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**DEFENDER OF THE WEAK OR RENEGADE OF THE WASTELAND?
THE EFFECTS OF VIRTUAL MORAL CHOICE ON NARRATIVE PROCESSING**

A Thesis in

Media Studies

by

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ABSTRACT

In video games, complicated stories which can branch in multiple ways are possible, giving the player a great sense of control over the story. The present study's purpose was twofold: to explore the influence of individual differences on moral choice and to determine how choice and morality interact to affect narrative engagement and entertainment appraisals (i.e., enjoyment and appreciation). A 2 (choice vs. no choice) X 2 (moral vs. immoral) experiment was conducted utilizing a modified version of a video game to examine the role of moral choice. Results indicated that very few individuals preferred the bad option when given a choice. Although there were no significant differences found between conditions on transportation, appreciation, or parasocial interaction, the study revealed significant differences for identification such that those who committed more moral actions identified less with the main character. Additionally, those who chose good actions felt more moral than those who were forced to commit good actions. Finally, contrary to expectation, participants in all conditions reported significantly higher enjoyment than appreciation. Implications of these findings are discussed.

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Chapter 1

Introduction

The video game industry is vastly growing, with consumers spending over \$20 billion on games, hardware, and accessories in 2013 (“Industry Facts,” 2014). As the industry grows, hardware and software development allow for more complex games with complicated stories. The multifaceted stories found in games often revolve around morality. Of the five nominees for 2013’s VGX Game of the Year, four of them (i.e., *Bioshock Infinite*, 2013; *Grand Theft Auto V*, 2013; *The Last of Us*, 2013; *Tomb Raider*, 2013) featured protagonists who were able to commit morally questionable acts. For example, *Grand Theft Auto V* (2013) features a mission in which the player, through the main character, is forced to torture a man who is likely innocent.

Additionally, some games allow for moral decisions to be placed directly in the player’s hands. That is, rather than scripting specific actions that the player must complete to continue the game, the game gives the player options and allows her to choose which way to proceed. For example, *Hitman: Absolution* (2012) allows for players to either refrain from killing innocents, or to kill everyone who may witness their actions, regardless of whether or not they are civilians. By equipping the player with choice, game developers not only increase replay value (i.e., encourage players to play again), but also allow players to feel as though their actions are meaningful to the story (“Moral Decisions,” 2014). Although some research has examined how moral actions in video games affect players, the intersection of morality and choice is still relatively unexplored.

Extensive research has been done in the field of psychology to explore the ways in which individuals process and respond to moral dilemmas they may encounter in real life (See Greene & Haidt, 2002). However, given the increasing popularity of video games, as well as the more

pronounced hyperrealism possible due to improvements in hardware and software specifications, video games are becoming a greater part of many people's everyday lives. Further, video games allow users a "consequence-free" virtual space to explore morality and the consequences of moral decisions. Thus, a greater understanding of the ways in which users process virtual moral choices becomes important.

The purpose of this thesis is to examine the ways in which morality (good vs. bad) and the ability to choose morality (choosing which action to pursue vs. the game directing the player) may influence player engagement and gameplay appraisals (i.e., enjoyment and appreciation). Additionally, the study seeks to explore what individual differences may predict whether a player will choose a good action or bad action in-game. In doing so, inferences about users' processing of virtual moral decisions may be made, and existing theory may be examined and extended.

Chapter 2

Literature Review

Predicting Moral Choice

An increasing number of video games have been released in the past decade that either incorporate or revolve around the idea of moral choice (McCalmont, 2009). Recently, many of these games offer complex narratives that revolve around making hard decisions. For example, *The Walking Dead* (2012), Spike Video Game Awards' 2012 Game of the Year, is a narrative-driven game that centers on difficult moral decisions that the player must make. Many of the events that occur late in the game are contingent upon dialogue or action choices that the player makes.

Given the increase both in number and complexity of games featuring morality, it is important to understand how users process morality. Generally, humans process morality utilizing both affect and cognitive reasoning. According to Greene and Haidt (2002), people instantly and automatically react when they encounter an action; they believe they know something is right or wrong when they see it because they feel it. Cognition comes into play when people explain or justify their automatic moral intuitions. Both affective and cognitive moral decisions in the real world are based on learned social norms (Greene & Haidt, 2002).

Video game situations are not “real world” events. However, although game players may fully understand that the people within the game are not real, they still may partially treat those characters as social entities (Hartmann & Vorderer, 2010). As such, video games may still elicit moral concern; when forced into disturbing situations (e.g., the previously mentioned torture scene in *Grand Theft Auto V*, 2013) some players report that enjoyment is hindered (Klimmt,

Schmid, Nosper, Hartmann, & Vorderer, 2006), even though they are aware that no real people are harmed.

According to the disposition theory of drama, viewers tend to enjoy entertainment in which good things happen to liked characters and bad things happen to disliked characters (Raney, 2004). Additionally, characters become liked if they exhibit morally good behavior, while those who act immorally are disliked (Raney & Bryant, 2002). It therefore follows that players would like video games that reward good characters and punish bad characters.

However, video games in which the player's avatar is rewarded for committing violent or immoral actions exist do exist. This situation indicates that transgressive content need not necessarily reduce enjoyment. Instead, it is possible that players can overcome moral concerns if there is sufficient motivation to do so. One way this is possible is if the bad behavior is justified in some way, or if the player feels that moral considerations for some reason do not apply to the character they control (Hartmann & Vorderer, 2010). The idea that behaviors normally thought of as reprehensible can be justified, or that moral rules do not apply to certain behaviors, is known as moral disengagement (Bandura, 1999). Moral disengagement in gameplay may be necessary under some circumstances, as it eases moral concerns and allows players to enjoy the game more fully (Hartmann & Vorderer, 2010; Weaver & Lewis, 2012).

Video games themselves can offer cues that encourage justification of normally reprehensible behavior (Klass, 1990). For instance, the game may give a good reason for fighting, such as to save innocents. These types of cues may then enable unconscious moral disengagement, where the bad behavior never "feels" wrong to the player (Hartmann & Vorderer, 2010). However, in the event that these cues fail to justify morally questionable behaviors, the player may consciously remind themselves while playing that the events they are enacting are purely fictional (Hartmann & Vorderer, 2010; Klimmt et al., 2006).

