Compliant*	1	0.91	0.91	20.35	< 0.001
Video Support	1	0.11	0.11	2.48	0.130
Streaming Services	1	0.12	0.12	2.77	0.111
Other Video Services	1	0.19	0.19	4.23	0.052
Other Games Ind*	1	0.21	0.21	4.67	0.042
Play Together in Person	1	0.18	0.18	3.98	0.059
Exploration-Type Games Pair*	1	0.20	0.20	4.41	0.048
Other Games Pair	1	0.10	0.10	2.15	0.158
Relationship Type*	1	0.92	0.92	20.55	< 0.001
Enjoyment*	1	0.31	0.31	6.93	0.016
Frustration*	1	0.48	0.48	10.78	0.004
Identification*	1	0.30	0.30	6.64	0.017
Condition	1	2.14	2.14	47.90	< 0.001
Partner Sex	1	0.06	0.06	1.32	0.265
Condition*Partner Sex	1	1.58	1.58	35.36	< 0.001
Error	21	0.94	0.04		
Total	44	7.74			
Corrected Total	43	7.74			

^aR Squared = .879 (Adj. R Squared = .752)

13 covariates showed a significant relationship to perceived relationship quality change: age ($F_{(1, 21)} = 17.09, p < .001$), sex ($F_{(1, 21)} = 21.49, p < .001$), neuroticism ($F_{(1, 21)} = 14.56, p = .001$), negative affect ($F_{(1, 21)} = 33.23, p < .001$), PTM anonymous ($F_{(1, 21)} = 34.42, p < .001$), PTM emotion ($F_{(1, 21)} = 16.35, p < .001$), PTM compliant ($F_{(1, 21)} = 20.35, p < .001$), play other types of games ($F_{(1, 21)} = 4.67, p = .042$), play exploration-

type games together ($F_{(1, 21)} = 4.41, p = .048$), relationship type ($F_{(1, 21)} = 20.55, p < .001$), enjoyment ($F_{(1, 21)} = 6.93, p = .016$), frustration ($F_{(1, 21)} = 10.78, p = .004$), and identification ($F_{(1, 21)} = 6.64, p = .017$). The directions of these relationships are based on the simple, bi-variate correlations found in Table 42 [See Appendix L].

It was also hypothesized that both positive affect (H6A) and negative affect (H6B) would significantly co-vary with perceived relationship quality change. The hypothesis for positive affect was not supported by the ANCOVA model ($F_{(1, 21)} = 3.24, p = .087$), but the second hypothesis was supported, with the model identifying negative affect as a significant covariate ($F_{(1, 21)} = 33.23, p < .001$). Negative affect was negatively correlated with perceived relationship quality change, which is the same direction as was predicted.

For most of the hypotheses, the initial t -test failed to find a significant difference between participants exposed to the competitive and cooperative conditions. However, it was discovered several significant main effects and interactions after accounting for potential third variables. As such, the following section will mainly focus on the results of the ANCOVA models, including a discussion of the individual covariates. In addition, this thesis will use these models to examine how the Big Factors of personality may co-vary with the dependent variables investigated by the present research.

CHAPTER V

DISCUSSION & CONCLUSIONS

Of the five dependent variables, the initial *t*-tests showed that only negative affect change significantly differed between conditions. Furthermore, this main effect became non-significant after accounting for other variables in an ANCOVA model. These results would indicate that either the study failed to properly manipulate the independent variable between conditions or that the effects of watching a video of someone else playing a video game are different from the effects that arise when one plays a video game themselves. It should be noted, however, that the manipulation checks show that perceptions of cooperative and competitive gameplay behavior did significantly differ between conditions. Additionally, this study found that individual factors such as sex, personality, and media habits significantly covaried with the dependent variables investigated by this study. As such, this thesis will attempt to explain why the results failed to achieve significance and what influence these individual factors may have had. To accomplish this, this thesis will continue with a more in-depth examination of the results mentioned in the previous section, both for the five dependent variables as well as for the research question regarding the influence of personality. Then, the thesis will

conclude by discussing the limitations of this study as well as possible directions for future research.

State Hostility

Of the initial predictions, the effect of assignment on state hostility was meant to replicate previous findings. As discussed in the literature review, research has shown a positive relationship between competition and aggression (Eastin, 2007) and individuals who played video games in a cooperative context reported lower levels of aggression than those who played games in a competitive context (Jerabeck & Ferguson, 2013; Passmore & Holder, 2014). Following from this, the participants assigned to watch *Gears of War* being played cooperatively should have shown lower levels of state hostility than those who watched the game being played competitively. However, the analysis showed no significant effect of condition on state hostility. This difference in results may be because the participants watched the game being played, rather than playing the game themselves. One possible mechanism for the effects of cooperative context is through increased interaction, both in general and in relation to shared goals (Komorita & Parks, 1995). Since the videos were watched individually, participants did not have the opportunities for increased interaction that would have been possible if actually playing a game in a cooperative setting.

Even after performing an ANCOVA to account for other variables, there was no main effect of condition on state hostility. However, there was a significant main effect for sex, with female participants having higher average state hostility than male participants. This is unexpected, as previous research shows that men tend to score higher on self-report measures of aggression, including measures of hostility (Archer, 2004). It

is also unlikely that this gender difference in state hostility is due to the violent content of the assigned videos, as men and women tend to be equally affected after experiencing similar exposure to violent media (Plante et al., 2020). Another possible explanation is that female participants were less accustomed to the level of violence displayed in the video recordings and thus were more negatively influenced. According to a survey by NP Strategy Group, only 14% of women claim they play video games from the shooter genre, as compared to 42% of men (Sinclair, 2020). This evidence supports the argument that there may have been a difference in familiarity between male and female participants.

Table 33 Direction of Covariate Relationships with State Hostility*

Covariate	Direction	<i>p</i>
Age	Negative	< 0.001
Partner Sex	Negative	0.011
Openness	Negative	0.079
Conscientiousness	Negative	0.001
Extraversion	Positive	< 0.001
Agreeableness	Negative	0.001
Positive Affect (Pre)	Negative	0.004
PTM Anonymous	Positive	< 0.001
PTM Dire	Positive	0.006
Gaming Video Frequency	Negative	< 0.001
Twitch Prime	Positive	< 0.001
Video Support	Positive	0.002
Social Media	Negative	0.005
Other Video Services	Negative	0.014
Played <i>Gears of War</i>	Negative	0.001
Action-Type Games Ind	Negative	0.041
Other Games Ind	Negative	0.007
Relationship Type	Negative	0.018
Relationship Quality (Pre)	Negative	0.018

*The directions of these relationships are based on simple, bi-variate correlations, which can be found in Table 34 [See Appendix I].

Of the covariates included in this model, eighteen showed a significant relationship to state hostility (See Table 33). For convenience, some of these covariates will be discussed in general groups, rather than addressing each variable individually. Starting with demographics, both the participant's age and the sex of the imagined partner were significantly related to state hostility. Participant age was negatively correlated with state hostility, indicating that older participants tended to feel less aggressive after watching their assigned video. This association is supported by previous research that has found people generally do become less aggressive as they age (Lee et al., 2007). As for sex of the imagined partner, participants who identified the individual as being male tended to report lower levels of state hostility than did those who identified their partner a female. This is consistent with the findings for the main effect of sex on state hostility.

In terms of personality, conscientiousness, extraversion, and agreeableness were all significantly related to state hostility. Both conscientiousness and agreeableness were negatively correlated with state hostility, while extraversion had a positive correlation. The results for agreeableness and aggression are both supported by previous research, with agreeableness having a consistently strong, negative correlation with aggression in general, and extraversion having a consistent, slightly positive correlation (Bartlett & Anderson, 2004). However, previous research has shown no significant relationship between conscientiousness and state hostility or aggression in general. As such, it is important to question whether this significant relationship actually exists or if it is a result of the ANCOVA model as a whole.

Positive affect was also a significant covariate that was negatively correlated with state hostility. While this was not one of this study's initial predictions, it is consistent with the other hypotheses that relied on higher positive affect being associated with more positive cognitions and less negative ones. This reasoning would hold true for the direction of the relationship between positive affect and state hostility.

The model also indicated that two types of prosocial tendencies, engaging in anonymous and direct prosocial behaviors, were significantly related to state hostility. However, conceptually, it is hard to reason why these relationships are present. As such, it may be necessary to show whether these relationships actually exist or if there is some third variable involved that was not included in the scope of this study.

Five variables that measured online video viewing habits showed a significant relationship with state hostility. Of these, three measured how often a participant watched different types of online video content (watching videos of others playing video games, watching videos on social media, watching videos using other kinds of online video platforms) and two were related to contributing money to independent, online-video creators (having a *Twitch Prime* account, monetary support for online content creators). All three that measured how often participants watch different types of online video content were negatively correlated with state hostility. In contrast, watching videos using a paid streaming services was not included in the model. This indicates that participants who watch more user-created video content tended to score lower in state hostility after watching their assigned video condition. This may be due to familiarity with the style of video or type of content. However, the variables that measured monetary support were positively correlated with state hostility. A possible explanation for this is that individuals

who contribute money to online video creators might be more invested in the content of a video, making them more susceptible to any media effects the video might have.

Of the variables related to individual gaming habits that showed significant relationships to state hostility, all three (having played *Gears of War* previously, playing action-type games, playing other types of games) showed a negative correlation. While these correlations varied in strength, this indicates that experience playing some types of video games may lessen the effect of violent video games on state hostility, and possibly aggression in general.

While no interpersonal gaming habits showed a significant relationship to state hostility, some aspects of a participant's relationship were significantly related. For instance, relationship quality was negatively correlated with state hostility, which indicates that participants in more positive relationships tended to score lower in state hostility. This may be because individuals in positive relationships are more resistant to increases in aggressive cognitions, or it may be that thinking about the other person in their relationship increased their positive cognitions over all. Type of relationship was also significantly related to state hostility, with those who indicated they were in a romantic relationship with the individual they identified tending to report lower levels of state hostility than those who indicated that they were in a non-romantic relationship. This may be due to similar reasons for the correlation between state hostility and relationship quality, especially since relationship quality and relationship type are strongly correlated themselves ($r = .390$). However, it is also possible that a person's relationships may merely contribute to their trait level of hostility.

Prosocial Behavior

This thesis also hypothesized that watching a video game being played in a cooperative context would cause participants to make more prosocial choices. This prediction was based on previous research that showed that cooperative video game play was positively associated with prosocial behavior (Passmore & Holder, 2014); but, while participants in the cooperative condition made more prosocial choices, on average, than participants in the competitive condition, the initial analysis showed that the difference was not significant. Similar to the results for state hostility, this may be because the participants watched a recording of the game being played rather than playing the game themselves.

However, after controlling for possible third variables, this study was able to show a significant main effect for gaming context on prosocial behavior. There was also a significant main effect for partner sex (the sex of the individual that the participant identified) on prosocial behavior, as well as a significant interaction effect between gaming context and partner sex. Individuals in the cooperative condition who identified their partner as female made more prosocial choices on average than did individuals in the same condition who identified their partner as male. In contrast, individuals in the competitive condition who identified their partner as female made *less* prosocial choices on average than did individuals in the same condition who identified their partner as male. Interestingly, the sex of the participant was not included in the final ANCOVA model as it did contribute to the amount of variance explained. This would suggest that the sex of the person an individual is playing a video game with is more consequential in regards to prosocial behavior than is the sex of the individual themselves. These findings

also have implications for future research, as the existing literature does not appear to fully explore what effects the sex of an individual's gaming partner might have on prosocial behavior, or even on media effects in general.

Of the covariates accounted for in this model, twenty-one showed a significant relationship to prosocial score (See Table 34). These include both the age of the participant and the age of the individual they identified, which were negatively correlated with the number of prosocial choices a participant made. This is in contrast with previous research, which has found that prosocial behavior tends to increase with age (Van Lange

Table 34 Direction of Covariate Relationships with Prosocial Score*

Covariate	Direction	<i>p</i>
Age	Negative	< 0.001
Partner Age	Negative	< 0.001
Openness	Negative	0.003
Neuroticism	Positive	< 0.001
Positive Affect (Pre)	Negative	< 0.001
PTM Anonymous	Negative	< 0.001
PTM Public	Positive	0.006
PTM Dire	Negative	0.002
PTM Emotion	Negative	< 0.001
Gaming Video Frequency	Negative	< 0.001
Twitch Prime	Positive	< 0.001
Video Support	Positive	< 0.001
Played <i>Gears of War</i>	Negative	< 0.001
Action-Type Games Ind	Positive	0.029
Exploration-Type Games Ind	Positive	0.013
Other Games Pair	Negative	0.012
Relationship Type	Negative	< 0.001
Relationship Quality (Pre)	Positive	< 0.001
Relational Maintenance	Positive	< 0.001
Video Violence	Negative	0.003
Frustration	Positive	0.001

*The directions of these relationships are based on simple, bi-variate correlations, which can be found in Table 39 [See Appendix J].

et al., 1997). One possible explanation for this is that older participants tend to have less experience with more modern, graphically violent video games. This lack of familiarity may have resulted in increased negative media effects after viewing the assigned video.

In regards to the Big Five factors of personality, only openness and neuroticism had a significant relationship with prosocial score. In agreement with the research discussed earlier in this thesis, participants who were higher in neuroticism tended to make more prosocial choices. Meanwhile, openness had a negative correlation with the number of prosocial choices made, opposite from what previous studies have shown (Al-Ubaydli et al., 2014). While this result conflicts with previous findings, it should also be noted that the relationship between openness and prosocial behavior has not yet been thoroughly studied. Another factor of personality that has consistently been shown to be correlated with prosocial behavior is agreeableness (Buunk et al., 2017; Lownsbury et al., 2003) however, agreeableness was not a significant covariate in the model.

In addition to the prediction that those exposed to the cooperative condition would make more prosocial choices, it was also hypothesized that positive and negative affect would be significant covariates of prosocial score. This hypothesis was based on evidence that there is a reciprocal relationship between prosocial behavior and mood in general, with prosocial behavior leading to increased mood and increased mood leading to further prosocial behavior (Snippe et al., 2018). Other research has shown that mood may also mediate the relationship between playing prosocial video games and prosocial behaviors, as playing prosocial video games puts participants in a good mood, and those in a good mood displayed more prosocial behavior (Whitaker & Bushman, 2012). As such, this thesis expected positive affect to be positively correlated with prosocial choice

and negative affect to be negatively correlated with prosocial choice. However, only positive affect was included as a significant covariate in the model. In addition, the relationship between positive affect and prosocial behavior was the opposite from what was expected: those with higher positive affect tended to make less prosocial choices. This may be because of how prosocial behavior was measured during this study, as the items were taken from a different context.

Unsurprisingly, four of the six dimensions of prosocial tendency had a significant relationship with prosocial score: anonymous, public, dire, and emotion. Of these, only the tendency towards public prosocial behaviors was positively associated with the number of prosocial choices a participant made. This may be because a majority of the scenarios presented a situation in which the protagonist's choice would be widely known by others. In this case, it would make sense for those with a tendency towards public prosocial behaviors to be more likely to help, while those who tend to act prosocially in more anonymous situations would be less likely to help. Additionally, participants may not have perceived the scenarios as being dire or emotional, which would explain the negative relationships for the other two dimensions of prosocial tendency.

Three variables related to online video viewing habits were significantly related to prosocial score in the ANCOVA model. The frequency that one watches others play video games online was negatively associated with prosocial score. In other words, the more one watches online videos of others playing a video game, the less likely they were to make prosocial choices. This might be evidence that familiarity with a media can lead to decreased media effects. Conversely, the two variables that involved contributing money to independent, online-video creators (having a *Twitch Prime* account, monetary

support for online content creators) were positively associated with the number of prosocial choices made. One possible explanation for this is that participants who have previously contributed money to an online content creator are already accustomed to acting prosocially after viewing a video, making them more likely to act prosocially in response to other videos in the future.