While morality is important to many modern games, the ability to make moral choices is just as important. Though some games lock players into a specific storyline, wherein they are forced to behave in certain ways to continue the game, others allow a spectrum of moral decisions to be made. For example, an early quest in *Fallout 3* (2008) gives the player a choice: either disarm a nuclear warhead that is located in the midst of a small town, saving everyone, or detonate it and kill everyone in exchange for a large reward. Some players seem to be more inclined to choose the good outcome while others are attracted to the bad.

Previous researchers have found that those who choose good actions do not enjoy the game experience significantly more or less than those who choose bad actions (Hartmann & Vorderer, 2010; Shafer, 2012). Additionally, Shafer (2012) found a strong correlation between moral disengagement and evil actions as well as moral activation and good actions. These findings indicate that some factors encourage some players to morally disengage, while others are morally activated; either way, players appear satisfied with their choices.

Personality Traits as Predictors

Given the variation in players' moral choices, it seems evident that individual differences likely play important roles in predicting player behavior. Some research has determined that certain personality traits (e.g., neuroticism, extroversion, openness, and psychoticism) may be able to predict the frequency of violent video game play, not unlike the actions committed by morally bad characters. According to Hall (2005), "Neuroticism refers to an individual's tendency toward anxiousness" (pg. 381). Neurotic individuals trend toward emotional instability and vulnerability (Chory & Goodboy, 2011). Yet the relationship between neuroticism and violent video gameplay has been somewhat inconsistent among different study findings. Some scholars, such as Bartholow, Sestir, and Davis (2005), found no relationship between neuroticism and

violent game exposure. Other scholars, such as Anderson and colleagues (2004), found a negative relationship. Chory and Goodboy (2011) found that neurotic individuals tend to play games with more violence. Given the inconsistency in findings, the relationship between neuroticism and violent video gameplay remains unclear.

Extroverts are categorized by a tendency to be both sociable and high in sensation-seeking (Chory & Goodboy, 2011), and are often prone to pursuing stimulation (Costa Jr., Zonderman, & McCrae, 1991). This need for stimulation among extroverts is associated with greater enjoyment of violent television and movies (Aluja-Fabregat & Torrubia-Beltri, 1998; Hall, 2005; Krmar & Kean, 2005; Nabi & Riddle, 2008). This association may partially reflect the idea that extroverts desire excitement, and violent media can provide it (Krmar & Kean, 2005). However, research on the link between extroversion and violent game play has been inconclusive. According to Lachlan and Maloney (2008), extroverts tended to commit more violent acts in-game than non-extroverts. In contrast, other research has found no link between extroversion and frequency of violent video game play (Anderson et al., 2004; Bartholow et al., 2005; Chory & Goodboy, 2011).

Individuals high in openness tend to be more receptive than others toward aesthetic experiences and intellect pursuits; they also tend to have active imaginations (Chory & Goodboy, 2011). Previous literature suggests that openness may be positively related to violent video game play (Chory & Goodboy, 2011; Krmar & Kean, 2005). This relationship could exist because open individuals are attracted to video games due to their fantasy elements; as such, they may be more likely to disengage with violent or immoral acts by reminding themselves that it is just a fantasy.

According to Niklas, Turpeinen, Saari, Puttonen, and Keltikangas-Järvinen (2008), individuals who are high in psychoticism “are impulsive, sadistic, hostile, aggressive, unemotional, and lacking in empathy” (pg. 115; see H. Eysenck & Eysenck, 1991). In

comparison to others, these individuals tend to experience less discomfort and more humor when exposed to media violence (Bruggemann & Barry, 2002). Interestingly, individuals scoring high in psychoticism do experience negatively-valenced arousal when committing violent acts (i.e., killing or wounding an opponent) within a video game, they do so at a decreased level in comparison to low-psychoticism individuals (Ravaja et al., 2008).

Given the theoretical and empirical rationale discussed, and the violent events typically associated with immoral game actions, the following research question is posed:

RQ1: How will personality traits (i.e., neuroticism, extroversion, openness, and psychoticism) predict moral choice?

Moral Identity as a Predictor

In addition to personality traits that may be important in predicting moral choice, moral identity may also play a role. Moral identity is a psychological construct defined as the importance of morality to a person's self-identity (Blasi, 1984). There is evidence to suggest that moral identity can play a role in the way people respond to moral choices (Shao, Aquino, & Freeman, 2008). If individuals have strong moral identities, they will act in ways consistent with those identities when they encounter a moral dilemma; they do so because acting against their moral identities would be like acting against their own self-concepts (Shao et al., 2008). Likewise, there is also evidence to suggest that a salient moral identity can promote prosocial behavior; Aquino, McFerran, and Laven (2011) found that those who scored high in moral identity responded more positively to acts of exceptional moral goodness, experiencing higher levels of elevation and becoming more likely to donate money to charity than those low in moral identity. Based on the association between moral identity and prosocial behavior, the following hypothesis is presented:

H1: Those with a strong moral identity will be more likely than those low in moral identity to choose moral in-game behavior.

The Effects of Moral Choice on the Gameplay Experience

In addition to examining predictors of moral choice, this thesis also examines the role of moral choice on how users experience gameplay in terms of their enjoyment, appreciation, an engagement.

Entertainment Gratifications—Enjoyment and Appreciation

Past research on entertainment gratification has generally tended to examine viewer enjoyment. More recently, scholars have suggested that conceptualizations of the entertainment experience be broadened to include responses more akin to “appreciation,” which is associated with more somber or contemplative content.

According to Nabi and Krmar (2004), media enjoyment can be defined as a tripartite attitude that consists of “affective, cognitive, and behavioral information that mutually exert influence on one another” (p. 296). Affect is among the most common of interpretations of enjoyment offered by scholars (Raney & Bryant, 2002). Many researchers rely on a purely affective conceptualization of enjoyment, measuring it by asking participants how positive they felt about the media experience. However, affect alone may not be sufficient. Cognition and behavior are also important; enjoyment can stem from cognitions such as social comparisons (Mares & Cantor, 1992) or from morality-based cognitions (Raney, 2004). Additionally, behavior is another dimension indicative of enjoyment. In this context, behavior includes actions taken while watching or playing that manifest the viewer/player’s liking of the experience (Krcmar &

Renfro, 2005; Nabi & Krcmar, 2004). For example, binge watching behavior could be indicative of enjoyment, as it implies that viewers enjoy a show to the point that they wish to watch more episodes without waiting.

However, enjoyment is not the only positive outcome possible for narratives. If a narrative is thought-provoking or emotionally heavy, appreciation may result instead. For example, *The Walking Dead* (2012) tells a gripping story in which the main character Lee, after successfully protecting 9-year-old Clementine for the entirety of the game in the midst of a zombie apocalypse, eventually succumbs to a zombie bite and dies, leaving Clem alone. In this case, it would be seemingly inappropriate to call the gameplay experience pleasurable or enjoyable, yet the critically-acclaimed game sold over one million copies within a month of first release (Moriarty, 2012). In this example, it is likely that the game evoked appreciation rather than enjoyment.

Whereas enjoyment is hedonically motivated (i.e., pleasurable or fun), appreciation is conceptualized as being driven by eudaimonic motivations (Oliver & Bartsch, 2010, 2011; Oliver & Raney, 2011), which are characterized by a “need to search for and ponder life’s meaning, truths, and purposes” (Oliver & Raney, 2011, pg. 985). Some researchers have suggested that, when consuming narratives, humans can either undergo a quick, intuitive process that results in enjoyment, or a slow, deliberative path that results in appreciation (Lewis, Tamborini, & Weber, 2014).

Some research has found that character morality can have an influence over whether enjoyment or appreciation is more likely. For instance, Krakowiak and Oliver (2012) found that characters who are morally ambiguous were less liked than their morally good counterparts, but just as engaging. Further, Lewis and colleagues (2014) found that portrayals featuring mixed morality resulted in greater appreciation and less enjoyment, while wholly positive stories resulted in greater enjoyment and less appreciation.

Influence of Moral Complexity on User Gratifications

As users encounter a narrative, they may make judgments based on the moral complexity of the story. According to Tamborini (2012; 2011), people engage in two separate types of processing based on the moral complexity. Tamborini's Model of Intuitive Morality and Exemplars (MIME) argues that moral complexity of a narrative lies within the story's pattern of adherence or violation to one of five moral modules proposed by Haidt and Joseph (2008): harm/care, fairness loyalty, authority, and purity. If a narrative involves violation or adherence to all of these, it can be said to be simple; likewise, if there is not a clear pattern, or if the story adheres to some but violates others, the narrative is said to be complex (Tamborini, 2011).

As users engage with narratives, they make short-term appraisals according to its narrative complexity (Tamborini, 2011). If the narrative is simple, the response to the story is automatic, and the individual will experience hedonic pleasure. However, if the narrative is complex, the individual undergoes a separate process; here, the user deliberates over the content - resulting not in enjoyment but appreciation (Lewis, Tamorini, and Weber, 2014; Tamborini, 2011). The key here is cognitive conflict; as players encounter complex narratives, they are confronted with conflict. The story may adhere to certain moral modules while violating others. This conflict causes them to think about the implications and mentally work through them, leading to greater appreciation.

For example, *New Super Mario Bros. U* (2012) features a protagonist (Mario) who acts valiantly, saving a princess from the clutches of evil. This type of game features only a simple narrative and should thus be met with enjoyment. In contrast, *The Last of Us* (2013) features a morally ambiguous protagonist (Joel) who saves one child at the expense of millions of people. This type of narrative is complex; certain moral modules are adhered to while others are violated.

The player should process this game more deliberately, carefully thinking about it and eventually arriving at appreciation rather than enjoyment.

This dual-process model has been supported by recent scholarship. For instance, Grizzard, Tamborini, Lewis, Wang, and Prabhu (2014) found that players experiencing greater narrative complexity (i.e., committing immoral acts in-game) experienced greater feelings of guilt, an emotion more indicative of appreciation than enjoyment.

The importance of moral complexity may be particularly relevant to gaming. That is, in comparison with traditional media, video games offer the player a greater sense of agency; they have greater control over the actions made in-game (Grizzard et al., 2014; Weaver & Lewis, 2012). The player bears some responsibility over the moral (or immoral) actions taken in the game. Some video games, such as *The Walking Dead* (2012) and *Fallout 3* (2008), extend this player agency by taking moral choices completely away from the in-game character and giving them to the player. Thus the player is presented with multiple options on how to proceed and must make the moral decision for her/himself. It can be said, then, that moral choices offer another form of moral complexity exclusive to interactive media.

Green and Jenkins (2014) suggested that interactive narratives, of which video games are one type, induce a sense of responsibility in the game players, so players feel accountable for the actions that occur in-game. As a result, players have stronger positive reactions to the gameplay experience (Green & Jenkins, 2014; Klimmt, Hartmann, & Frey, 2007). Additionally, interactive narratives are more likely than traditional narratives to induce counterfactual thinking, or thinking of alternatives to what was presented in the story (Green & Jenkins, 2014). These counterfactuals could serve as a form of deliberation discussed in MIME. As the players are given multiple in-game choices, they deliberate over which option is best. Once they make a decision, they think about whether the decision they made was correct.

Moser and Fang (2014) tested the influence of branching narratives specifically in the context of video gameplay. In their study, the authors either showed players that the narrative branched (i.e., had at least two separate outcomes) or did not; they also manipulated whether participants felt they had effectance, or the perception of being in control. They determined that players who were made aware of the branching narrative experienced higher levels of engagement and enjoyment (which was not measured in comparison with appreciation) than those who thought the narrative to be linear. Additionally, those who had salient decision points experienced higher levels of cognitive enjoyment if they were made aware of branching narratives. Although Moser and Fang used footage of a video game rather than allowing participants to play themselves, these results offer preliminary support for the idea that video game choices can serve as a form of cognitive conflict resulting in positive affective appraisal, similar to moral complexity.

Given the nature of cognitive conflict as previously discussed, the following hypotheses are proposed:

H2: Players experiencing higher cognitive conflict (i.e., the player being faced with a choice over whether to act morally or immorally) will experience higher levels of appreciation than those with lower cognitive conflict (i.e., the player not being given a choice).

H3: Players experiencing lower cognitive conflict (i.e., the player not being given a choice) will experience higher levels of enjoyment than those experiencing higher cognitive conflict (i.e., the player being given a choice).