As for variables related to individual gaming habits, participants who had previously played a video game from the *Gears of War* franchise tended to make less prosocial choices after watching the assigned video. This again supports a more general version of the argument from the discussion on state hostility, with familiarity leading to decreased media effects overall. However, playing action-type and exploration-type video games in general were positively correlated with the number of prosocial choices made, with both of these variables acting as significant covariates. It is unclear why general familiarity with a genre would have a positive relationship with prosocial score while specific experience with the gaming franchise would have a negative relationship. The only variable related to interpersonal gaming habits that was included as a significant covariate was the tendency to play other types of games together. Participants who more frequently played other types of games with the individual they identified tended to make less prosocial choices. Since playing action-type games and exploration-type games were positively associated with prosocial score, it makes sense that playing other types of games would have an association in the opposite direction.

Relationship type, relationship quality, and relational maintenance were all also significantly related to prosocial score. Relationship quality and relational maintenance were both positively correlated with prosocial score. Using the same reasoning as for a

relationship's effect on aggression, this may be because individuals in positive relationships and who more actively work to maintain those relationships have increased their positive cognitions over all, making them more likely to make prosocial choices. However, this argument cannot be applied to relationship type, as those in romantic relationships with the other they identified were less likely to make prosocial choices. This association between relationship type and prosocial score may be related to the interaction effect between partner sex and condition. Since most of participants who participated in this study were female, it is likely that many of those in romantic relationships were female participants who identified a male partner. Considering this, it follows that relationship type would have a similar association with prosocial score as partner sex.

There were also two significant covariates included in the ANCOVA model that measured a participant's response to the assigned video itself. Video violence was negatively correlated with prosocial score, with those who rated the assigned video as more violent tending to make less prosocial choices. This is consistent with the body of literature concerning the effects of violent video games, with increased perceptions of violence leading to decreased prosocial cognitions and behaviors (Greitemeyer & Osswald, 2011; Passmore & Holder, 2014). The relationship between frustration and prosocial score, however, was opposite from what was expected. Participants who indicated they felt more frustrated tended to make more prosocial choices. This is in contrast to research that argues frustration should lead to increased aggression and decreased cooperation, or decreased prosocial behavior in general (Eastin, 2007). It may be that the prosocial media effects of the assigned video had a greater influence than the

negative effects that arise from feelings of frustration, but the true cause of this relationship is unclear as of now.

Positive Affect

Because of the reciprocal relationship between prosocial behavior and mood (Snippe et al., 2018), it was predicted that, if exposure to the cooperative condition led to increased prosocial behavior, then it should also lead to increased positive affect. Or, in other words, this thesis hypothesized participants who watched the cooperative video would have a greater increase in positive affect than participants who watched the competitive video. This hypothesis was not only rejected due to a lack of significance, but also because the relationship between condition and positive affect was the opposite of what was expected: participants in the cooperative condition actually showed a greater decrease in positive affect than those in competitive condition. Additionally, participants in both conditions reported a negative change in positive affect after exposure to the assigned video. This may be due to some qualities of the videos themselves. Perhaps participants did not enjoy watching the videos or found them to be boring, or maybe participants were put off by the violent video game content that the videos displayed. Also, having participants watch a recording of the game removed the opportunity for them to experience increased positive affect from the enjoyment of playing the game with the individual they identified.

An ANCOVA test was also performed to account for possible third variables, and it too found the difference in positive affect change between conditions to be non-significant. However, it did identify a significant main effect for sex on positive affect change. Female participants showed a significantly greater decrease in positive affect

than did male participants. This result was unexpected, as there is no clear evidence that males and females significantly differ in their levels of positive affect (Batz & Tay, 2018). It may be that this effect is due to a difference in familiarity with violent video games similar to *Gears of War*. As mentioned previously, only 14% of women claim they play video games from the shooter genre, as compared to 42% of men (Sinclair, 2020).

The ANCOVA model also showed that the sex of the imagined partner was significantly related to change in positive affect, with this being one of the 18 significant covariates identified (See Table 35). Consistent with the findings discussed above, participants who identified their imagined partner as male were more likely to report a more positive, or at least less negative, change in positive affect than participants who

Table 35 Direction of Covariate Relationships with Positive Affect Change*

Covariate	Direction	<i>p</i>
Age	Positive	0.007
Partner Sex	Positive	0.002
Openness	Positive	0.002
Neuroticism	Negative	0.015
PTM Anonymous	Negative	0.030
PTM Public	Positive	0.026
PTM Emotion	Negative	0.011
Gaming Video Frequency	Positive	< 0.001
Twitch Prime	Positive	0.018
Video Support	Positive	0.004
Played <i>Gears of War</i>	Positive	< 0.001
Other Games Ind	Negative	0.015
Play Together Online	Negative	< 0.001
Action-Type Games Pair	Positive	0.032
Other Games Pair	Positive	0.003
Relationship Type	Positive	0.011
Video Violence	Negative	0.016
Enjoyment	Positive	0.025

*The directions of these relationships are based on simple, bi-variate correlations, which can be found in Table 40 [See Appendix K].

identified their partner as female. Another demographic variable that was significantly related to positive affect change was age, with age being positively correlated to one's change in positive affect. However, this does not necessarily mean that older participants were more likely to experience increased positive affect. While recent research has shown that people tend to display higher positive affect as they age, the same study provides evidence that older individuals are more emotionally stable (Burr et al., 2020). Based on this, it may be that older participants in the study were simply more resistant to change in their positive affect.

Of the Big Five factors of personality, two were shown to be significantly related to positive affect change: openness and neuroticism. Openness had a positive correlation with one's change in positive affect. Since openness reflects an individual's acceptance of feelings and new ideas and flexibility of thought (Digman, 1990), it may be that those high in openness were less influenced by a lack of familiarity with the violent content in the video, leading to a more positive change in positive affect. In contrast, neuroticism was negatively correlated with positive affect change. High neuroticism is associated with a lack of emotional stability, so it is reasonable that neuroticism would be significantly related to one's change in positive affect. Additionally, those high in neuroticism are more likely to display irritable and moody behavior, which may explain why the relationship with positive affect change is a negative one.

There were also three types of prosocial tendencies that the model identified as having significant relationships with positive affect change: engaging in anonymous, public, and emotional prosocial behaviors. As discussed previously, research has shown that there is a reciprocal relationship between mood and prosocial behavior. Because of

this, it is not surprising that several factors of prosocial tendency are significantly related to one's change in positive affect. However, as with aggression, it is conceptually difficult to reason why the relationships might occur with these three factors specifically. As such, further research may be necessary to explain why these relationships exist.

Variables related to online video viewing and individual gaming habits further support the argument that one's familiarity with the content of the assigned video may have influenced their change in positive affect. According to the ANCOVA model, the frequency that one watches others play video games online, having previously played a *Gears of War* game, and playing other types of video games were all significantly related to positive affect change. Watching others play video games online was positively correlated with change in positive affect, and participants who had previously played a game from the *Gears of War* franchise experienced more positive changes in positive affect than those who hadn't. These relationships both provide evidence for the influence of familiarity. Playing other types of games, in contrast, was negatively associated with positive affect change. This means that participants who more frequently play other types of video games displayed more negative changes in positive affect. If one can infer that more time spent playing other types of games means less time spent playing games similar to *Gears of War*, then this can also be used to support the argument for the impact that familiarity had on one's change in positive affect during this study.

In addition, the two variables that involved contributing money to independent, online-video creators (having a *Twitch Prime* account, monetary support for online content creators) were also significantly related to positive affect change. Participants who had a *Twitch Prime* account tended to have more positive changes in positive affect,

and monetarily supporting online video creators was positively correlated with positive affect change. This could again have to do with the reciprocal relationship between prosocial behavior and mood, as both of these variables were also positively correlated with prosocial score. Also, *Twitch* is a platform that is mainly used to watch others play video games, so having a *Twitch Prime* subscription would indicate further familiarity with the type of content displayed in the assigned videos.

As for interpersonal gaming habits, the ANCOVA model showed that playing video games together online, playing action-type games together, and playing other types of games together were all significantly related to positive affect change. Playing video games online together was negatively correlated to positive affect change, with participants who more frequently played video games online with the individual they identified tending to have a more negative, or less positive, change in positive affect. This goes counter to the argument that those more familiar with the content shown in the videos should display more positive changes in positive affect, as the assigned videos depicted two individuals playing a game together online. However, it could also be that these participants viewed the assigned videos as less enjoyable when compared to actually playing a video game together, leading to a decrease in positive affect. Playing action-type games together and playing other types of games together were both positively correlated with positive affect change. The relationship with playing action-type games is consistent with this study's other findings, as *Gears of War* can be classified as an action-type game itself. However, the positive relationship with playing other types of games together contradicts the finding that playing other types of games as an individual is negatively associated with positive affect change. It could be argued that

playing any types of games together would be similar to the content of the assigned videos, causing increased familiarity and leading to a greater increase in positive affect. However, playing video games together online was negatively correlated to one's change in positive affect, refuting this argument. As such, it is unclear why playing one type of game individually and playing the same type of game as a pair would result in opposite relationships with the same variable.

Relationship type was also a significant covariate in the ANCOVA model. Participants in romantic relationships with the other they identified tended to have a more negative, or less positive, change in positive affect than those in non-romantic relationships. During the study, participants were asked to identify an individual with whom they often play video games, or, if there is no such person, someone with whom they have a close relationship. It may be that those who chose someone with whom they have a romantic relationship chose this second option, while the non-romantic relationships tended to be between individuals who do usually play video games together. If this is this case, then this would also support the argument that familiarity with gaming content has an influence on positive attitude change.

Finally, two variables that measured participants' attitudes towards the assigned videos were shown to be significantly related to positive affect change. The first of these, video violence, was negatively correlated to change in positive affect. If participants were unaccustomed to or put-off by the violent content of the video, then it is reasonable that those who perceived the video as more violent would experience a greater decrease in positive affect. The other variable, enjoyment, was positively correlated to positive affect change. Because of the variables identified by the ANCOVA model, this thesis proposes

that an individual's enjoyment was dependent on their familiarity with the content of the assigned video, and this enjoyment influenced their change in positive affect. However, further research would be necessary to examine the existence of this relationship.

Negative Affect

Following similar reasoning to the hypothesis for positive affect, this thesis predicted that participants who watched the cooperative video would have a larger decrease in negative affect than those who watched the competitive video. Upon the initial analysis, it was found that participants in the cooperative condition did have a significantly larger decrease in negative affect than participants in the competitive condition. However, when accounting for potential third variables, this relationship was no longer significant. Instead, the analysis found there to be a significant interaction effect between condition and sex on negative affect change. Male participants in the cooperative condition had, on average, a larger decrease in negative affect than female participants, but male participants in the competitive condition had, on average, an increase in negative affect while female participants had a small decrease in negative affect. It is interesting that this interaction exists for negative affect but not for positive affect. It may be that familiarity with the content of the videos had less of an influence on negative affect, resulting in a difference in the average negative affect change between conditions for female participants, whereas there was no difference for the average change in positive affect.

Of the twenty-six variables included as covariates in the ANCOVA model, twenty-one showed a significant relationship to negative affect change (See Table 36). Of these, age was positively correlated with negative affect change. However, this is

misleading. Upon further investigation, it is not that older participants had a greater increase in negative affect, but rather that younger participants had a greater change in negative affect overall, regardless of direction. This is consistent with previous research that has shown that individual tend to become more emotionally stable as they age (Burr et al., 2020).

The only factor of personality that was shown to be significantly related to negative affect change is neuroticism. Neuroticism was negatively correlated with change in negative affect, with more highly neurotic participants tending to have a larger

Table 36 Direction of Covariate Relationships with Negative Affect Change*

Covariate	Direction	<i>p</i>
Age	Positive	0.015
Neuroticism	Negative	0.030
PTM Altruism	Positive	0.036
PTM Anonymous	Positive	< 0.001
PTM Public	Negative	0.010
PTM Emotion	Negative	0.011
PTM Dire	Negative	< 0.001
Gaming Video Frequency	Negative	< 0.001
Twitch Prime	Positive	< 0.001
Video Support	Positive	< 0.001
Other Video Services	Positive	0.001
Played <i>Gears of War</i>	Positive	0.032
Action-Type Games Ind	Negative	0.001
Other Games Ind	Positive	< 0.001
Play Together in Person	Negative	0.008
Exploration-Type Games Pair	Negative	0.009
Rel. Maintenance Gaming	Positive	< 0.001
Relational Maintenance	Negative	0.024
Enjoyment	Negative	0.050
Frustration	Negative	0.017
Identification	Negative	0.003

*The directions of these relationships are based on simple, bi-variate correlations, which can be found in Table 41 [See Appendix L].

decrease in negative affect. While one might expect high neuroticism to predict larger changes in negative affect regardless of direction, participants overwhelmingly tended to display a decrease in negative affect. As such, this is consistent with neuroticism's association with emotional instability.

The model also identified five of the six factors of prosocial tendency as being significantly related to negative affect change. The tendency to engage in altruistic and anonymous prosocial behaviors was positively correlated with change in negative affect, while the tendency to engage in public, emotional, and direct prosocial behaviors was negatively correlated with negative affect change. Similar to the discussion on positive affect change, these variables were likely included in the model due to the reciprocal relationship between prosocial behavior and mood. Again, though, further research is necessary to explain the true nature of the relationships between these variables.

As for variables related to an individual's online video viewing habits, the frequency that one watches others play video games online, having a *Twitch Prime* account, supporting online video creators, and watching videos on other online streaming services were all shown to be significantly related to negative affect change. Watching videos of others playing video games online was negatively correlated with change in negative affect, with participants who spend more time watching videos of others playing video games tending to have a larger decrease in negative affect. This could again have to do with familiarity and enjoyment, as these participants already seek out content similar to what was displayed in the assigned videos for entertainment. However, having a *Twitch Prime* account and monetarily supporting online content creators were positively correlated with negative affect change. This implies that participants who are used to

contributing money to online video producers tended to either have a higher increase in negative affect or a less negative decrease. It may be that these individuals are used to higher quality content, which they would be willing to contribute money towards, than what was displayed in the assigned videos, resulting in greater negative affect. Watching videos on other online streaming services was also positively correlated to negative affect change. These streaming services include *Twitch*, so it follows that this variable would have a similar relationship with negative affect change as having a *Twitch Prime* subscription.

Individual gaming habits such as having previously played a game from the *Gears of War* franchise, playing action-type games, and playing other types of games were also significantly related to negative affect change. Having previously played a *Gears of War* game was positively associated with negative affect change, while playing action-type games in general had a negative association. This might be because participants who had already played a game from the *Gears of War* franchise would rather be playing the game than watching a video of it, while those who play action-type games but have never played a *Gears of War* game may have been more interested in watching a game they have not personally experienced before. Participants who more frequently play other types of games tended to report higher increases or smaller decreases in negative affect. This might also be due to a lack of interest or familiarity with the content of the assigned video.

For interpersonal gaming habits, the ANCOVA model identified playing together in-person, playing exploration-type games together, and engaging in relational maintenance behaviors while gaming as being significantly related to negative affect

change. Playing video games together in-person was negatively related to negative affect change. Participants who more frequently play video games in-person with the individual they identified tended to report greater decreases in negative affect. It may be that these participants were better able to imagine that they and the individual they identified were the players in the video, making the experience more enjoyable. Playing exploration-type games was also negatively associated with negative affect change. While *Gears of War* more neatly fits into the category of action-type games, various aspects of gaming tend to cross genres. For example, there are many exploration-type games that involve shooting mechanics or that would be considered violent. As such, this relationship might also be due to enjoyment stemming from familiarity. Lastly, participants who tend to engage in more relational maintenance behaviors while gaming displayed greater increases, or smaller decreases, in negative affect. However, general relational maintenance behaviors were also shown to be significantly related to negative affect change, but in an opposite direction. Participants who more frequently engage in relational maintenance behaviors in their relationship tended to display greater decreases in negative affect. It is unclear why general maintenance behaviors would be associated with lower negative affect while maintenance behaviors related to gaming specifically is associated with higher negative affect.