Narrative Engagement

While MIME model primarily focuses on users' entertainment gratifications, the model of narrative comprehension and engagement (Busselle & Bilandzic, 2008) describes the *processes* by which these outcomes occur. According to Busselle and Bilandzic (2008), narratives are more than stories; they are created when players combine their real world experience and knowledge of genre stereotypes with the text of the story. In this way, the narrative experience can differ vastly for two people, even though the story itself is the same.

As the narrative is constructed, the player begins to engage with the narrative, provided that there is no disruption in the process (e.g., discrepancies that lead to realism judgments). This engagement comes in two forms: involvement with the story world and involvement with the characters (Busselle & Bilandzic, 2008). As viewers engage with the story world, they become immersed into the setting; they are transported into the world of the narrative. Transportation occurs when the viewer or player feels lost in the story (Green, Brock, & Kaufman, 2004). The story world provides a safe place for viewers to experience the events of the story; it allows them to place themselves among characters without consequence (Green, 2005). Just as people can travel in the real world, losing certain aspects of their "real lives" and returning home changed from the experience, narratives allow for people to travel to story worlds without physically leaving their homes (Gerrig, 1993).

To avoid conflation when considering transportation, it becomes important to distinguish it from other, related constructs. Two such related concepts are presence and flow. Presence, as defined by Lombard and Ditton (1997), refers to the perception that a mediated experience is not mediated. When users experience presence, they feel as though the medium is not there. For example, if someone were to use Netflix to watch their favorite movie, they may feel so present that they forget the medium (e.g., Netflix) almost entirely. Using this definition, it may appear

that presence may be similar to the transportation sub-dimension of narrative engagement. However, there are distinctions. Namely, transportation by definition occurs when there is narrative involved (Green et al., 2004). Transportation is agnostic toward the technology used to tell the story; it can occur in written stories, movies, video games, and other media. In contrast, presence has very little to do with story. Specifically, presence relies on the medium itself. The affordances of the technology used help to facilitate presence (Ravaja et al., 2006).

Whereas transportation revolves around immersion into a story, flow centers on the action undertaken by the user. Flow occurs in “autotelic” (i.e., intrinsically motivated) activity (Nakamura & Csikszentmihalyi, 2002). For example, someone who plays video games because they generally enjoy video games is engaging in autotelic activity. A flow state occurs when there is a balance between the challenge involved in completing an action and the skill required to engage in it (Sherry, 2004). If difficulty is higher than the skill the user possesses, the user may become anxious. In contrast, if the user’s ability is far higher than the difficulty of the action, he or she may become bored. The experience of flow (as well as anxiety or boredom) can occur in media settings. For example, a video game can be difficult, but if a player is competent enough to progress through the game, flow may occur. Given that neither presence nor flow necessitate a story, they can be considered conceptually distinct from transportation.

Although it is certainly possible for all types of narratives to facilitate transportation, the interactive nature of video games set them apart from “traditional” media (Klimmt, Hefner, & Vorderer, 2009). There is arguably less perceived distance between the player and the story world. For example, players often directly participate in events and in some games, such as *Heavy Rain* (2010) or *Fallout 3* (2008), players can make decisions that can fundamentally alter the narrative and the environment. As such, transportation can be vital to the video game narrative experience. However, simply being transported into the narrative world is not sufficient for engagement -- characters are also vital.

Engagement with a character can come in two main forms. The first of these, parasocial interaction, was initially defined as an encounter between a person and a media persona in which the persona gives the illusion that they are responding in a seemingly face-to-face manner when in fact it is one-sided (Horton & Wohl, 1956). These interactions, which function similarly to face-to-face interactions, occur immediately whenever a media user encounters a media persona (Schramm & Hartmann, 2008; Wang, Fink, & Cai, 2008). Important to the present research, parasocial interactions are not limited to traditional visual media. As the media experience becomes more interactive, the parasocial interactions may arguably grow deeper. This tendency is especially true for video games, in which players can insert themselves into the game world and actively participate (Jin & Park, 2009). Parasocial interactions become more evident when the interactive experience is wholly realistic and the characters empathetic (Taylor, 2011). This is not to say that characters in inherently unrealistic genres (e.g., *Skyrim*, 2011), where the player wanders the countryside killing dragons with magic and medieval weaponry) cannot evoke parasocial interactions; quite the opposite. In these unrealistic cases, the in-game characters should behave rationally and in a manner consistent with the established rules of the genre to promote stronger parasocial interactions.

The second type of engagement with characters is identification. As defined by Cohen (2001), identification occurs when a person understands external events as though he or she is actually living them. Viewers internalize events that happen to characters on screen. As they immerse themselves into the narrative (i.e., become transported), they become so focused on the events of the story that they temporarily “lose” parts of their own self-awareness in the story and take on some characteristics of the character. In this way, they encompass aspects of the character’s personality and abilities, expanding their concept of self to include the vicarious experience (Slater, Johnson, Cohen, Comello, & Ewoldsen, 2014). Even so, there is still distance

between viewer and character; on some level, the viewer realizes that they are simply watching events unfold.

Given the inherently interactive nature of gaming, video game identification can be slightly more complex. This complexity is due to video games' monadic nature. Players view themselves as non-distinct from the avatars they control, so the perceived distance may be much smaller than it would be in other media (Downs, 2010; Klimmt et al., 2009). Video game identification also occurs quicker and easier than in other media because the tasks that the player must complete are often strongly associated with the role of the avatar. As a result, it becomes more difficult to distinguish between player and avatar (Klimmt, Hefner, Vorderer, Roth, & Blake, 2010). This lack of distance can be seen clearly in the way players express game events. Many times when an avatar is defeated, for example, players may express that they have died instead of the avatar.

Although the model of narrative engagement describes the mechanisms by which users become involved with narratives, it does not account for character morality or cognitive conflict in the engagement process. Thus, the following research questions:

RQ2: What is the relationship between player morality (good vs. bad) and narrative engagement?

RQ3: What is the relationship between cognitive conflict (making a moral decision vs. not making a moral decision) and narrative engagement?

The Present Research

To summarize, both good and bad characters are prevalent in video games, as in many other forms of entertainment (e.g., film, novels, and sporting events). However, the morality of characters in video games seems to be particularly important given the effectance that video games may allow. The purpose of this thesis was to examine two related issues—the role of personality traits on users' moral action selection and the role of player morality and moral choice on user enjoyment, appreciation, and engagement.

Chapter 3

Methods

In order to address the proposed hypotheses and research questions, a 2 (moral vs. immoral) X 2 (choice vs. no choice) factorial experiment was conducted. Choice was manipulated, and for those in the no-choice condition, morality was also manipulated. However, those in the choice condition could choose to play a moral versus immoral character, resulting in three experimental conditions—one in which choice was allowed, and two in which choice was restricted.

The experiment was conducted in two phases. First, participants filled out an online questionnaire gauging their preexisting personality traits. Approximately one week later, participants were sent to a media effects laboratory where they played a video game and completed a questionnaire regarding their reactions to the gameplay experience. All questionnaire items are listed in the Appendix.

Participants

One hundred forty participants were recruited from multiple undergraduate communications classes at a large university in the northeast United States and completed both parts of the experiment. In exchange for their participation, they received extra credit. 78.5% of participants were White, and 53.5% were male. They ranged in age from 18 to 25 years old ($M = 19.56$, $SD = 1.34$).

Procedure

The study was conducted in two parts. First, participants accessed an online questionnaire. The questionnaire contained an implied consent form; after reading the consent form, they were directed to questions ascertaining demographic information and levels of neuroticism, psychoticism, extroversion, openness, and moral identity. They were then asked to input the last four digits of their phone numbers, used to link both parts of the study. Then, they were directed to a separate website where they signed up for a timeslot for the second part of the study.

Part 2 of the study was held in a media effects laboratory that housed 10 PCs. Each PC was pre-loaded with one of the three mod versions created: five computers contained the choice mod, three contained the no-choice, bad action mod, and the remaining two contained the no-choice, good action mod. Participants were randomly assigned to the lab computers. They were also given a handout listing the game controls they would need; they were allowed to consult this handout at any point during gameplay. They were shown a brief introduction video, including the basic plot, an introduction to their avatar, the Courier, and a brief tutorial on the game's controls. They were then instructed to complete the quest, SOS. Once the quest was completed, participants were directed to an online questionnaire. This questionnaire contained narrative engagement and outcome items, as well as open-ended questions asking questions how they felt about the actions taken in the game. Upon completion of this questionnaire, participants were thanked for their time and awarded extra credit.

Stimulus Materials

Bethesda's *Fallout: New Vegas* (NV) was used as the stimulus material. NV is a post-apocalyptic, open-world role-playing game in which the players are free to navigate the area as they desire; they are permitted to make different decisions on how to proceed (e.g., using diplomacy to solve an issue vs. shooting their way out of it) without breaking the narrative. As such, it offers the chance for players to make difficult moral decisions at several different junctions.

Although NV allows for a great degree of player freedom and features moral decisions, no one quest offers controls suitable to an experimental environment. Therefore, the game was modified ("modded") to protect internal validity (see Elson & Quandt, 2014). The *Garden of Eden Creation Kit* (GECK) is modding software designed specifically for use with *Fallout 3* and *Fallout: New Vegas* (*The Garden of Eden Creation Kit*, 2010). The GECK allows users to create plug-ins, or additions, to the base game that are then integrated into the base game. This allows the modder to create additional items, characters, and even quests.

Within the game, a specific quest entitled "SOS" was created. As the player characters wandered around the starting point, he/she picked up an SOS signal which began the quest. From here, they talked to a character who instructed them to travel to a nearby location (Vault 94) to assist. Once at the Vault, the player met the Overseer who contended that one of her children wanted to run away; the Overseer then asked the player for help in exchange for payment. The player located the missing child, but discovered that the child was actually the Overseer's slave. From here, the narrative could branch into two directions: the player could either help free the child and other children from the Overseer's grasp, or the player could return the child to slavery and collect payment from the Overseer. At the end of the quest, players returned to their initial location to speak to the character who gave them the quest. As shown in Figure 1-1, this

character's dialogue changed based on whether the player committed the moral or immoral act. It took participants between 6 and 36 minutes to complete the quest ($M = 19.41$, $SD = 6.34$).



Figure 1-1. Reinforcing Morality Manipulation

Manipulated Independent Variables

Morality

This experiment consisted of two factors: morality and presence of choice. To manipulate morality, two possible quest outcomes were created. In both cases, the quest followed the same path until the player met the missing child. At this point, the resulting story branched based on whether or not the player was in a “good” condition or a “bad” condition. In the good condition, the player assisted the enslaved child by defeating the evil Overseer and releasing all the children in the Vault from their prison. In the bad condition, players fought the person helping the children escape and returned the child to the Overseer.

Choice

Choice was also manipulated. In conditions that allowed the player a choice, both the good and bad options were given to the player. In conditions where choice was restricted, the game either allowed participants the good option or the bad option, but did not inform them of the existence of an alternate choice. Overall, three versions of the mod were created: one in which the player was forced into committing a good act, one where the player was made to commit a bad act, and one in which the player was given the choice between a good action and bad action. Please see Figure 2-1 to see how choice was displayed to participants.



Figure 2-1. Displaying Choice to Participants

Pretest

All versions of the created mod were pretested to ensure that the manipulations were working successfully. Thirty-one participants (87.1% White, 93.5% female), ranging in age from 19 to 24 ($M = 20.77$, $SD = 1.01$) completed the pretest. Participants were recruited from

undergraduate communications classes and were given extra credit in return for their participation.

Participants arrived at a media effects laboratory, where they were randomly seated at one of 10 PCs, each loaded with one of the three mod versions. Participants were given a brief overview of the setting and main character in the mod, followed by a video tutorial, which explained the basic controls. They were then told to play the quest to completion and then answer a questionnaire.

Single item, 7-point, Likert-type items ascertained level of difficulty (i.e., “I found the game difficult”), stimulating (i.e., “I found the game stimulating), and confusing (i.e., I found the game confusing). Two items each ascertained perceived morality (i.e., “While playing the game, I felt that I acted morally,” and “While playing the game, I felt that my actions were morally questionable.”) and perceived choice (i.e., “While playing the game, I felt that the game allowed me to do what I wanted to do,” and “While playing the game, I felt that I had a choice as to what actions to take.”).