There were also three significant covariates included in the ANCOVA model that measured a participant's response to the assigned video itself. Enjoyment, frustration, and identification were all negatively associated with change in negative affect. This relationship is expected for enjoyment, as one would assume that negative affect should go down as enjoyment goes up. However, the relationship between one's change in

negative affect and frustration is the opposite of what was expected, especially since “I feel frustrated” was one of the items used to measure negative affect. It is unclear why these two variables were negatively correlated, but it may have to do with the fact that almost all participants experienced both a decrease in positive affect and a decrease in negative affect, regardless of condition. This might be due to a regression to the mean between pre-test and post-test, or perhaps participants defaulted to more neutral responses as they proceeded further into the study. Finally, the relationship between identification and negative affect change may be a result of being better able to imagine that a participant and the individual they identified were the players in the video, making the experience more enjoyable.

Relationship Quality

It was also hypothesized that participants in the cooperative condition would have a more positive change in their perception of relationship quality, on average, than individuals in the competitive condition. This prediction was based on previous research that has shown that both prosocial goals and positive mood can lead to increased relationship quality. Firstly, research on interpersonal relationships has shown that individuals who pursue benevolent goals report greater feelings of satisfaction, commitment and trust (Crocker et al., 2017). Pursuing benevolent goals can be considered a type of prosocial behavior; and, if watching a video game being played in a cooperative context leads to increased prosocial behavior, then it should also lead to increased perceptions of relationship quality. Secondly, increased positive emotions have been shown to lead to improved social relationships (Abbasi et al., 2018; Bradley & Hojjat, 2017; Dunn & Schweitzer, 2006). As with prosocial behavior, if viewing a video

game being played cooperatively increases feelings of positive affect, then it should further contribute to an increase in one's perception of relationship quality. However, the initial analysis showed no significant difference in average relationship quality change between the two conditions.

An ANCOVA test was also performed to account for possible third variables, and this analysis found that there was a significant main effect for condition on perceived relationship quality change, with participants who watched the competitive gameplay video reporting a greater decrease in perceived relationship quality, on average, than those in the cooperative condition. Additionally, this model found a significant interaction effect between condition and partner sex. Individuals in the cooperative condition who identified their partner as female averaged a greater positive change in perceived relationship quality than did those in the competitive condition. In contrast, individuals in the cooperative condition who identified their partner as male averaged a greater *decrease* in perceived relationship quality than did those in the competitive condition. While there was no main effect for partner sex, individuals who identified their partner as female averaged an increase in perceived relationship quality in both conditions, and those who identified their partner as male averaged a decrease in perceived relationship quality in both conditions. It is unclear why this interaction effect exists, but it may be that it was easier for participants to attribute the violent actions displayed in the gameplay videos to males than to females. Not only are men perceived as more likely to play violent video games and be more physically aggressive (Plante et al., 2020), but the player characters in the assigned videos were both males. In addition, this attribution may have overridden the effects of any prosocial behaviors displayed in the

videos. If this was the case, then it would explain why even those in the cooperative condition who identified their partner as male experienced a decrease in relationship quality.

A total of 13 covariates showed a significant relationship to perceived relationship quality change (See Table 37). One such covariate was sex of the participant. However, male participants tended to display greater increases, or smaller decreases, in perceived relationship quality than did female participants. This is opposite from the relationship between partner sex and perceived quality change. One possible explanation for this relationship might have to do with the possible influence of familiarity and affect. As was discussed in the section on positive affect, participants who were unfamiliar with the

Table 37 Direction of Covariate Relationships with Perceived Relationship Quality Change*

Covariate	Direction	<i>p</i>
Age	Negative	< 0.001
Sex	Positive	< 0.001
Neuroticism	Negative	0.001
Negative Affect (Pre)	Negative	< 0.001
PTM Anonymous	Negative	< 0.001
PTM Emotion	Negative	< 0.001
PTM Compliant	Negative	< 0.001
Other Games Ind	Negative	0.042
Exploration-Type Games Pair	Positive	0.048
Relationship Type	Negative	< 0.001
Enjoyment	Positive	0.016
Frustration	Negative	0.004
Identification	Positive	0.017

*The directions of these relationships are based on simple, bi-variate correlations, which can be found in Table 42 [See Appendix M].

violent content of the assigned videos may have been more negatively affected. This may have also affected perceptions of relationship quality, as previous research has shown a positive association between positive affect and relationship quality. Another demographic variable shown to be significantly associated with relationship quality change was age. Age was negatively correlated with relationship quality change, with older participants tending to have a greater decrease in perceived relationship quality. It would have been assumed that older participants would have had longer lasting and more stable relationships; but this relationship was not completely unexpected, as age was also negatively correlated with prosocial score. As mentioned, when discussing prosocial score, a possible explanation for this association is that older participants might have less experience with more modern, graphically violent video games; with this lack of familiarity resulting in increased negative media effects after viewing the assigned video.

In regards to the Big Five factors of personality, only neuroticism had a significant relationship with relationship quality change. Neuroticism was negatively associated with change in perceived relationship quality, with more highly neurotic participants tending to have greater decreases in perceived relationship quality. While this is opposite from the correlation between neuroticism and prosocial score, it is in the same direction as the correlation with positive affect. As such, this relationship is most likely due to neuroticism being an indicator of emotional instability.

Since increased positive emotions have been shown to lead to improved social relationships (Abbasi et al., 2018; Bradley & Hojjat, 2017; Dunn & Schweitzer, 2006), this thesis also hypothesized that positive and negative affect would be significant covariates for relationship quality change. Although both positive and negative affect

were included in the final ANCOVA model, only negative affect was identified as a significant covariate. Participants who reported higher levels of negative affect tended to experience a greater decrease in perceived relationship quality. This supports the relationship found in previous research, with decreased mood leading to more negative perceptions of relationship quality.

The ANCOVA model also identified three of the six factors of prosocial tendency as being significantly related to relationship quality change. The tendencies to engage in anonymous, emotional, and compliant prosocial behaviors were all negatively correlated with one's change in perceived relationship quality. Anonymous and emotional prosocial tendencies were also negatively correlated with prosocial score. If prosocial behavior truly leads to more positive perceptions of relationship quality, then it follows that variables associated with decreased prosocial behavior should also be associated with more negative perceptions of relationship quality.

No variables related to an individual's online video viewing habits were significantly associated with relationship quality change, but there were two variables related to gaming habits that the model showed to be significant covariates: playing other types of games as an individual and playing exploration-type games together. Playing other types of games as an individual was negatively correlated with one's change in perceived relationship quality. This may again be due to a lack of familiarity leading to decreased positive affect, and thus negatively affecting perceptions of relationship quality. Comparatively, playing exploration-type games together was positively correlated to change in perceived relationship quality. As discussed previously, *Gears of War* shares several aspects that are common in both action-type and exploration-type

games. Therefore, this relationship could also be as result of some participants being more familiar with the content displayed in the assigned videos. In addition, participants who more frequently play games with the individual they identified may have been better able to identify cooperative gaming behaviors performed in the recordings, and participants who were better able to recognize prosocial behaviors may have been more influenced by the associated media effects.

Relationship type was also a significant covariate in the ANCOVA model. Participants in a romantic relationship with the individual they identified experienced greater negative, or at least less positive, changes in perceived relationship quality. This may be a consequence of the interaction effect between partner sex and condition. As discussed previously, participants who identified their partners as male experienced decreases in perceived relationship quality, while those who identified their partner as female reported increases in relationship quality. Considering that a majority of participants included in this study were female, it is likely that a large percentage of those in romantic relationships were female participants who identified a male partner. Given this, the association between relationship type and perceived relationship quality change might also be because it was easier for participants to attribute the violent actions displayed in the gameplay videos to males than females.

Finally, the ANCOVA model identified three covariates that measured a participant's response to the assigned video itself. Enjoyment, frustration, and identification were all significantly related to relationship quality change. Enjoyment was positively correlated with one's change in perceived relationship quality. This is likely due to the relationship between enjoyment and positive affect, again connecting to the

idea that positive emotions lead to improved social relationships. This reasoning also applies to the association between frustration and relationship quality change, which was negative. If feelings of frustration can be considered as a negative emotion, then it follows that these negative emotions should lead to worsened social relationships. Lastly, identification was positively associated with one's change in perceived relationship quality. It is unclear why this relationship exists, as one would expect that participants who were better able to identify with the players in the video would exhibit the most extreme change in relationship quality, regardless of direction. However, this does not appear to be the case.

Personality

Previously, this study questioned how personality might be related to the five dependent variables being investigated. During the literature review, this thesis mainly focused on the relationship between personality and prosocial behavior. Previous research has consistently shown that neuroticism and agreeableness are positively correlated with prosocial behavior, with neurotic individuals tending to be competition adverse (Al-Ubaydli, 2016; Kirkcaldy & Furnham, 1991; Müller & Schwier, 2012; Ryckman et al., 2009). There was also some evidence of a positive association between openness and cooperation; however, there has not been much research into this relationship. Of the five factors of personality, the ANCOVA model for the effect of condition on prosocial score identified neuroticism and openness as significant covariates. Neuroticism was positively associated with prosocial score, in agreement with previous research, but the association between openness and prosocial score was negative. While this relationship with openness is opposite from what was expected,

openness is the one dimension of personality for which the literature review found the least existing research. As such, another study may be necessary to identify the true relationship between openness and prosocial behavior.

In the model for state hostility, conscientiousness, extraversion, and agreeableness were all included as significant covariates. Conscientiousness and agreeableness were both negatively correlated with state hostility, and extraversion was positively correlated with state hostility. These findings for agreeableness and extraversion are supported by the existing literature, which has shown a strong, negative correlation between agreeableness and aggression and a slightly positive correlation for extraversion (Bartlett & Anderson, 2004). However, conscientiousness has not been shown to be significantly related to state hostility or aggression in general. Conceptually, conscientiousness is associated with one's sense of responsibility and foresight (Grice, 2019). As such, it is reasonable to assume that more responsible individuals would be less likely to act aggressively, possibly accounting for this relationship between conscientiousness and state hostility. Openness was also included in this ANCOVA model, but it was not a significant covariate.

Both openness and neuroticism were included as significant covariates in the ANCOVA model for the effect of condition on positive affect change. Openness was positively correlated with one's change in positive affect, while neuroticism was negatively correlated with positive affect change. It may be that participants who scored high in openness were less influenced by a lack of familiarity with the violent, gaming content displayed in the assigned videos, leading to a less negative reaction and thus a more positive change in positive affect. This is due to openness being associated with

one's acceptance of feelings and new ideas (Digman, 1990). Comparatively, high neuroticism is associated with a lack of emotional stability and irritable and moody behavior. This might explain why more highly neurotic participants tended to have a greater, negative change in positive affect.

However, neuroticism was also negatively correlated with one's change in negative affect. Of the Big Five factors of personality, neuroticism was the only one included as a significant covariate in the ANCOVA model for negative affect change, but it is unclear why higher neuroticism would lead to decreases in both positive and negative affect. It may be that neuroticism simply acted as a measure of emotional instability, leading to greater overall changes in affect while some other factor influenced the direction of the change. Openness was also included as a covariate in this model and was nearly significant ($p = .051$). Openness was negatively associated with negative affect change, and thus might be a better indicator of the direction of affective change than neuroticism. Lastly, conscientiousness was included in the ANCOVA model for negative affect change, but it was not a significant covariate.

The ANCOVA model for relationship quality change also only included neuroticism as a significant covariate. Neuroticism was negatively correlated with relationship quality change, with more highly neurotic participants tending to experience greater decreases in perceived relationship quality. Again, this is likely due to neuroticism being an indicator of emotional instability as well as irritable and moody behavior.

Of the Big Five factors of personality, openness and neuroticism were the most frequently correlated with the five dependent variables included in this study. Openness

was a significant covariate in the ANCOVA models for the effect of condition on prosocial score and positive affect change, and was nearly a significant covariate in the model for negative affect change. This thesis argues that the relationship of openness with these variables is likely due to participants being more accepting of unfamiliar forms of media. Meanwhile, neuroticism was a significant covariate in the ANCOVA models for prosocial score, positive affect change, negative affect change, and change in perceived relationship quality. The influence of neuroticism on these variables is most likely a result of more highly neurotic participants being more emotionally unstable and irritable. Regardless, it seems clear that one's personality is significantly associated with each of the five dependent variables in some way.

Conclusions

While the initial results of this study mostly failed in supporting its hypotheses, that does not mean that this investigation was without merit. Through secondary analyses, this thesis identified the sex of the participant and the sex of their imagined partner as influential factors, having significant main and interaction effects for all five of the dependent variables. In addition, this study was able to show that individual factors such as media usage habits and personality significantly covaried with the dependent variables being investigated. Lastly, while this study was unable to replicate findings from the existing literature on the effects of playing violent video games, the conclusions drawn from the present research might indicate that watching footage of a video game being played by someone else might lead to its own discrete media effects.

For both state hostility and positive affect change, this study found results that were unexpected. According to previous research, males tend to report higher aggression

than females (Archer, 2004). Additionally, male and female levels of aggression should be equally affected when exposed to the same violent media (Plante et al., 2020). However, this study found a significant main effect for sex on state hostility, with female participants reporting higher average state hostility than males. As for positive affect change, the existing literature has failed to show significant sex differences (Batz & Tay, 2018). In spite of these findings, this study also identified a significant main effect for sex on positive affect change; female participants experienced greater decreases in positive affect than did males.

This thesis argues that these unexpected effects for sex are likely due to a difference in familiarity with the violent, gaming content displayed in the assigned videos. This argument has two main pillars of support. First, there is real world evidence that males and females play different types of video games. According to one survey, only 14% of women claim they play video games from the shooter genre, as oppose to 42% of men (Sinclair, 2020). Second, the ANCOVA models for both state hostility and positive affect change identified several pre-existing gaming habits as significant covariates. For both dependent variables, having played or watched others play video games similar to *Gears of War* was negatively associated with state hostility and positively associated with positive affect change. Furthermore, having played video games that were not similar to *Gears of War* was negatively associated with positive affect change. Given that males more often play shooting-genre video games that are similar to what was shown in the assigned videos, these results provide evidence that the effects for sex on state hostility and positive affect change might actually be due to differences in familiarity with the content displayed.

This study also found a significant interaction effect between condition and sex for negative affect change. In the cooperative condition, male participants averaged a larger decrease in negative affect than did females, but male participants in the competitive condition averaged an increase in negative affect while female participants averaged a small decrease. It is unclear why this interaction effect exists for negative affect change but not positive affect change. One explanation may be that familiarity with a media has less of an influence on feelings of negative affect. While someone might need to understand something in order to enjoy it, negative evaluations probably do not require prior experiences. This is supported by the ANCOVA model, which showed that covariates related to gaming habits were much less consistent in the directions of their associations with negative affect change. In other words, some covariates were negatively associated with negative affect change while others were positively associated. In addition, the more a participant enjoyed viewing their assigned video the more likely they were to experience a decrease in negative affect. These results might also be a result of sex differences in negative affect. Research has shown that women do tend to report higher negative affect than men, with women likely exacerbating their negative mood through more frequent rumination (Thomsen et al., 2005). However, this would lead one to expect female participants to average a lower decrease / higher increase in negative affect than males across both conditions. It is likely that the interaction effect described is due to a combination of several factors, including familiarity, sex differences, and enjoyment. It should be noted, though, that most participants experienced a decrease in both positive and negative affect. As such, regression to the mean and respondent fatigue should be considered when drawing conclusions from these results.