T-tests were conducted using morality and moral choice as grouping variables to determine how the manipulation functioned. It was determined that, using morality as a grouping variable, both good and bad conditions were equally difficult ($t(29) = 1.56, p = .13$), stimulating ($t(29) = -1.39, p = .18$), and confusing ($t(29) = .15, p = .88$). Participants in good and bad conditions did not show differences in how they perceived the game to “allow [them] to do what [they] wanted ($t(29) = .36, p = .72$).” However, participants in the good condition ($M = 4.65, SD = 1.81$) did feel that they had more of a choice than did those in the bad condition ($M = 2.82, SD = 1.72, t(29) = 2.74, p < .05$.); a closer examination of the data revealed that every participant in the choice condition chose to act morally. Therefore, the decisions made by participants, rather than differences inherent to the good and bad conditions, may have been the reason behind this statistical significance found. Participants in the good condition ($M = 4.75, SD = 2.12$) believed

that they had acted morally to a greater degree than those in the bad conditions ($M = 2.36$, $SD = 1.36$, $t(29) = 3.35$, $p < .01$). Additionally, those in the bad condition ($M = 5.45$, $SD = 1.81$) felt that their actions were more morally questionable than did those in the good condition ($M = 3.45$, $SD = 1.82$, $t(29) = -2.94$, $p < .01$). Given that the good and bad conditions differed only as intended, with the exception that no one in the choice condition chose to act immorally, the morality manipulation appears to be successful.

In using choice as a grouping variable, it was found that those in choice conditions ($M = 5.31$, $SD = 1.55$) found the mod to be significantly more difficult than those without a choice ($M = 3.67$, $SD = 1.94$, $t(29) = 2.52$, $p < .05$). This could be because those in the choice conditions had a difficult decision to make. However, both choices were equally stimulating ($t(29) = 1.05$, $p = .30$) and confusing ($t(29) = -1.90$, $p = .07$). Importantly, those given a choice ($M = 4.46$, $SD = 2.11$) perceived that the game allowed them to do what they wanted to a greater degree than did those with no choice ($M = 2.89$, $SD = 1.88$, $t(29) = 2.19$, $p < .05$); the same pattern held for perceptions that participants had a choice (choice: $M = 5.23$, $SD = 1.69$, no choice: $M = 3.11$, $SD = 1.68$, $t(29) = 2.19$, $p < .05$). Both choice and non-choice conditions were equally morally questionable ($t(29) = -1.48$, $p = .15$); however, those in the choice conditions felt that they acted more morally ($M = 5.23$, $SD = 1.96$) than did those in the non-choice conditions ($M = 2.94$, $SD = 1.86$, $t(29) = 3.30$, $p < .01$). Again, this may be due to the fact that those in the choice conditions all choose the good actions; however, some participants in the non-choice conditions were forced into acting immorally. Therefore, these results indicate that the choice manipulation functioned properly. However, given the relatively low sample size for the pretest, the same questions were again asked in the main study as a manipulation check.

Measured Predictor Variables

Personality traits

Extroversion, psychoticism, neuroticism, openness, and moral identity were measured as predictors of the choice to play moral or immoral characters. Each of these was measured on a 7-point, Likert-type scale. A correlation matrix for all measured predictor variables is shown in Table 1-1.

Table 1-1. Correlations Between Predictor Variables

	1.	2.	3.	4.	5.
1. Openness					
2. Extroversion	.41**				
3. Psychoticism	-.13	-.12			
4. Neuroticism	-.14	-.22**	.11		
5. Moral Identity	.33**	.29**	-.38**	.00	

Note: $N = 140$, *** = $p < .001$ ** = $p < .01$ * = $p < .05$

Extroversion was adapted from Eysenck, Eysenck, and Barrett (1985) and included 11 items such as, “I am a talkative person,” and “I can easily add life to a dull party” ($\alpha = .92$). Psychoticism, also adapted from Eysenck and colleagues (1985), initially included 12 items such as “I would like for other people to be afraid of me,” and “It is better to follow society’s rules

than go my own way (reverse coded)” Four items were dropped due to low reliability. The resulting eight-item scale was reliable with a Cronbach’s alpha of .68. Twelve items, such as “My mood often goes up and down,” and “I am an irritable person,” comprised the neuroticism scale (Eysenck et al., 1985), reliable with a Cronbach’s alpha of .88.

Openness, consisting of 13 items, was adapted from Woo and colleagues (2014). Two items each were taken from the intellectual efficiency, ingenuity, curiosity, aesthetics, tolerance, and depth subsets of openness and were found to be relatively reliable ($\alpha = .71$). Sample items include “I try to learn something new every day,” and “I don’t like trying new things and would rather stick with what I know (reverse coded).”

Moral identity

Moral identity items were adapted from the internalization subset of Aquino and Reed’s (2002) moral identity measure. For this section, participants were asked to picture a person possessing a number of moral traits (e.g., friendly, generous, kind). Following this, they were asked six Likert-type questions while visualizing the moral person indicating the degree to which being a moral person was important to them. The resulting index was found to be reliable ($\alpha = .88$). Example items include “Being someone who has these characteristics is an important part of who I am,” and “I strongly desire to have these characteristics.”

Dependent Variables

Each dependent variable was measured using 7-point, Likert-type items, and scales were created by averaging the items comprising the measure. Table 1-2 shows a correlation matrix including all dependent variables.

Table 1-2. Correlations Between Dependent Variables

	1.	2.	3.	4.	5.	6.	7.	8.	9.
1. Presence									
2. Flow	.34**								
3. Transportation	.60**	.33**							
4. Identification	.34**	.46**	.23**						
5. PSI	.46**	.25**	.27**	.49**					
6. Enjoyment	.36**	.57**	.37**	.57**	.48**				
7. Appreciation	.43**	.43**	.36**	.42**	.61**	.60**			
8. Positive affect	.42**	.55**	.31**	.65**	.39**	.74**	.44**		
9. Negative affect	.20*	-.12	.02	-.21*	.17*	-.09	.19*	-.13	
10. Focused affect	.47**	.47**	.60**	.40**	.45**	.69**	.61**	.57**	-.08

Note: $N = 140$, *** = $p < .001$ ** = $p < .01$ * = $p < .05$

Narrative engagement

Identification, parasocial interaction, and transportation comprised narrative engagement.