Aside from the sex of the participant, the sex of one's partner was also shown to be influential. This study found a significant interaction effect between condition and partner sex for both prosocial score and relationship quality change. Beginning with the effect on prosocial score, individuals in the cooperative condition who identified their imagined partner as female made more prosocial choices, on average, than did individuals in the same condition who identified their partner as male. In contrast, participants in the competitive condition who identified their partner as female averaged less prosocial choices than those who identified their partner as male. Interestingly, the sex of the participant was not included as a significant covariate in the ANCOVA model for prosocial score, suggesting that the sex of the person an individual is playing a video game with is more consequential in regards to prosocial behavior than is the sex of the individual themselves. It is not clear why this interaction effect occurred, as the existing literature does not appear to fully explore what influence the sex of an individual's gaming partner might have on prosocial behavior, or even media effects in general.

As for relationship quality, participants who identified their partner as female in the cooperative condition averaged a greater positive change in perceived relationship quality than did those in the competitive condition. Meanwhile, participants who identified their partner as male in the cooperative condition averaged a greater decrease in perceived relationship quality than those in the competitive condition. Additionally, participants who identified a male partner averaged a decrease in perceived relationship quality for both conditions, while those who identified a female partner averaged an increase in perceived relationship quality for both conditions. One possible explanation for this is that it may have been easier for participants to attribute the violent actions

displayed in the gameplay videos to males than to females. Men are generally perceived as being more likely to play violent video games and as being more physically aggressive (Plante et al., 2020). Furthermore, the characters in the assigned videos were both male. This attribution may have overridden the positive effects of any prosocial behaviors displayed in the videos, explaining why even those in the cooperative condition who identified their partner as male experienced a decrease in relationship quality.

While media usage habits have already been discussed in regards to their association with state hostility and positive and negative affect change, they were also shown to significantly co-vary with prosocial score and relationship quality change. Having financially contributed to an online content creator was positively correlated with prosocial score, most likely indicating a predisposition towards acting prosocially, either in general or in response to watching an online video. Having played games similar to *Gears of War* was also positively associated with the number of prosocial choices made, but having previously played a *Gears of War* game was negatively associated with prosocial score. It is unclear why this difference between general and specific familiarity with the content displayed in the gameplay videos exists. As for relationship quality, having played video games similar to *Gears of War* was positively associated with perceived relationship quality change, while having played games that are not similar to *Gears of War* was negatively associated with perceived relationship quality change. However, few factors related to media usage habits were identified as significantly co-varying with relationship quality change, so the influence of media familiarity on perceived relationship quality change cannot be stated with confidence.

Another major finding of this thesis was that at least one dimension of the Big Five factors of personality significantly co-varied with each of the five dependent variables. Discussed in more detail previously, openness and neuroticism were the dimensions of personality that were most frequently identified as significant covariates. Openness was positively associated with positive affect change and negatively associated with negative affect change and prosocial score. While the relationship with prosocial score is the opposite from what was expected, this thesis argues that the relationship between openness and positive and negative affect change is likely due to more open participants being more accepting of unfamiliar forms of media. Meanwhile, neuroticism was positively associated with prosocial score and negatively associated with positive affect change, negative affect change, and change in perceived relationship quality. This association with prosocial score is consistent with previous research that has shown that highly neurotic individuals tend to avoid competitive behaviors (Al-Ubaydli, 2016; Kirkcaldy & Furnham, 1991; Müller & Schwieren, 2012; Ryckman et al., 2009). The other associations are likely a result of more highly neurotic individuals being more irritable and emotionally unstable. As a whole, these findings indicate that future research should ensure that the dimensions of personality are accounted for due to their pervasiveness as significant covariates

Even though this study failed to replicate results found by previous research on the effects of playing violent video games, this is likely due, at least in part, to differences between playing a video game and watching footage of someone else playing the same game. For instance, the effect of cooperative play on prosocial behavior is thought to be the result of increased interaction through the pursuit of a common goal (Komorita &

Park, 1995). Similarly, competitive play requires at least two individuals actively working against each other. However, watching a recording of someone else playing a game removes the possibility for interaction that is inherent to playing a game oneself. This may explain why this thesis was unable to find a significant difference between conditions for state hostility and prosocial score. Also, watching a video game being played online has been shown to involve a different category of relationships. When playing a video game cooperatively or competitively, the two players have an opportunity to develop an interpersonal relationship. In contrast, watching a video game being played on *YouTube* or *Twitch* can lead to a parasocial relationship between the viewer and content creator (Lim et al., 2020). While an interpersonal relationship is characterized by the direct interaction between two individuals, a parasocial relationship is a one-sided relationship that an audience member develops towards a media personality (Lim et al., 2020). Since watching footage of a video game being played by someone else requires less interactivity and involves parasocial rather than interpersonal relationships, this thesis argues that online gaming content, especially in regards to livestreaming services such as *YouTube* and *Twitch*, should be investigated as its own distinct form of media.

Limitations

The major limitations of this study include the small number of participants, measurement issues, and a lack of ecological validity. To start, the small number of participants impacted this study in several ways. For example, participants in the cooperative and competitive conditions did display differences in state hostility and prosocial score that were consistent with this thesis's hypotheses, but these differences were not significant. Given a larger sample size, this study may have been able to show

that state hostility and prosocial score did significantly differ between conditions. The small sample size also limits the validity of this study's secondary analyses. Specifically, this research made use of 2 x 2 ANCOVAs, which should have at least 20 participants included in each group. Assuming participants were equally distributed between the four groups, this study should have had a sample size of at least 80, much more than the 45 participants who completed this study. Additionally, the ANCOVA models included more covariates than is typically acceptable given the current sample size. This was done because this thesis was more concerned with identifying all potential covariates and maximizing the amount of variance explained; however, the inclusion of so many third variables limits the robustness of this study's findings.

Another limitation of this thesis might involve how prosocial behavior was measured. In the existing literature, prosocial behavior is often dependent on the prospect of future interaction. Participants are typically given Prisoner's Dilemma-type tasks, or they are asked to take actions that they are told will make a future participant's experience easier or more difficult (Passmore & Holder, 2014). However, due to the all-online nature of this study, these methods could not be used. Instead, a measure for prosocial behavior was devised using items that assessed prosociality in a different context (Carlo et al., 1992). This could explain why this study's measure for prosocial score had such low internal consistency. While this thesis argued that internal consistency is not applicable due to the items being a record of observable behaviors, it is possible that the low internal consistency, or the way prosocial behavior was measured in general, could have resulted in the lack of significant findings.

The last major limitation of this study is that it lacks ecological validity. Since the study was conducted completely online, there was no way to guarantee that participants watched the assigned videos in their entirety without distraction. Additionally, it could not be ensured that all participants completed the study under the same conditions. While some participants were excluded due to evidence that they did not watch their assigned video, it is unclear to what extent this lack of ecological validity affected the results of the study.

Directions for Future Research

There are two primary directions for future research in response to this study. The first of these is to focus on the effects of cooperative and competitive play, as was the initial intention of this thesis. To accomplish this, the experiment in this thesis should be adjusted to be conducted in an in-person laboratory setting. Not only will this allow for greater experimental control, but it will also involve participants playing the video game themselves rather than watching a recording online. This should create the opportunity for participants to interact with each other through the game, a component that previous research has argued is necessary for the prosocial effects of cooperation to occur. In addition, any future replications should be sure to include a greater sample size. The other primary direction for future research involves a more thorough investigation of live-streaming as a discrete form of media. As demonstrated by this study, watching footage of someone else playing a video game likely has different effects than does playing the same game oneself. Because of this, more research is necessary to establish what unique influences live-streamed media might have on its audience members.

There are also several avenues for future research that arose during the examination of this study's results. These include further investigating the influence of prosocial tendencies on the effects of viewing the competitive and cooperative play of violent video games. When analyzing the effect of condition on the dependent variables, this study found that at least two dimensions of prosocial tendencies were included as significant covariates in each of the five ANCOVA models. While this was expected for prosocial score and even relationship quality change, which should be influenced by patterns of prosocial behavior, it is unclear why the relationships between various prosocial tendencies and state hostility, positive affect change, and negative affect change exist in the directions that this study has shown. As such, this thesis argues that further research is necessary to determine the true nature of these relationships and whether there are any mediating or moderating variables involved.

The other avenue for future research involves the relationship between media familiarity, enjoyment, and affect. When discussing the ANCOVA model for positive affect change, this thesis reasoned that many of the significant covariates could be explained as indicating one's level of familiarity with the violent, gaming content displayed in the assigned videos. Additionally, it was argued that openness most likely influenced the media effects that result from watching competitive and cooperative video game play due to participants being more accepting of unfamiliar forms of media. In conjunction with enjoyment's significant correlation with both positive and negative affect change, this thesis proposes that one's familiarity with the content of the gameplay videos is associated with their enjoyment, and enjoyment then influences a participant's change in both positive and negative affect. While literature regarding the effects of

familiarity on liking and enjoyment already exists (e.g., mere exposure), further research is necessary to examine the relationships between familiarity, enjoyment, and affect both in general and in the context of viewing violent media.

Theoretical Implications. While the existing literature has found success using unique methods to operationalize prosocial behavior, this thesis found a lack of measures useful for assessing prosocial behavior in an online format. In response, this thesis argues that a more broadly applicable prosocial index is needed in respect to video game research. One suggestion for the development of such an index is to take inspiration from the existing literature on other forms of media and prosocial behavior in general.

Practical Implications. One of the main findings of this thesis is that watching video games being played by others likely results in media effects that differ from when one plays a video game themselves. This finding is especially important as online media content has become more popular over the past decade, with adolescents indicating they spend more time watching online, live-streamed content than traditional cable (Hu et al., 2017). However, communication research into this emerging field of entertainment has been limited. As such, this thesis hopes to inform future research on online video interactions and live-streaming video platforms like *Twitch*.

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APPENDIX A

THE INTERNATIONAL ENGLISH MINI-MARKERS (THOMPSON, 2008)

Please use the below list of common human traits to describe yourself as accurately as possible. Describe yourself as you really are compared to other people you know of the same age and sex, not as you wish to be. So, generally, is it accurate or inaccurate that you are:

- | | |
|-------------------|------------------|
| 1. Shy | 18. Emotional |
| 2. Talkative | 19. Anxious |
| 3. Energetic | 20. Unworried |
| 4. Quiet | 21. Jealous |
| 5. Extraverted | 22. Unenvious |
| 6. Outgoing | 23. Moody |
| 7. Reserved | 24. Unanxious |
| 8. Untalkative | 25. Efficient |
| 9. Creative | 26. Disorganized |
| 10. Intellectual | 27. Careless |
| 11. Unimaginative | 28. Untidy |
| 12. Artistic | 29. Neat |
| 13. Intelligent | 30. Inefficient |
| 14. Philosophical | 31. Systematic |
| 15. Deep | 32. Organized |
| 16. Uncreative | 33. Kind |
| 17. Envious | 34. Sympathetic |

Interval measure: Inaccurate (1) (2) (3) (4) (5) (6) (7) Accurate.

APPENDIX B

TRUST INVENTORY (DUNN & SCHWEITZER, 2005)

1. I would give _____ an important letter to mail after s/he mentions that s/he is stopping by the post office today.
2. If _____ promised to copy a presentation for me, s/he would follow through.
3. If _____ and I decided to meet for coffee, I would be certain s/he would be there.
4. I would expect _____ to tell me the truth if I asked him/her for feedback on an idea related to my job.
5. If _____ was late to a meeting, I would guess there was a good reason for the delay.
6. _____ would never intentionally misrepresent my point of view to others.
7. I would expect _____ to pay me back if I loaned him/her \$40.
8. If _____ laughed unexpectedly at something I did or said, I would know s/he was not being unkind.
9. If _____ gave me a compliment on my haircut I would believe s/he meant what was said.
10. If _____ borrowed something of value and returned it broken, s/he would offer to pay for the repairs.

APPENDIX C

VIDEO GAME PLAY AS RELATIONAL MAINTENANCE MEASURE

The following items ask about behaviors that you might engage in while playing video games with the individual you indicated. When responding to these items, think only about how often they occur with this individual while playing video games specifically.

When playing video games together, how often do you and this individual:

1. Express thanks when one of you does something nice for the other?
2. Try to make each other laugh?
3. Try to be upbeat and cheerful?
4. Reminisce about things you did together in the past?
5. Try to make the other person “feel good” about who they are?
6. Let each other know you accept them for who they are?
7. Share your private thoughts with each other?
8. Repair misunderstandings?
9. Give advice to each other?
10. Show signs of affection to each other?
11. Have intellectually stimulating conversations?
12. Do favors for each other?
13. Work together on jobs or tasks?

How often do you and this individual use video games to:

1. Support each other when one of you is going through a difficult time?
2. Provide each other with emotional support?
3. Make an effort to spend time together, even when you are busy?
4. Celebrate special occasions together?

Interval measure: Never (1) (2) (3) (4) (5) (6) (7) Very Frequently.

APPENDIX D

THE PANAS (WATSON, CLARK, & TELLEGEN, 1988)

This scale consists of a number of words that describe different feelings and emotions. Read each item and then mark the appropriate answer in the space next to that word. Indicate to what extent you feel this way right now, that is, at the present moment. Use the following scale to record your answers.

1	2	3	4	5	6	7
Very			Moderately			Extremely
slightly or						
not at all						

_____ interested	_____ irritable
_____ distressed	_____ alert
_____ excited	_____ ashamed
_____ upset	_____ inspired
_____ strong	_____ nervous
_____ guilty	_____ determined
_____ scared	_____ attentive
_____ hostile	_____ jittery
_____ enthusiastic	_____ active
_____ proud	_____ afraid

APPENDIX E

THE STATE HOSTILITY SCALE (ANDERSON, ET AL., 1995)

Please indicate the extent to which you agree or disagree with each of the following mood statements. Use the following 7-point rating scale:

1	2	3	4	5	6	7
Strongly			Neither			Strongly
Disagree			Agree nor			Agree
			Disagree			
1. I feel furious.						19. I feel like I'm about to explode.
2. I feel willful.						20. I feel friendly.
3. I feel aggravated.						21. I feel understanding.
4. I feel tender.						22. I feel amiable.
5. I feel stormy.						23. I feel mad.
6. I feel polite.						24. I feel mean.
7. I feel discontented.						25. I feel bitter.
8. I feel like banging on a table.						26. I feel burned up.
9. I feel irritated.						27. I feel like yelling at somebody.
10. I feel frustrated.						28. I feel cooperative.
11. I feel kindly.						29. I feel like swearing.
12. I feel unsociable.						30. I feel cruel.
13. I feel outraged.						31. I feel good-natured.
14. I feel agreeable.						32. I feel disagreeable.
15. I feel angry.						33. I feel enraged.
16. I feel offended.						34. I feel sympathetic.
17. I feel disgusted.						35. I feel vexed.
18. I feel tame.						

APPENDIX F

PROSOCIAL TENDENCIES MEASURE (CARLO & RANDALL, 2002)

Below are a number of statements that may or may not describe you. Please indicate how much each statement describes you by using the following scale:

1	2	3	4	5	6	7
Does Not Describe Me at All			Somewhat Describes Me			Describes Me Greatly

1. I can help others best when people are watching me.
2. It is most fulfilling to me when I can comfort someone who is very distressed.
3. When other people are around, it is easier for me to help needy others.
4. I think one of the best things about helping others is that it makes me look good.
5. I get the most out of helping others when it is done in front of others.
6. I tend to help people who are in a real crisis or need.
7. When people ask me to help them, I don't hesitate.
8. I prefer to donate money anonymously.
9. I tend to help people who hurt themselves badly.
10. I believe that donating goods or money is best when it is tax-deductible.
11. I tend to help needy others most when they don't know who helped them.
12. I tend to help others particularly when they are emotionally distressed.
13. Helping others when I am in the spotlight is when I work best.
14. It is easy for me to help others when they are in a dire situation.
15. Most of the time, I help others when they do not know who helped them.
16. I believe I should receive more recognition for the time and energy I spend on charity work.
17. I respond to helping others best when the situation is highly emotional.
18. I never hesitate to help others when they ask for it.
19. I think that helping others without them knowing is the best type of situation.
20. One of the best things about doing charity work is that it looks good on my resume.