Identification was measured using 16 items adapted from Downs (2010) (e.g., “The Courier is my

favorite character I encountered in the game” and “The Courier has the same attitude toward good and evil as I do”, $\alpha = .90$). Parasocial interaction was measured using items adapted from the PSI-Process Scales (Schramm & Hartmann, 2008). One item was dropped due to low reliability, resulting in a Cronbach’s alpha of .83. Sample items included, “I kept wondering if I knew people similar to the Courier” and “Sometimes, I felt like speaking to the Courier.” Finally, transportation was measured utilizing three attentional focus and three narrative presence items adapted from Busselle and Bilandzic (2009). Example items include “I found my mind wandering while I was playing the game (reverse coded),” and “At times during the game, the story world was closer to me than the real world.” Reliability for transportation was found to be within an acceptable range ($\alpha = .76$).

Presence and flow

To distinguish engagement from presence and flow, both of these concepts were measured. Presence consisted of seven items adapted from Vorderer and colleagues (2004) and used items such as, “I felt like the objects in the game surrounded me,” and “I felt as though I was physically present in the environment of the game.” The resulting index was reliable with a Cronbach’s alpha of .94. Flow was measured using nine items adapted from Jackson and Eklund (2002, 2004; see Jackson, Martin, & Eklund, 2008). Sample items included, “My abilities matched the challenge of the situation,” and “Time seemed to alter (either slowed down or sped up) as I played.” Reliability was found to be good ($\alpha = .80$).

Enjoyment and appreciation

Enjoyment was composed of five items, such as “I felt good while playing the game,” and “It made me happy to play this,” adapted from Kremer and Renfro (2005). The resulting index was found to be reliable with a Cronbach’s alpha of .93. Six items, such as “This game will stick with me for a long time,” and “This game was thought-provoking” comprised appreciation (Oliver & Bartsch, 2010), reliable with a Cronbach’s alpha of .90.

Affect

Participants’ affect was measured utilizing 14 items assessing the strength of their affective responses. These items were then analyzed in a principle components analysis using a varimax rotation (see Table 1-3). Three factors with eigenvalues greater than 1 emerged, accounting for 69.76%. The first factor, labelled “Positive Affect,” included seven items such as “Happy” and “Upbeat.” It was found to be reliable ($\alpha = .90$). “Negative Affect,” the second factor, was composed of five items (e.g., “Sad” and “Guilty”) reliable with a Cronbach’s alpha of .86. The final factor, labelled “Focused Affect” included three items, such as “Interested” and “Bored (reverse coded),” reliable with a Cronbach’s alpha of .83.

Table 1-3. Factor Loadings for Affect Using Principal Components and Varimax Rotation

	Positive Affect	Negative Affect	Focused Affect
Cheerful	.879	-.061	.095
Happy	.829	-.163	.199
Proud	.820	-.073	.203
Upbeat	.808	-.029	.176
Inspired	.715	.086	.293
Strong	.682	.164	.254
Sorrowful	.074	.858	.031
Remorseful	-.031	.849	.188
Sad	-.084	.842	-.010
Guilty	.059	.755	.048
Depressed	-.129	.671	-.377
Bored*	.191	-.047	.815
Interested	.406	.061	.807
Engaged	.287	.018	.779
Eigenvalue	5.14	3.25	1.31
% of Variance Explained	36.69	23.23	9.34

Note. * indicates reverse coded item.

Control Variables

This experiment controlled for video game usage. Participants were asked three questions used to determine how often they played video games (e.g., “Roughly how many hours a week do you play video games on a console,” and “Roughly how many hours a week do you play video games on a personal computer”). The responses to these items were summed to create a single item assessing typical weekly frequency of gameplay. Because a participant’s answer on one of these questions was not necessarily predictive of the same participant’s answer on another question (i.e., a participant could play video games on a computer often while not playing at all on a console), reliability was not assessed.

Additionally, this study controlled for whether or not participants had ever played NV before. This was assessed dichotomously by asking participants to indicate whether or not they had ever played the game. Because this question was asked in the first questionnaire, participants who were unable to be matched across both questionnaires needed to be excluded; this resulted in four participants being removed from the dataset. Descriptive statistics for all measured variables are shown in Table 2-1.

Table 2-1. Descriptive Statistics for all Measured Variables

	Overall Mean	Skewness	G/C Mean	G/NC Mean	B/NC Mean
Openness	4.68 (0.70)	0.46	4.63 (0.71)	4.83 (0.71)	4.61 (0.68)
Extroversion	4.94 (1.13)	-0.45	4.81 (1.22)	5.31 (1.10)	4.76 (0.92)
Psychoticism	3.11 (0.66)	0.62	3.11 (0.68)	3.17 (0.75)	3.09 (0.53)
Neuroticism	4.16 (1.06)	-0.21	4.26 (0.88)	4.07 (1.15)	4.16 (1.12)
Moral Identity	6.29 (0.89)	-1.48	6.22 (0.91)	6.13 (1.01)	6.44 (0.82)
Presence	4.12 (1.37)	-0.34	4.26 (1.24)	4.21 (1.46)	3.91 (1.46)
Flow	4.64 (0.98)	-0.30	4.93 (0.89)	4.67 (1.08)	4.39 (0.93)
Transportation	4.69 (1.07)	-0.31	4.86 (1.04)	4.85 (1.08)	4.47 (1.14)
Identification	3.56 (1.02)	-0.22	3.96 (0.91)	3.76 (0.94)	3.04 (1.02)
PSI	3.25 (1.00)	-0.47	3.36 (0.92)	3.17 (1.15)	3.31 (0.90)
Enjoyment	4.38 (1.53)	-0.57	4.86 (1.26)	4.34 (1.74)	4.15 (1.48)
Appreciation	3.34 (1.33)	0.03	3.46 (1.29)	3.28 (1.36)	3.37 (1.26)
Positive Affect	3.62 (1.32)	-0.34	4.17 (1.08)	3.67 (1.45)	3.18 (1.19)
Negative Affect	2.90 (1.36)	0.54	2.59 (1.15)	2.34 (0.97)	3.51 (1.48)
Focused Affect	5.10 (1.39)	-0.72	5.43 (1.29)	5.00 (1.50)	5.06 (1.37)
Perceived Morality	3.98 (1.95)	-0.03	5.47 (1.38)	3.73 (1.64)	2.97 (1.86)
Perceived Choice	3.82 (1.73)	0.10	5.01 (1.58)	3.96 (1.44)	2.62 (1.26)
Hours per Week	6.46 (8.24)	2.90	7.34 (7.49)	6.08 (7.46)	6.44 (9.92)

Note. Standard Deviations in parentheses below means. G/C = good/choice. G/NC = good/no choice. B/NC = bad/no choice.