21. Emotional situations make me want to help needy others.
22. I often make anonymous donations because they make me feel good.
23. I feel that if I help someone, they should help me in the future.

APPENDIX G

STORIES FROM THE OBJECTIVE MEASURE OF PROSOCIAL MORAL

REASONING (CARLO, ET AL., 1992; ELASCHUK, 1998)

Sandy's Story

Sandy was a student at a new school. One day, Sandy was walking into her new class early and saw an older girl teasing and making fun of another girl's clothes. The girl started crying. There was no one else around and Sandy did not know the girls very well, but she had heard that the girl who was crying was very poor and that the older girl had a lot of friends. Sandy thought that maybe she should try to stop the older girl, but she was afraid that the older girl might pick on her and tease her too.

What should Sandy do?

- Sandy should try and stop the older girl
- Not sure
- Sandy should not try and stop the other girl

Tony's Story

A boy named Tony has a very unusual blood type. One day, right after Tony had begun school and was accepted on to the baseball team, a doctor called Tony to ask him to give a large amount of blood to a boy who was very sick and needed more blood of the same kind as Tony's to get well. Because Tony was the only person in town with the sick boy's blood type, and since this was a rare and serious sickness, the blood would have to be given a number of times over a period of several weeks. So, if Tony agrees to give his blood, he would have to go into the hospital for several weeks. Being in the hospital would make Tony feel very weak for a while, he would lose his spot on the team, and he would get very far behind in school.

What should Tony do?

- Tony should give blood
- Not sure
- Tony should not give blood

The Accident

One day John was going to a friend's party. On the way, he saw a boy who had fallen off his bike and hurt his leg. The boy asked John to go to the boy's house and get his parents so that the parents could come and take him to a doctor. But, if John did run and get the boy's parents, John would be late to the party and miss all the fun and social activities with his friends.

What should John do?

- John should run and get the boy's parents
- Not sure
- John should go to his friend's party

The Swimming Story

Scott was very good at swimming. He was asked to help young handicapped children who could not walk learn to swim so they could make their legs strong for walking. Scott was the only one in town who could do this job because he was a good swimmer and a swimming teacher. But helping the children would take up much of Scott's free time left after work, and Scott wanted to train very hard for an important swimming contest coming up. If Scott could not practice swimming in all of his free time, he would probably lose the swimming contest and not receive the prize for winning, which was money. Scott was planning on using the prize money for his college education or other things he wanted.

What should Scott do?

- Scott should teach the swimming class
- Not sure
- Scott should practice for the swimming contest

Math Story

Eric knows a lot about math. One day, a boy who had just moved into Eric's class asked Eric to help him with his math homework that weekend. The boy was having a hard time catching up with his math class, and he only had the weekend to prepare for a math test the next Monday, and the boy needed to pass. If Eric helps the boy with his math homework, then he won't be able to go to the beach with his friends that weekend.

What should Eric do?

- Eric should help the boy with his math homework
- Not sure
- Eric should go to the beach with his friends

APPENDIX H

STATE HOSTILITY CORRELATION MATRIX

Table 38 Correlations of Covariates with State Hostility

Variable	1	2	3	4	5	6	7
1. StateHostility	--						
2. Sex	-0.091	--					
3. Age	-0.051	0.037	--				
4. Partner Sex	-0.041	0.141	0.140	--			
5. Openess	-0.178	-0.054	0.121	0.094	--		
6. Conscientousness	-0.053	-0.092	0.207	.306*	0.120	--	
7. Extraversion	0.234	-0.041	0.135	0.086	-0.051	-0.164	--
8. Agreeableness	-0.235	-0.071	0.008	0.149	.373*	0.253	0.168
9. PositiveAffect_Pre	-0.203	0.116	0.172	-0.071	.389**	0.028	0.079
10. NegativeAffect_Pre	.331*	-0.110	-0.216	-0.122	0.129	-.359*	0.191
11. PTM_Anonymous	0.095	0.022	0.260	-0.015	0.070	-0.219	0.220
12. PTM_Public	-0.035	0.240	-0.130	-0.010	0.070	-0.258	0.080
13. PTM_Dire	0.066	0.126	0.094	-0.191	.403**	0.064	0.193
14. PTM_Compliant	0.163	-0.056	-0.005	0.033	.338*	0.030	0.153
15. Gaming Video Frequency	-.336*	.617**	-.325*	0.047	0.163	-0.078	-0.233
16. Do you have a Twitch Prime account?	0.065	.526**	-0.085	0.085	0.030	-0.019	-0.195
17. VidSupport	0.175	-0.250	-0.191	-0.019	-0.020	0.210	0.024
18. SocialMedia	-.335*	-0.085	-.298*	-0.283	-0.071	0.100	0.022
19. OtherVideo	-0.190	0.031	-0.183	-0.113	-0.164	0.250	-0.078
20. Played <i>Gears of War</i> game	-0.091	.564**	-0.024	0.128	0.194	0.046	-0.195
21. IndGenre_Action	-0.117	.643**	-0.095	0.045	0.263	0.046	-0.157
22. IndGenre_Exploration	-0.169	.608**	-0.114	0.229	0.230	-0.041	0.001
23. IndGenre_Other	-0.161	0.021	0.031	-0.027	0.288	0.102	-0.017
24. Play Together Online	0.017	0.290	-0.238	-0.017	0.141	-0.062	-0.124
25. PairGenre_Action	-0.246	.491**	-0.023	.324*	.328*	0.162	-0.159
26. PairGenre_Exploration	-0.221	.343*	-0.111	0.237	0.266	0.057	-0.088
27. PairGenre_Other	-0.176	0.202	-0.051	0.112	0.284	0.116	-0.057
28. RelMaint_Gaming	-0.207	0.206	0.072	0.161	.303*	-0.046	-0.158
29. Quality_Pre	-.326*	0.043	0.092	0.045	-0.038	-0.263	0.130
30. Relationship Type	-0.199	-0.170	-0.103	0.272	-0.063	0.016	-0.170
31. Identification	-0.201	0.156	0.178	-0.003	0.262	0.027	-0.044

Table 38 Correlations of Covariates with State Hostility

8	9	10	11	12	13	14	15	16	17	18
--										
0.049	--									
-0.245	0.045	--								
0.193	0.162	0.059	--							
-0.220	-0.032	.305*	0.036	--						
0.205	.395**	.351*	.337*	0.126	--					
.310*	0.141	0.197	.437**	-.366*	.414**	--				
0.038	0.098	0.101	-0.052	.327*	0.217	-0.012	--			
-0.088	0.096	0.083	-0.182	0.173	0.258	-0.062	.346*	--		
-0.044	-0.003	0.081	-0.039	0.054	0.057	0.054	0.014	-0.115	--	
-0.001	0.233	-0.065	0.035	0.172	0.112	0.013	0.219	-0.157	0.119	--
0.096	-0.175	-0.284	-0.161	0.031	-0.153	-.305*	0.087	0.069	0.155	.427**
0.128	-0.060	-0.137	0.010	0.120	0.173	0.065	.344*	.491**	0.007	-0.158
0.081	0.068	-0.048	-0.157	0.173	0.238	0.079	.679**	0.243	-0.130	0.203
0.008	0.246	0.099	0.022	0.276	0.267	0.249	.708**	.304*	-0.017	0.105
0.273	.357*	-0.054	0.260	0.155	.430**	.298*	.377*	0.056	0.092	.327*
0.035	0.160	-0.072	-0.011	0.203	0.128	0.064	.462**	0.137	0.078	0.209
.322*	0.116	-0.148	0.062	0.156	0.149	0.193	.626**	0.013	-0.084	0.195
0.150	0.232	-0.033	0.096	0.112	0.094	0.202	.599**	-0.041	0.053	0.211
0.105	0.223	0.009	0.239	0.230	.353*	.368*	.522**	0.102	0.179	0.240
0.008	0.249	0.005	0.111	0.118	0.239	0.161	.428**	0.003	0.089	0.039
-0.101	0.130	-0.113	0.259	0.048	-0.107	-0.041	0.036	-0.154	0.007	0.093
-0.165	0.059	0.029	-0.106	-0.204	-0.111	0.039	0.040	0.050	0.088	0.003
0.145	0.075	0.046	0.061	0.193	0.216	0.062	.515**	-0.034	0.072	0.119

*Correlation is significant at the 0.05 level (2-tailed).

**Correlation is significant at the 0.01 level (2-tailed).

Table 38 Correlations of Covariates with State Hostility

19	20	21	22	23	24	25	26	27	28	29
--										
0.166	--									
0.213	.466**	--								
-0.148	.414**	.566**	--							
-0.101	0.048	0.209	.515**	--						
0.153	0.214	.470**	.490**	.395**	--					
0.090	.363*	.749**	.622**	.376*	.433**	--				
-0.025	0.285	.480**	.787**	.478**	.386**	.732**	--			
-0.171	0.179	.354*	.621**	.757**	0.254	.510**	.588**	--		
-0.223	0.180	.390**	.373*	0.230	.335*	.429**	.334*	.347*	--	
-0.156	-0.053	-0.116	0.059	-0.045	-0.071	-0.169	0.023	-0.037	0.168	--
0.004	-0.038	-0.132	-0.017	-0.140	-0.188	-0.234	-0.020	-0.061	0.068	.390**
0.024	0.035	.329*	.402**	.485**	0.262	.442**	.429**	.404**	.364*	-0.033

*Correlation is significant at the 0.05 level (2-tailed).

**Correlation is significant at the 0.01 level (2-tailed).

Table 38 Correlations of Covariates with State Hostility

30	31
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--

-0.092

--

*Correlation is significant at the 0.05 level (2-tailed).

**Correlation is significant at the 0.01 level (2-tailed).

APPENDIX I

PROSOCIAL SCORE CORRELATION MATRIX

Table 39 Correlations of Covariates with Prosocial Score

Variable	1	2	3	4	5	6	7
1. ProSoc_Score	--						
2. Partner Sex	-0.061	--					
3. Age	-0.015	0.140	--				
4. Partner Age	-0.093	0.024	.673**	--			
5. Openess	-0.104	0.094	0.121	0.102	--		
6. Neuroticism	0.140	-0.039	-0.163	-.308*	-0.086	--	
7. PositiveAffect_Pre	-0.212	-0.071	0.172	0.157	.389**	-.416**	--
8. PTM_Anonymous	-0.249	-0.015	0.260	0.232	0.070	-0.289	0.162
9. PTM_Public	0.196	-0.010	-0.130	-0.192	0.070	0.102	-0.032
10. PTM_Dire	-0.046	-0.191	0.094	0.057	.403**	-0.022	.395**
11. PTM_Emotion	-0.206	-0.171	-0.020	-0.065	0.288	0.057	.323*
12. Gaming Video Frequency	-0.025	0.047	-.325*	-.327*	0.163	-0.026	0.098
13. Do you have a Twitch Prime account?	0.032	0.085	-0.085	-0.154	0.030	0.076	0.096
14. VidSupport	0.155	-0.019	-0.191	-0.192	-0.020	0.179	-0.003
15. OtherVideo	-0.205	-0.113	-0.183	-0.179	-0.164	0.092	-0.175
16. Played <i>Gears of War</i> game	-0.024	0.128	-0.024	-0.163	0.194	-0.128	-0.060
17. IndGenre_Action	0.187	0.045	-0.095	-0.118	0.263	-0.095	0.068
18. IndGenre_Exploration	0.068	0.229	-0.114	-0.153	0.230	-0.125	0.246
19. IndGenre_Other	-0.259	-0.027	0.031	0.086	0.288	-0.029	.357*
20. Play Together Online	0.028	-0.017	-0.238	-0.170	0.141	0.013	0.160
21. PairGenre_Exploration	-0.076	0.237	-0.111	-0.114	0.266	-0.211	0.232
22. PairGenre_Other	-0.129	0.112	-0.051	0.131	0.284	-0.059	0.223
23. Relationship Type	-0.032	0.272	-0.103	0.033	-0.063	0.048	0.059
24. Quality_Pre	0.288	0.045	0.092	0.240	-0.038	-0.164	0.130
25. RelMaint_Pre	0.235	0.127	0.052	0.203	0.076	-0.095	0.273
26. VideoViolence	-0.102	0.085	0.031	0.240	0.167	-0.019	0.281
27. Frustration	0.102	-0.159	-0.123	-0.199	-0.105	0.218	0.081

**Correlation is significant at the 0.01 level (2-tailed).

*Correlation is significant at the 0.05 level (2-tailed).

Table 39 Correlations of Covariates with Prosocial Score

8	9	10	11	12	13	14	15	16	17	18
--										
0.036	--									
.337*	0.126	--								
0.129	-0.048	.632**	--							
-0.052	.327*	0.217	0.184	--						
-0.182	0.173	0.258	-0.035	.346*	--					
-0.039	0.054	0.057	0.015	0.014	-0.115	--				
-0.161	0.031	-0.153	-0.087	0.087	0.069	0.155	--			
0.010	0.120	0.173	-0.076	.344*	.491**	0.007	0.166	--		
-0.157	0.173	0.238	0.032	.679**	0.243	-0.130	0.213	.466**	--	
0.022	0.276	0.267	0.081	.708**	.304*	-0.017	-0.148	.414**	.566**	--
0.260	0.155	.430**	.370*	.377*	0.056	0.092	-0.101	0.048	0.209	.515**
-0.011	0.203	0.128	-0.017	.462**	0.137	0.078	0.153	0.214	.470**	.490**
0.096	0.112	0.094	0.113	.599**	-0.041	0.053	-0.025	0.285	.480**	.787**
0.239	0.230	.353*	0.222	.522**	0.102	0.179	-0.171	0.179	.354*	.621**
-0.106	-0.204	-0.111	0.066	0.040	0.050	0.088	0.004	-0.038	-0.132	-0.017
0.259	0.048	-0.107	-0.057	0.036	-0.154	0.007	-0.156	-0.053	-0.116	0.059
0.229	0.267	0.103	0.159	0.219	0.029	-0.006	-0.065	0.204	0.154	0.174
0.099	-.308*	0.223	.402**	0.015	0.053	-0.246	-0.194	-0.230	0.068	-0.021
0.026	0.040	0.041	-0.052	-0.049	0.039	0.275	-0.167	-0.091	-0.209	0.103

**Correlation is significant at the 0.01 level (2-tailed).

*Correlation is significant at the 0.05 level (2-tailed).

Table 39 Correlations of Covariates with Prosocial Score

19	20	21	22	23	24	25	26	27
--								
.395**	--							
.478**	.386**	--						
.757**	0.254	.588**	--					
-0.140	-0.188	-0.020	-0.061	--				
-0.045	-0.071	0.023	-0.037	.390**	--			
0.124	0.090	0.200	0.235	.388**	.615**	--		
0.093	0.138	-0.014	0.042	0.107	-0.060	0.062	--	
-0.077	-0.045	0.066	0.000	0.171	-0.135	-0.187	0.003	--

**Correlation is significant at the 0.01 level (2-tailed).

*Correlation is significant at the 0.05 level (2-tailed).

APPENDIX J

POSITIVE AFFECT CHANGE CORRELATION MATRIX

Table 40 Correlations of Covariates with Positive Affect Change

Variable	1	2	3	4	5	6	7
1. PositiveAffect_Diff	--						
2. Sex	0.170	--					
3. Age	0.128	0.037	--				
4. Partner Sex	.402**	0.141	0.140	--			
5. Openess	0.002	-0.054	0.121	0.094	--		
6. Neuroticism	-0.059	-.368*	-0.163	-0.039	-0.086	--	
7. PTM_Anonymous	-0.152	0.022	0.260	-0.015	0.070	-0.289	--
8. PTM_Public	0.038	0.240	-0.130	-0.010	0.070	0.102	0.036
9. PTM_Emotion	-0.202	-0.135	-0.020	-0.171	0.288	0.057	0.129
10. PTM_Compliant	-0.112	-0.056	-0.005	0.033	.338*	-0.078	.437**
11. Gaming Video Frequency	0.194	.617**	-.325*	0.047	0.163	-0.026	-0.052
12. Do you have a Twitch Prime account?	0.021	.526**	-0.085	0.085	0.030	0.076	-0.182
13. VidSupport	0.190	-0.250	-0.191	-0.019	-0.020	0.179	-0.039
14. Played <i>Gears of War</i> game	.339*	.564**	-0.024	0.128	0.194	-0.128	0.010
15. IndGenre_Action	0.213	.643**	-0.095	0.045	0.263	-0.095	-0.157
16. IndGenre_Other	-0.032	0.021	0.031	-0.027	0.288	-0.029	0.260
17. Play Together In Person	0.240	0.245	-0.136	.321*	0.102	-0.061	-0.057
18. Play Together Online	-0.084	0.290	-0.238	-0.017	0.141	0.013	-0.011
19. PairGenre_Action	0.194	.491**	-0.023	.324*	.328*	-0.089	0.062
20. PairGenre_Exploration	0.078	.343*	-0.111	0.237	0.266	-0.211	0.096
21. PairGenre_Other	0.002	0.202	-0.051	0.112	0.284	-0.059	0.239
22. Relationship Type	0.021	-0.170	-0.103	0.272	-0.063	0.048	-0.106
23. VideoViolence	-0.152	0.008	0.031	0.085	0.167	-0.019	0.099
24. Enjoyment	.404**	0.176	-0.014	0.293	.304*	0.092	-0.079
25. Identification	.313*	0.156	0.178	-0.003	0.262	0.165	0.061

**Correlation is significant at the 0.01 level (2-tailed).

*Correlation is significant at the 0.05 level (2-tailed).

Table 40 Correlations of Covariates with Positive Affect Change

8	9	10	11	12	13	14	15	16	17	18
--										
-0.048	--									
-.366*	0.246	--								
.327*	0.184	-0.012	--							
0.173	-0.035	-0.062	.346*	--						
0.054	0.015	0.054	0.014	-0.115	--					
0.120	-0.076	0.065	.344*	.491**	0.007	--				
0.173	0.032	0.079	.679**	0.243	-0.130	.466**	--			
0.155	.370*	.298*	.377*	0.056	0.092	0.048	0.209	--		
0.012	0.209	0.167	.448**	-0.003	0.003	0.111	.302*	0.082	--	
0.203	-0.017	0.064	.462**	0.137	0.078	0.214	.470**	.395**	-0.181	--
0.156	0.161	0.193	.626**	0.013	-0.084	.363*	.749**	.376*	.375*	.433**
0.112	0.113	0.202	.599**	-0.041	0.053	0.285	.480**	.478**	0.278	.386**
0.230	0.222	.368*	.522**	0.102	0.179	0.179	.354*	.757**	.401**	0.254
-0.204	0.066	0.039	0.040	0.050	0.088	-0.038	-0.132	-0.140	.307*	-0.188
-.308*	.402**	.359*	0.015	0.053	-0.246	-0.230	0.068	0.093	0.059	0.138
0.143	.324*	0.055	.382**	-0.038	-0.057	0.181	.504**	0.234	0.260	.321*
0.193	.294*	0.062	.515**	-0.034	0.072	0.035	.329*	.485**	0.228	0.262

**Correlation is significant at the 0.01 level (2-tailed).

*Correlation is significant at the 0.05 level (2-tailed).

Table 40 Correlations of Covariates with Positive Affect Change

	19	20	21	22	23	24	25
19	--						
20	.732**	--					
21	.510**	.588**	--				
22	-0.234	-0.020	-0.061	--			
23	0.132	-0.014	0.042	0.107	--		
24	.624**	.346*	0.244	-0.189	0.207	--	
25	.442**	.429**	.404**	-0.092	0.097	.432**	--

**Correlation is significant at the 0.01 level (2-tailed).

*Correlation is significant at the 0.05 level (2-tailed).

APPENDIX K

NEGATIVE AFFECT CHANGE CORRELATION MATRIX

Table 41 Correlations of Covariates with Negative Affect Change

Variable	1	2	3	4	5	6	7
1. NegativeAffect_Diff	--						
2. Sex	0.042	--					
3. Age	0.118	0.037	--				
4. Partner Age	0.076	-0.062	.673**	--			
5. Openess	-0.140	-0.054	0.121	0.102	--		
6. Conscientousness	.305*	-0.092	0.207	0.160	0.120	--	
7. Neuroticism	-.305*	-.368*	-0.163	-.308*	-0.086	-0.068	--
8. PTM_Altruism	0.160	0.099	0.201	0.127	0.105	0.202	-0.043
9. PTM_Anonymous	0.128	0.022	0.260	0.232	0.070	-0.219	-0.289
10. PTM_Public	-.337*	0.240	-0.130	-0.192	0.070	-0.258	0.102
11. PTM_Emotion	-0.077	-0.135	-0.020	-0.065	0.288	0.144	0.057
12. PTM_Dire	-0.209	0.126	0.094	0.057	.403**	0.064	-0.022
13. PTM_Compliant	0.047	-0.056	-0.005	0.145	.338*	0.030	-0.078
14. Gaming Video Frequency	-0.206	.617**	-.325*	-.327*	0.163	-0.078	-0.026
15. Do you have a Twitch Prime account?	0.037	.526**	-0.085	-0.154	0.030	-0.019	0.076
16. VidSupport	0.055	-0.250	-0.191	-0.192	-0.020	0.210	0.179
17. OtherVideo	0.119	0.031	-0.183	-0.179	-0.164	0.250	0.092
18. Played <i>Gears of War</i> game	0.160	.564**	-0.024	-0.163	0.194	0.046	-0.128
19. IndGenre_Action	-0.030	.643**	-0.095	-0.118	0.263	0.046	-0.095
20. IndGenre_Other	0.139	0.021	0.031	0.086	0.288	0.102	-0.029
21. Play Together in Person	-0.250	0.245	-0.136	-0.065	0.102	-0.196	-0.061
22. PairGenre_Exploration	-0.122	.343*	-0.111	-0.114	0.266	0.057	-0.211
23. PairGenre_Other	-0.045	0.202	-0.051	0.131	0.284	0.116	-0.059
24. RelMaint_Gaming	0.005	0.206	0.072	-0.154	.303*	-0.046	0.039
25. RelMaint_Pre	-0.124	0.143	0.052	0.203	0.076	-0.189	-0.095
26. Enjoyment	-0.021	0.176	-0.014	-0.093	.304*	0.198	0.092
27. Frustration	-0.203	-0.125	-0.123	-0.199	-0.105	-0.125	0.218
28. Identification	-0.015	0.156	0.178	-0.044	0.262	0.027	0.165

**Correlation is significant at the 0.01 level (2-tailed).

*Correlation is significant at the 0.05 level (2-tailed).

Table 41 Correlations of Covariates with Negative Affect Change

8	9	10	11	12	13	14	15	16	17	18
--										
.310*	--									
-0.285	0.036	--								
-0.077	0.129	-0.048	--							
-0.023	.337*	0.126	.632**	--						
.422**	.437**	-.366*	0.246	.414**	--					
0.038	-0.052	.327*	0.184	0.217	-0.012	--				
-0.052	-0.182	0.173	-0.035	0.258	-0.062	.346*	--			
0.014	-0.039	0.054	0.015	0.057	0.054	0.014	-0.115	--		
-0.032	-0.161	0.031	-0.087	-0.153	-.305*	0.087	0.069	0.155	--	
0.077	0.010	0.120	-0.076	0.173	0.065	.344*	.491**	0.007	0.166	--
0.131	-0.157	0.173	0.032	0.238	0.079	.679**	0.243	-0.130	0.213	.466**
0.123	0.260	0.155	.370*	.430**	.298*	.377*	0.056	0.092	-0.101	0.048
0.164	-0.057	0.012	0.209	0.012	0.167	.448**	-0.003	0.003	-0.256	0.111
0.228	0.096	0.112	0.113	0.094	0.202	.599**	-0.041	0.053	-0.025	0.285
0.268	0.239	0.230	0.222	.353*	.368*	.522**	0.102	0.179	-0.171	0.179
0.290	0.111	0.118	.295*	0.239	0.161	.428**	0.003	0.089	-0.223	0.180
0.114	0.229	0.267	0.159	0.103	-0.067	0.219	0.029	-0.006	-0.065	0.204
0.141	-0.079	0.143	.324*	0.243	0.055	.382**	-0.038	-0.057	0.166	0.181
-0.077	0.026	0.040	-0.052	0.041	0.131	-0.049	0.039	0.275	-0.167	-0.091
0.111	0.061	0.193	.294*	0.216	0.062	.515**	-0.034	0.072	0.024	0.035

**Correlation is significant at the 0.01 level (2-tailed).

*Correlation is significant at the 0.05 level (2-tailed).

Table 41 Correlations of Covariates with Negative Affect Change

19	20	21	22	23	24	25	26	27	28
--									
0.209	--								
.302*	0.082	--							
.480**	.478**	0.278	--						
.354*	.757**	.401**	.588**	--					
.390**	0.230	.414**	.334*	.347*	--				
0.154	0.124	.339*	0.200	0.235	.407**	--			
.504**	0.234	0.260	.346*	0.244	.346*	0.167	--		
-0.209	-0.077	-0.105	0.066	0.000	0.036	-0.187	-.369*	--	
.329*	.485**	0.228	.429**	.404**	.364*	0.045	.432**	0.037	--

**Correlation is significant at the 0.01 level (2-tailed).

*Correlation is significant at the 0.05 level (2-tailed).

APPENDIX L

RELATIONSHIP QUALITY CHANGE CORRELATION MATRIX

Table 42 Correlations of Covariates with Relationship Quality Change

Variable	1	2	3	4	5	6	7
1. Quality_Change	--						
2. Partner Sex	-.405**	--					
3. Age	-0.266	0.140	--				
4. Sex	0.046	0.141	0.037	--			
5. Neuroticism	-0.133	-0.039	-0.163	-.368*	--		
6. PositiveAffect_Pre	0.005	-0.071	0.172	0.116	-.416**	--	
7. NegativeAffect_Pre	-0.214	-0.122	-0.216	-0.110	0.289	0.045	--
8. PTM_Anonymous	-.300*	-0.015	0.260	0.022	-0.289	0.162	0.059
9. PTM_Emotion	-0.016	-0.171	-0.020	-0.135	0.057	.323*	0.081
10. PTM_Compliant	-0.075	0.033	-0.005	-0.056	-0.078	0.141	0.197
11. VidSupport	0.016	-0.019	-0.191	-0.250	0.179	-0.003	0.081
12. StreamingServices	-0.052	0.002	0.098	-0.028	0.009	-0.086	-0.110
13. OtherVideo	.358*	-0.113	-0.183	0.031	0.092	-0.175	-0.284
14. IndGenre_Other	-0.003	-0.027	0.031	0.021	-0.029	.357*	-0.054
15. Play Together in Person	-0.001	.321*	-0.136	0.245	-0.061	0.075	0.078
16. PairGenre_Exploration	0.022	0.237	-0.111	.343*	-0.211	0.232	-0.033
17. PairGenre_Other	0.005	0.112	-0.051	0.202	-0.059	0.223	0.009
18. Relationship Type	-0.199	0.272	-0.103	-0.170	0.048	0.059	0.029
19. Enjoyment	0.109	0.293	-0.014	0.176	0.092	0.028	-0.162
20. Frustration	-0.113	-0.159	-0.123	-0.125	0.218	0.081	.508**
21. Identification	0.002	-0.003	0.178	0.156	0.165	0.075	0.046

**Correlation is significant at the 0.01 level (2-tailed).

*Correlation is significant at the 0.05 level (2-tailed).

Table 42 Correlations of Covariates with Relationship Quality Change

8	9	10	11	12	13	14	15	16	17	18
--										
0.129	--									
.437**	0.246	--								
-0.039	0.015	0.054	--							
0.093	-0.014	0.152	0.183	--						
-0.161	-0.087	-.305*	0.155	.346*	--					
0.260	.370*	.298*	0.092	0.176	-0.101	--				
-0.057	0.209	0.167	0.003	-0.031	-0.256	0.082	--			
0.096	0.113	0.202	0.053	0.190	-0.025	.478**	0.278	--		
0.239	0.222	.368*	0.179	0.124	-0.171	.757**	.401**	.588**	--	
-0.106	0.066	0.039	0.088	0.003	0.004	-0.140	.307*	-0.020	-0.061	--
-0.079	.324*	0.055	-0.057	0.090	0.166	0.234	0.260	.346*	0.244	-0.189
0.026	-0.052	0.131	0.275	-0.282	-0.167	-0.077	-0.105	0.066	0.000	0.171
0.061	.294*	0.062	0.072	0.153	0.024	.485**	0.228	.429**	.404**	-0.092

**Correlation is significant at the 0.01 level (2-tailed).

*Correlation is significant at the 0.05 level (2-tailed).

Table 42 Correlations of Covariates with Relationship Quality Change

19	20	21
--		
-.369*	--	
.432**	0.037	--

**Correlation is significant at the 0.01 level (2-tailed).

*Correlation is significant at the 0.05 level (2-tailed).

APPENDIX M

IRB APPROVAL

Date: 4-23-2021

IRB #: IRB-FY2020-143

Title: Play Together: How Cooperative Play of Violent Video Games can Positively Influence Dyadic Relationships

Creation Date: 1-15-2020

End Date:

Status: **Approved**

Principal Investigator: Anup Kumar

Review Board: CSU IRB

Sponsor:

Study History

Submission Type	Initial	Review Type	Expedited	Decision	Approved
Submission Type	Modification	Review Type	Expedited	Decision	Approved


Key Study Contacts

Member	Anup Kumar	Role	Principal Investigator	Contact	a.kumar64@csuohio.edu
Member	Anup Kumar	Role	Primary Contact	Contact	a.kumar64@csuohio.edu
Member	Matthew Enleben	Role	Co-Principal Investigator	Contact	m.r.enleben@wikes.csuohio.edu

APPENDIX N

PRE-TEST QUESTIONNAIRE

Erxleben_PreTest_Fall20



CLEVELAND STATE
UNIVERSITY

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My name is Anup Kumar. I am a Professor at Cleveland State University. I am working with Matthew Erxleben, a graduate student at Cleveland State University. We are asking that you participate in a research study being done by the Cleveland State School of Communication. If you have any questions, you can contact me by phone at (216) 687-4642. You can also contact me by e-mail at a.kumar64@csuohio.edu. You can contact Mr. Erxleben by phone at (440) 478-3230. You can also contact Mr. Erxleben by e-mail at erxlebenm@outlook.com.

The study aims to review the effects of video games with some violent content. The study also aims to study how watching video games with some violent content being played by others influences these effects. If you choose to participate in this study, you will be asked to do three things. You will be asked to complete two surveys. You will also be asked to watch a 5 to 10-minute-long video recording of a video game being played by others. Both surveys will be available online. The second survey will be available after you complete the first survey. You should be able to complete all of these tasks in about 45 minutes to 1.0 hours. To participate, you must be at least 18 years of age.

Risks experienced as a participant in this study are no greater than those incurred during everyday living. This study involves some violent video game content which may make participants uncomfortable. Any participants who feel negatively affected by this violent content are encourage to contact the Cleveland State Counseling Center at (216) 687-2277. Other mental health services can be found at <https://numgreatercleveland.org/support/num-greater-cleveland-helpline/>. You are free to skip any questions that you choose not to answer. You may withdraw from this study at any time without any penalty whatsoever. Your answers to the questions will be treated in a private manner. No identifying information will be linked with the data gathered. All research documents will be secured in my CSU campus office. All identifying personal identifiers will be destroyed by shredding at the proper time. Only summary results will be presented in public or published. No personal identifiers will be included in any public presentation of the data. The only direct benefits available to you are any extra credit which may be granted by your class instructor. You will also be entered into a drawing for the chance to receive a \$100 Amazon gift card or one of two \$50 Amazon gift cards.

A copy of this Informed Consent will be provided to you for your records at your request.

Please read the following: "I understand that if I have any questions about my rights as a research subject, I can contact the Cleveland State University Institutional Review Board at (216) 687-3630."

* 1. By choosing the first option below, you acknowledge that:
"I am at least 18 years of age and have read and understood this consent form and agree to participate."

☐ I understand this consent form and agree to participate.

☐ I do not understand this consent form and/or no longer wish to participate.

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* 2. Please enter the three digit participant ID provided by email:

Erleben_PreTest_Fall20

The following items are demographic in nature.

* 3. Please enter your biological sex:

- ☐ Female
- ☐ Male
- ☐ Other

* 4. Please indicate your age in years:

* 5. Which of these options best describes your racial/ethnic background?

- ☐ White or Caucasian
- ☐ Black or African American
- ☐ Hispanic or Latino
- ☐ Asian or Asian American
- ☐ American Indian or Alaska Native
- ☐ Native Hawaiian or other Pacific Islander
- ☐ Mixed
- ☐ Would rather not say
- ☐ Other (please specify)

40-item Big 5 personality test

* 6. Please use the below list of common human traits to describe yourself as accurately as possible. Describe yourself as you really are compared to people you know of the same age and sex, not as you wish to be. So, generally, is it accurate or inaccurate that you are:

	1 - Inaccurate	2	3	4	5	6	7 - Accurate
Shy	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Talkative	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Energetic	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Quiet	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Extroverted	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Outgoing	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Reserved	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Unfakative	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Creative	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Intellectual	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Unimaginative	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Artistic	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Intelligent	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Philosophical	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Deep	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Uncreative	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Envious	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Emotional	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Anxious	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Unworried	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Jealous	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Unnervous	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Moody	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Unnervous	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Efficient	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>

	1 - Inaccurate	2	3	4	5	6	7 - Accurate
Disorganized	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Careless	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Unlidy	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Neat	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Inefficient	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Systematic	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Organized	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Kind	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Sympathetic	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Harsh	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Cooperative	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Unkind	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Warm	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Rude	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Inconsiderate	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>

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* 7. This scale consists of a number of words that describe different feelings and emotions. Read each item and then mark the appropriate answer in the space next to that word. Indicate to what extent you feel this way right now, that is, at the present moment.

	1 - Very Slightly or Not at All	2	3	4 - Moderately	5	6	7 - Extremely
Interested	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Distressed	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Excited	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Upset	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Strong	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Guilt	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Scared	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Hesile	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Enthusiastic	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Proud	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Irritable	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Alien	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Ashamed	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Inspired	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Nervous	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Determined	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Attentive	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Jinery	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Active	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Afraid	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>

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* B. Below are a number of statements that may or may not describe you. Please indicate how much each statement describes you by using the following scale:

	1 - Does Not Describe Me at All	2	3	4 - Somewhat Describes Me	5	6	7 - Describes Me Greatly
I can help others best when people are watching me.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
It is most fulfilling to me when I can comfort someone who is very distressed.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
When other people are around, it is easier for me to help needy others.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
I think one of the best things about helping others is that it makes me look good.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
I get the most out of helping others when it is done in front of others.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
I tend to help people who are in a real crisis or need.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
When people ask me to help them, I don't hesitate.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
I prefer to donate money anonymously.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
I tend to help people who hurt themselves badly.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
I believe that donating goods or money is best when it is tax-deductible.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
I tend to help needy others most when they don't know who helped them.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>

	1 - Does Not Describe Me at All	2	3	4 - Somewhat Describes Me	5	6	7 - Describes Me Gracely
I tend to help others particularly when they are emotionally distressed.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Helping others when I am in the spotlight is when I work best.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
It is easy for me to help others when they are in a dire situation.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Most of the time, I help others when they do not know who helped them.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
I believe I should receive more recognition for the time and energy I spend on charity work.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
I respond to helping others best when the situation is highly emotional.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
I never hesitate to help others when they ask for it.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
I think that helping others without them knowing is the best type of situation.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
One of the best things about doing charity work is that it looks good on my resume.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Emotional situations make me want to help needy others.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
I often make anonymous donations because they make me feel good.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
I feel that if I help someone, they should help me in the future.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>

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The following items ask about your online video-viewing habits.

* 9. How often do you watch videos online in general?

- ☐ Every day
- ☐ A few times a week
- ☐ About once a week
- ☐ A few times a month
- ☐ Once a month
- ☐ Less than once a month
- ☐ Never

* 10. When watching videos online, how often do you use the following services?

	1 - Never	2	3	4	5	6	7 - Very Frequency
Netflix	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Hulu	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Amazon Video	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
YouTube	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Twitch	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Twitter	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Instagram	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Facebook	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Other Social Media Sites	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Other Video Streaming Services	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>

* 11. When watching videos online, how often do you watch videos of other individuals playing video games?

- ☐ Every day
- ☐ A few times a week
- ☐ About once a week
- ☐ A few times a month
- ☐ Once a month
- ☐ Less than once a month
- ☐ Never

* 12. Have you ever spent money to support an online content creator? (i.e. bought merchandise, paid Twitch subscription, Patreon). Please choose all that apply:

- ☒ Yes, I have donated money to support an online content creator.
- ☐ Yes, I have bought merchandise from an online content creator.
- ☐ Yes, I have a paid subscription to an online content creator.
- ☐ Yes, I have monetarily supported an online content creator in a way not listed.
- ☐ No, I have never spent money to support an online content creator.

* 13. Do you have a Twitch Prime account?

- ☐ Yes
- ☐ No

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The following items are intended to measure your individual gaming habits.

* 14. How often do you play video games in general?

- ☐ Every day
- ☐ A few times a week
- ☐ About once a week
- ☐ A few times a month
- ☐ Once a month
- ☐ Less than once a month
- ☐ Never

* 15. When playing video games, how often do you play games of the following genres?

	1 - Never	2	3	4	5	6	7 - Very Frequently
Shooter	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Fighting	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Casual	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Sports	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Puzzle	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Strategy	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Action/Adventure	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Simulator	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Arcade	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
RPG (Role Playing Game)	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
MMORPG (i.e. World of Warcraft)	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>

* 16. How often do you play video games on the following devices?

	1 - Never	2	3	4	5	6	7 - Very Frequently
Xbox	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
PlayStation	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Nintendo (Switch, Wii, WiiU)	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
PC	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Mac	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Phone/Tablet	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>

* 17. Have you ever played a video game from the *Gears of War* franchise?

- ☐ Yes
☐ No

* 18. If yes, when was the last time you played a game from the *Gears of War* franchise?

- ☐ Within the last week
☐ Within the last month
☐ Within the last 6 months
☐ Within the last year
☐ More than 1 year ago
☐ Never

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The remainder of this questionnaire is intended to measure various aspects of your relationship with another individual of your choice. This relationship can be of any type (i.e. a romantic partner, friend, family member, etc.), but the individual should ideally be someone that you play video games with or have played video games with in the past. If you do not play video games often, then any relationship with a close individual is fine.

The following items are intended to gather general information about your relationship with this individual.

* 19. Please enter the name that you most commonly use to refer to this individual (i.e. a first name or nickname). You will be asked to enter this name again during the second half of this study.

* 20. Please indicate their biological sex:

- ☐ Female
☐ Male
☐ Other or Unknown

* 21. Please indicate their age in years. If you are unsure about their age, please give your best estimate.

* 22. How would you describe your relationship with this individual? (i.e. Friend, Boyfriend, Roommate, etc.)

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The following items ask about your relationship with the individual you indicated on the previous page. Please describe your relationship as it really is relative to what you know about similar relationships between other people, not as you wish it to be.

* 23. I have a good relationship with this individual.

1 - Strongly Disagree	2	3	4	5	6	7 - Strongly Agree
<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>

* 24. My relationship with this individual is stable.

1 - Strongly Disagree	2	3	4	5	6	7 - Strongly Agree
<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>

* 25. My relationship with this individual is strong.

1 - Strongly Disagree	2	3	4	5	6	7 - Strongly Agree
<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>

* 26. My relationship with this individual makes me happy.

1 - Strongly Disagree	2	3	4	5	6	7 - Strongly Agree
<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>

* 27. Everything considered, my relationship with this individual is happy.

1 - Strongly Disagree	2	3	4	5	6	7 - Strongly Agree
<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>

* 28. How close do you feel to this individual?

1 - Not at All	2	3	4	5	6	7 - Extremely
<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>

* 29. Relative to what you know about similar relationships between other people, how would you characterize your relationship with this individual?

1 - Not as Close as Others	2	3	4	5	6	7 - Much Closer than Others
<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>

* 30. I would give this individual an important letter to mail after they mentioned that they are stopping by the post office today.

1 - Not at all Likely	2	3	4	5	6	7 - Very Likely
<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>

* 31. If this individual promised to copy a presentation for me, they would follow through.

1 - Not at all Likely	2	3	4	5	6	7 - Very Likely
<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>

* 32. If this individual and I decided to meet for coffee, I would be certain they would be there.

1 - Not at all Likely	2	3	4	5	6	7 - Very Likely
<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>

* 33. I would expect this individual to tell me the truth if I asked them for feedback on an idea related to my job.

1 - Not at all Likely	2	3	4	5	6	7 - Very Likely
<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>

* 34. If this individual was late to a meeting, I would guess there was a good reason for the delay.

1 - Not at all Likely	2	3	4	5	6	7 - Very Likely
<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>

* 35. This individual would intentionally misrepresent my point of view to others.

1 - Not at all Likely	2	3	4	5	6	7 - Very Likely
<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>

* 36. I would expect this individual to pay me back if I loaned them \$40.

1 - Not at all Likely	2	3	4	5	6	7 - Very Likely
<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>

* 37. If this individual laughed unexpectedly at something I did or said, I would know they were not being unkind.

1 - Not at all Likely	2	3	4	5	6	7 - Very Likely
<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>

* 38. If this individual gave me a compliment on my haircut, I would believe they meant what they said.

1 - Not at all Likely	2	3	4	5	6	7 - Very Likely
<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>

* 39. If this individual borrowed something of value and returned it broken, they would offer to pay for the repairs.

1 - Not at all Likely	2	3	4	5	6	7 - Very Likely
<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>

* 40. How often do you and this individual:

	1 - Never	2	3	4	5	6	7 - Very Frequently
Do new or unique activities together?	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Get together just to hang out?	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Work together on jobs or tasks?	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>

* 41. How important are the following activities in the relationship between you and this individual?

	1 - Not Important at All	2	3	4	5	6	7 - Very Important
Doing new or unique activities together.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Getting together just to hang out?	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Working together on jobs or tasks?	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Playing video games together?	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>

42. Please describe any recent events which may have influenced how you view your relationship with this individual (i.e. a fight). Feel free to answer in as much detail as you think is necessary. If no such event has occurred, leave blank.

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The following items ask about playing video games with the individual you indicated. Please think about playing video games with this individual specifically when responding to these items.

* 43. How often do you play video games with this individual in general?

- ☐ Every day
- ☐ A few times a week
- ☐ About once a week
- ☐ A few times a month
- ☐ Once a month
- ☐ Less than once a month
- ☐ Never

* 44. When playing video games with this individual, how often do you play games of the following genres?

	1 - Never	2	3	4	5	6	7 - Very Frequently
Shooter	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Fighting	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Casual	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Sports	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Puzzle	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Strategy	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Action/Adventure	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Simulator	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Arcade	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
RPG (Role Playing Game)	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
MMORPG (i.e. World of Warcraft)	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>

* 45. How often do you play video games with this individual on the following devices?

	1 - Never	2	3	4	5	6	7 - Very Frequently
Xbox	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
PlayStation	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Nintendo (Switch, Wii, WiiU)	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
PC	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Mac	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Phone/Tablet	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>

* 46. When playing video games together, how often do you and this individual play:

	1 - Never	2	3	4	5	6	7 - Very Frequently
In Person	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Online	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>

* 47. Have you and this individual ever played a video game from the *Gears of War* franchise together?

- ☐ Yes
- ☐ No

* 48. If yes, when was the last time you played a game from the *Gears of War* franchise with this individual?

- ☐ Within the last week
- ☐ Within the last month
- ☐ Within the last 6 months
- ☐ Within the last year
- ☐ More than 1 year ago
- ☐ Never

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The following items ask about behaviors that you might engage in while playing video games with the individual you indicated. When responding to these items, think only about how often they occur with this individual while playing video games specifically.

* 49. When playing video games together, how often do you and this individual:

	1 - Never	2	3	4	5	6	7 - Very Frequently
Express thanks when one of you does something nice for the other?	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Try to make each other laugh?	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Try to be upbeat and cheerful?	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Reminisce about things you did together in the past?	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Try to make the other person "feel good" about who they are?	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Let each other know you accept them for who they are?	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Share your private thoughts with each other?	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Repair misunderstandings?	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Give advice to each other?	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Show signs of affection to each other?	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Have intellectually stimulating conversations?	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Do favors for each other?	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Work together on job tasks?	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>

* 50. How often do you and this individual use video games to:

	1 - Never	2	3	4	5	6	7 - Very Frequently
Support each other when one of you is going through a hard time?	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Provide each other with emotional support?	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Make an effort to spend time together, even when you are busy?	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Celebrate special occasions together?	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>

APPENDIX O

POST-TEST QUESTIONNAIRE

**CLEVELAND STATE
UNIVERSITY**
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* 1. Please enter the three digit participant ID provided by email:



CLEVELAND STATE UNIVERSITY

*engagedlearning**

This questionnaire is intended to measure various aspects of your relationship with another individual of your choice. This relationship can be of any type (i.e. a romantic partner, friend, family member, etc.), but the individual should ideally be someone that you play video games with or have played video games with in the past. If you do not play video games often, then any relationship with a close individual is fine.

THIS INDIVIDUAL AND RELATIONSHIP SHOULD BE THE SAME AS THE ONE YOU INDICATED DURING THE FIRST HALF OF THIS STUDY.

* 2. Please enter the name that you most commonly use to refer to this individual (i.e. a first name or nickname). You will be asked to enter this name several times throughout this questionnaire.



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For the next section of this questionnaire, you will be shown a series of video clips of two individuals playing a video game. Afterwards, you will be instructed to respond to several items that ask about the video clips. Please pay close attention to the video so that you are able to better respond to these items.

It is important that you complete the rest of this questionnaire immediately after watching these video clips.

The primary character is Player A, while the other human controlled character is Player B. While watching the video clips, try to imagine that you are Player A and that the individual you indicated on the previous page is Player B.

* 3. Please enter the name that you most commonly use to refer to this individual (i.e. a first name or nickname).



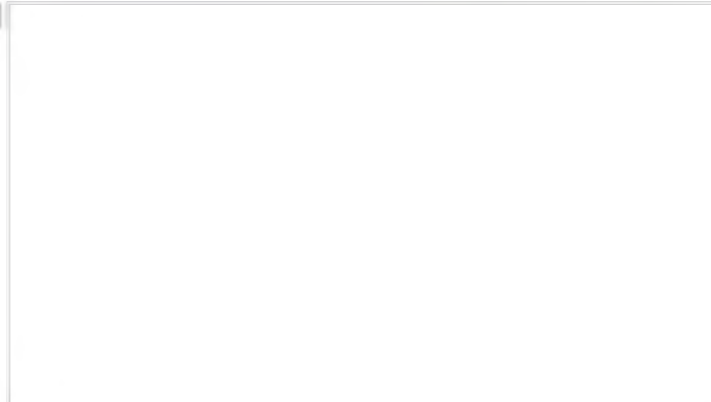
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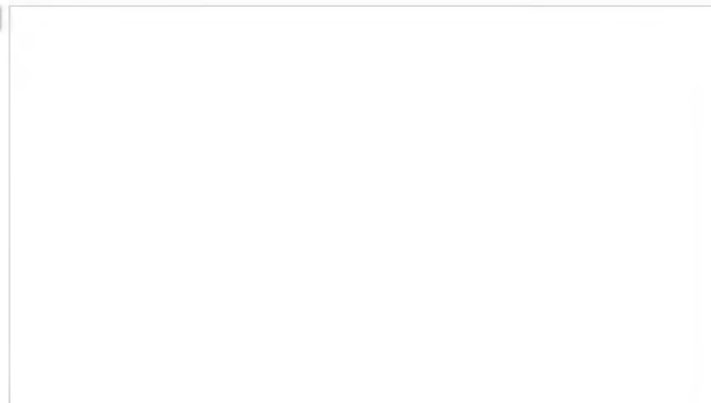
Please watch the following video in its entirety. While watching the video, try to imagine that you are Player A and that the individual you indicated is player is Player B.

Please view the video in full screen mode.

A 50.0%



B 50.0%



* 4. Please check the box below to indicate that you have watched the video.

☐ I have watched the video in its entirety.



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* 5. In terms of violent content, how would you rate the video game shown in the video?

1 - Not Violent at All	2	3	4	5	6	7 - Extremely Violent
<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>

Please respond to the following items based on your perceptions of the gameplay video that you just watched. While responding to these items, please try to imagine that you were Player A and that the individual you indicated earlier was Player B.

* 6. Please respond to the following items based on your perceptions of the gameplay video you just watched.

	1 - Strongly Disagree	2	3	4	5	6	7 - Strongly Agree
As a pair, Player A and Player B appeared to act competitively.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
As a pair, Player A and Player B appeared to act cooperatively.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
As an individual, Player A appeared to act competitively against Player B.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
As an individual, Player A appeared to act cooperatively with Player B.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
As an individual, Player B appeared to act competitively against Player A.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
As an individual, Player B appeared to act cooperatively with Player A.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>

* 7. Please enter the name that you most commonly use to refer to the individual you indicated earlier (i.e., a first name or nickname).

* 8. Please respond to the following items based on your perceptions of the gameplay video you just watched, keeping this individual in mind.

	1 - Strongly Disagree	2	3	4	5	6	7 - Strongly Agree
As a pair, I believe this individual and I would have enjoyed playing this game together.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
As a pair, I believe this individual and I would have felt frustrated playing this game together.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
I would have enjoyed playing this game with this individual.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
I would have felt frustrated playing this game with this individual.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
This individual would have enjoyed playing this game with me.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
This individual would have felt frustrated playing this game with me.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
I enjoyed watching the gameplay video.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
I felt frustrated watching the gameplay video.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
I was able to imagine that I was Player A.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
I was able to imagine that this individual was Player B.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>



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* 9. Please indicate the extent to which you agree or disagree with each of the following mood statements.

	1 - Strongly Disagree	2	3	4	5	6	7 - Strongly Agree
I feel furious.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
I feel wild.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
I feel aggravated.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
I feel tender.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
I feel surly.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
I feel polite.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
I feel discontented.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
I feel like banging on a table.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
I feel irritated.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
I feel frustrated.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
I feel kindly.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
I feel unsociable.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
I feel outraged.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
I feel agreeable.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
I feel angry.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
I feel offended.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
I feel disgusted.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
I feel tame.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
I feel like I'm about to explode.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
I feel friendly.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
I feel understanding.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
I feel amiable.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>

	1 - Strongly Disagree	2	3	4	5	6	7 - Strongly Agree
I feel mad.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
I feel mean.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
I feel bitter.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
I feel burned up.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
I feel like yelling at somebody.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
I feel cooperative.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
I feel like swearing.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
I feel cruel.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
I feel good-natured.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
I feel disagreeable.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
I feel outraged.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
I feel sympathetic.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
I feel vexed.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>



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* 10. This scale consists of a number of words that describe different feelings and emotions. Read each item and then mark the appropriate answer in the space next to that word. Indicate to what extent you feel this way right now, that is, at the present moment.

	1 - Very Slightly or Not at All	2	3	4 - Moderately	5	6	7 - Extremely
Interested	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Distressed	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Excited	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Upset	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Strong	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Guilty	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Scared	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Hostile	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Enthusiastic	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Proud	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Irritable	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Alien	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Ashamed	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Inspired	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Nervous	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Determined	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Alert	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Jittery	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Active	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Afraid	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>



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This next section consists of five short stories. Please read each story carefully and make sure all of the questions are answered.



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Sandy was a student at a new school. One day, Sandy was walking into her new class early and saw an older girl teasing and making fun of another girl's clothes. The girl started crying. There was no one else around and Sandy did not know the girls very well, but she had heard that the girl who was crying was very poor and that the older girl had a lot of friends. Sandy thought that maybe she should try to stop the older girl, but she was afraid that the older girl might pick on her and tease her too.

* 11. What should Sandy do?

- ☐ Sandy should try and stop the older girl.
- ☐ Not sure
- ☐ Sandy should not try and stop the older girl.

* 12. How important were each of the following reasons in making your decision?

	1 - Not Important	2	3	4 - Somewhat Important	5	6	7 - Very Important
1. It depends whether Sandy thinks the other girl is being really mean or not.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
2. It depends whether the other girl is crying a lot.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
3. It depends whether Sandy can find other friends to do things with in school.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
4. It depends whether Sandy thinks that she is doing what she believes she should do.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
5. It depends whether Sally's classmates would approve of what she does.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
6. It depends whether Sally is morally-abstracted about affective ties or not.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>

* 13. From the list of reasons above, choose the three most important:

	1	2	3	4	5	6
Which was the FIRST most important?	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Which was the SECOND most important?	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Which was the THIRD most important?	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>



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A boy named Tony has a very unusual blood type. One day, right after Tony had begun school, he was accepted on to the basketball team. A doctor called Tony to ask him to give a large amount of blood to a boy who was very sick and needed more blood of the same kind as Tony's to get well. Because Tony was the only person in town with the sick boy's blood type, and since this was a rare and serious sickness, the blood would have to be given a number of times over a period of several weeks. So, if Tony agrees to give his blood, he would have to go into the hospital for several weeks. Being in the hospital would mean Tony had very few friends for a while, he would lose his spot on the team, and he would get very far behind in school.

* 14. What should Tony do?

- ☐ Tony should give blood
- ☐ Not sure
- ☐ Tony should not give blood

* 15. How important were each of the following reasons in making your decision?

	1 - Not Important	2	3	4 - Somewhat Important	5	6	7 - Very Important
1. It depends whether Tony thinks that helping is nice or not.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
2. It depends on Tony's unidimensional approach to social class.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
3. It depends whether Tony believes his friends and parents will like what he does or not.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
4. It depends whether Tony feels that losing his spot on the team is important or not.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
5. It depends whether Tony can understand how badly the other boy is feeling.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
6. It depends how sick the other boy will get.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>

* 18. From the list of reasons above, choose the three most important:

	1	2	3	4	5	6
Which was the FIRST most important?	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Which was the SECOND most important?	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Which was the THIRD most important?	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>



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One day John was going to a friend's party. On the way, he saw a boy who had fallen off his bike and hurt his leg. The boy asked John to go to the boy's house and get his parents so that the parents could come and take him to a doctor. But, if John did run and get the boy's parents, John would be late to the party and miss all the fun and social activities with his friends.

* 17. What should John do?

- ☐ John should run and get the boy's parents
- ☐ Not sure
- ☐ John should go to his friend's party

* 18. How important were each of the following reasons in making your decision?

	1 - Not Important	2	3	4 - Somewhat Important	5	6	7 - Very Important
1. It depends how John would feel about himself if he helped or not.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
2. It depends how much fun John expects the party to be and what sort of things are happening at the party.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
3. It depends whether John believes in people's values of metacognition or not.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
4. It depends whether John's parents and friends will think he did the right thing or did the wrong thing.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
5. It depends whether the boy really needs help or not.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
6. It depends whether John thinks it's the decent thing to do or not.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>

* 19. From the list of reasons above, choose the three most important:

	1	2	3	4	5	6
Which was the FIRST most important?	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Which was the SECOND most important?	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Which was the THIRD most important?	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>



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Scott was very good at swimming. He was asked to help young handicapped children who could not walk learn to swim so they could make their legs strong for walking. Scott was the only one in town who could do this job because he was a good swimmer and a swimming teacher. But helping the children would take up much of Scott's free time left after work, and Scott wanted to train very hard for an important swimming contest coming up. If Scott could not practice swimming in all of his free time, he would probably lose the swimming contest and not receive the prize for winning, which was money. Scott was planning on using the prize money for his college education or other things he wanted.

* 20. What should Scott do?

- ☐ Scott should teach the swimming class
- ☐ Not sure
- ☐ Scott should practice for the swimming contest

* 21. How important were each of the following reasons in making your decision?

	1 - Not Important	2	3	4 - Somewhat Important	5	6	7 - Very Important
1. It depends on the natural philosophies of ethical stature and societal incorporation.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
2. It depends whether Scott believes teaching the children is the nice thing to do.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
3. It depends if Scott really wants to win the swimming competition.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
4. It depends if the handicapped children's legs hurt or not.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
5. It depends whether Scott's parents and the community will think he did the right thing or did the wrong thing.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
6. It depends whether Scott would feel good about the children being able to walk better.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>

* 22. From the list of reasons above, choose the three most important:

	1	2	3	4	5	6
Which was the FIRST most important?	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Which was the SECOND most important?	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Which was the THIRD most important?	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>



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Eric knows a lot about math. One day, a boy who had just moved into Eric's class asked Eric to help him with his math homework that weekend. The boy was having a hard time catching up with his math class, and he only had the weekend to prepare for a math test the next Monday, and the boy needed to pass. If Eric helps the boy with his math homework, then he won't be able to go to the beach with his friends that weekend.

* 23. What should Eric do?

- ☐ Eric should help the boy with his math homework
- ☐ Not Sure
- ☐ Eric should go to the beach with his friends

* 24. How important were each of the following reasons in making your decision?

	1 - Not Important	2	3	4 - Somewhat Important	5	6	7 - Very Important
1. It depends whether Eric's parents and friends think he did the right thing or the wrong thing.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
2. It depends if Eric thinks it is the nice thing to do or not.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
3. It depends if Eric thinks the boy really needs help or not.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
4. It depends if Eric really wants to go to the beach or not.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
5. It depends whether justice can be served in furthering the cause of reciprocity in priorities.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
6. It depends whether Eric feels that everyone is better off if each person helps each other.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>

* 25. From the list of reasons above, choose the three most important:

	1	2	3	4	5	6
Which was the FIRST most important?	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Which was the SECOND most important?	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Which was the THIRD most important?	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>



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The following items ask about your relationship with the individual you indicated previously. Please describe your relationship as it really is relative to what you know about similar relationships between other people, not as you wish it to be.

* 26. Please enter the name that you most commonly use to refer to this individual (i.e. a first name or nickname).

* 27. I have a good relationship with this individual.

1 - Strongly Disagree	2	3	4	5	6	7 - Strongly Agree
<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>

* 28. My relationship with this individual is stable.

1 - Strongly Disagree	2	3	4	5	6	7 - Strongly Agree
<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>

* 29. My relationship with this individual is strong.

1 - Strongly Disagree	2	3	4	5	6	7 - Strongly Agree
<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>

* 30. My relationship with this individual makes me happy.

1 - Strongly Disagree	2	3	4	5	6	7 - Strongly Agree
<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>

* 31. Everything considered, my relationship with this individual is happy.

1 - Strongly Disagree	2	3	4	5	6	7 - Strongly Agree
<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>

* 32. How close do you feel to this individual?

1 - Not at All	2	3	4	5	6	7 - Extremely
<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>

* 33. Relative to what you know about similar relationships between other people, how would you characterize your relationship with this individual?

1 - Not as Close as Others	2	3	4	5	6	7 - Much Closer than Others
<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>

* 34. I would give this individual an important letter to mail after they mentioned that they are stopping by the post office today.

1 - Not at all Likely	2	3	4	5	6	7 - Very Likely
<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>

* 35. If this individual promised to copy a presentation for me, they would follow through.

1 - Not at all Likely	2	3	4	5	6	7 - Very Likely
<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>

* 36. If this individual and I decided to meet for coffee, I would be certain they would be there.

1 - Not at all Likely	2	3	4	5	6	7 - Very Likely
<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>

* 37. I would expect this individual to tell me the truth if I asked them for feedback on an idea related to my job.

1 - Not at all Likely	2	3	4	5	6	7 - Very Likely
<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>

* 38. If this individual was late to a meeting, I would guess there was a good reason for the delay.

1 - Not at all Likely	2	3	4	5	6	7 - Very Likely
<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>

* 39. This individual would intentionally misrepresent my point of view to others.

1 - Not at all Likely	2	3	4	5	6	7 - Very Likely
<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>

* 40. I would expect this individual to pay me back if I loaned them \$40.

1 - Not at all Likely	2	3	4	5	6	7 - Very Likely
<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>

* 41. If this individual laughed unexpectedly at something I did or said, I would know they were not being unkind.

1 - Not at all Likely	2	3	4	5	6	7 - Very Likely
<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>

* 42. If this individual gave me a compliment on my haircut, I would believe they meant what they said.

1 - Not at all Likely	2	3	4	5	6	7 - Very Likely
<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>

* 43. If this individual borrowed something of value and returned it broken, they would offer to pay for the repairs.

1 - Not at all Likely	2	3	4	5	6	7 - Very Likely
<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>

* 44. How often do you and this individual:

	1 - Never	2	3	4	5	6	7 - Very Frequently
Do new or unique activities together?	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Get together just to hang out?	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Work together on jobs or tasks?	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>

* 45. How important are the following activities in the relationship between you and this individual?

	1 - Not Important at All	2	3	4	5	6	7 - Very Important
Doing new or unique activities together.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Getting together just to hang out?	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Working together on jobs or tasks?	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Playing video games together?	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>

46. Please describe any recent events which may have influenced how you view your relationship with this individual (i.e., a fight). Feel free to answer in as much detail as you think is necessary. If no such event has occurred, leave blank.



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You have completed the second half of this study, thank you for your participation. Please read the following debriefing information:

This study intends to investigate how watching video games being played by others influences the effects of violent video games. In addition, this study intends to examine how watching video games played by others in different multiplayer situations might influence the relationship that exists between players. During your participation, this study measured factors related to your video game playing habits, personality, mood, and the relationship between you and the individual you described. In addition, this study checked for the presence of aggression and helping behaviors after you finished watching the video game being played.

If you have any questions or concerns about your participation in this study, you can contact Anup Kumar by phone at (216) 687-4642 or by e-mail at a.kumar54@csuohio.edu. You can also contact Matt Endersien by phone at (440) 479-3230 or by e-mail at endersienm@outlook.com.

A copy of this debriefing form can be emailed to you upon request.

Thank you for your participation.