Chapter 4

Results

This thesis had two main goals: to explore the relationship between individual difference variables and moral choice and to determine how morality and moral choice influence player engagement, enjoyment and appreciation. However, prior to analysis, it was discovered that only seven participants chose to commit the immoral action posed to them. Therefore, these participants were excluded from analysis, resulting in three conditions: bad/no-choice ($n = 47$), good/no-choice ($n = 41$), and good/choice ($n = 46$). These cell sizes were somewhat surprising, as the good/choice condition should have been approximately twice the size of the other cells. It may be that participants gravitated more toward certain computers in the laboratory over others, resulting in unexpected cell sizes. Therefore, analysis was conducted to ensure the cells were similar in makeup; cells were not significantly different in participants' gender ($\chi^2 (1, N = 131) = 1.63, p = .45$), average gameplay hours ($F (2, 131) = 2.84, p = .06$), or whether or not they had played the game before ($X^2 (1, N = 131) = .62, p = .73$), indicating that random assignment to condition was successful.

Manipulation Check

As in the pretest mentioned earlier, participants were asked four 7-point, Likert-type questions to determine whether the manipulation was successful. Two of these questions were related to perceived morality (e.g., "The actions I took were morally questionable."), while the other two determined perceived choice (e.g., "I felt that I had a choice as to what actions to take."). Perceived morality items were found to be significantly correlated ($r = .76, p < .001$), as

were perceived choice items ($r = .57, p < .001$). Thus, these items were combined into two scales representing choice and morality respectively.

Analyses of covariance (ANCOVAs) were used to determine how condition influenced perceived morality and perceived choice. Condition (bad/no choice, good/no choice, good/choice) was used as an independent variable, and hours played per week and whether participants had prior experience with *Fallout: New Vegas* (NV) were used as covariates. Perceived morality significantly differed by condition, $F(2,126) = 26.90, p < .001$, partial $\eta^2 = .30$. As shown in Table 3-1, those in the good/choice condition rated their perceived morality significantly higher than either of the other conditions. Additionally, perceived choice also differed significantly by condition, $F(2,126) = 31.07, p < .001$, partial $\eta^2 = .33$, as shown in Table 3-2. Again, those in the good/choice condition rated their actions as significantly more moral than either those in the good/no choice condition or those in the bad/no choice condition. Because significant differences between conditions were found for both perceived morality and perceived choice, the manipulation was deemed successful.

Table 3-1. Manipulation Check—Perceived Morality

	Condition		
	Bad/No Choice	Good/ No Choice	Good/Choice
<i>M</i>	2.97 _a	3.73 _b	5.47 _c
<i>SE</i>	.25	.26	.25

$F(2,126) = 26.90, p < .001$, partial $\eta^2 = .30$

Note: Means with no subscript in common differ at $p < .05$ using Holm's sequential bonferroni post hoc comparisons.

Table 3-2. Manipulation Check—Perceived Choice

	Condition		
	Bad/No Choice	Good/ No Choice	Good/Choice
<i>M</i>	2.62a	3.95b	5.02c
<i>SE</i>	.22	.23	.22

$F(2,126) = 31.07, p < .001, \text{partial } \eta^2 = .33$

Note: Means with no subscript in common differ at $p < .05$ using Holm's sequential bonferroni post hoc comparisons.

Hypothesis Testing

RQ1 and H1 were related to the relationship between individual differences and moral choice. However, due to the low number of people electing to commit bad actions in the game, these were unable to be tested. For H2, H3, RQ2, and RQ3, analyses of covariance (ANCOVAs) were run using gameplay hours per week and whether participants had played NV before as covariates.

Enjoyment and Appreciation

H2 predicted that those given a choice while playing would experience higher levels of appreciation than would those not given a choice. An ANCOVA using appreciation as a dependent variable was unable to detect a significant difference among the conditions, $F(2, 126) = .22, p = .81$.

According to H3, participants not given a choice would experience higher levels of enjoyment than would those given a choice. An ANCOVA using condition as an independent variable and enjoyment as a dependent variable revealed that conditions varied in enjoyment at a level that approached statistical significance, $F(2, 126) = 2.95, p = .06, \text{partial } \eta^2 = .05$. However,

contrary to the hypothesis, participants in the good/choice condition ($M = 4.86$, $SE = .21$) enjoyed playing the game to a greater degree than did those in the good/no choice ($M = 4.32$, $SE = .22$) and bad/no choice conditions ($M = 4.16$, $SE = .21$). However, after using Holm's sequential bonferroni post hoc comparisons, the pairwise comparisons between conditions were not significant.

To further explore the relationship between conditions and level of positive entertainment appraisal, a mixed model repeated measures ANCOVA was run with type of appraisal (e.g., enjoyment or appreciation) as a within-subjects factor, using Wilks' criterion. This analysis did not reveal a significant main effect for condition on level of positive entertainment appraisal, $F(2,126) = 1.40$, $p = .25$. However, there was a significant main effect for appraisal type, Wilks' $\Lambda = .73$, $F(1, 126) = 46.74$, $p < .001$, partial $\eta^2 = .27$ on level of appraisal. Participants reported greater enjoyment ($M = 4.45$, $SE = .13$) than appreciation ($M = 3.37$, $SE = .11$). However, the main effect for appraisal type should be interpreted in light of the significant interaction effect found between appraisal type and condition, Wilks' $\Lambda = .95$, $F(2, 126) = 3.12$, $p < .05$, partial $\eta^2 = .05$. As shown in Figure 3-1, enjoyment was in general higher than appreciation for all conditions. However, because H2 predicted that those given a choice would experience higher appreciation than those in the non-choice conditions, H2 is not supported. Similarly, H3 posed that those not given a choice would experience greater levels of enjoyment than those allowed a choice; H3 is thus not supported.

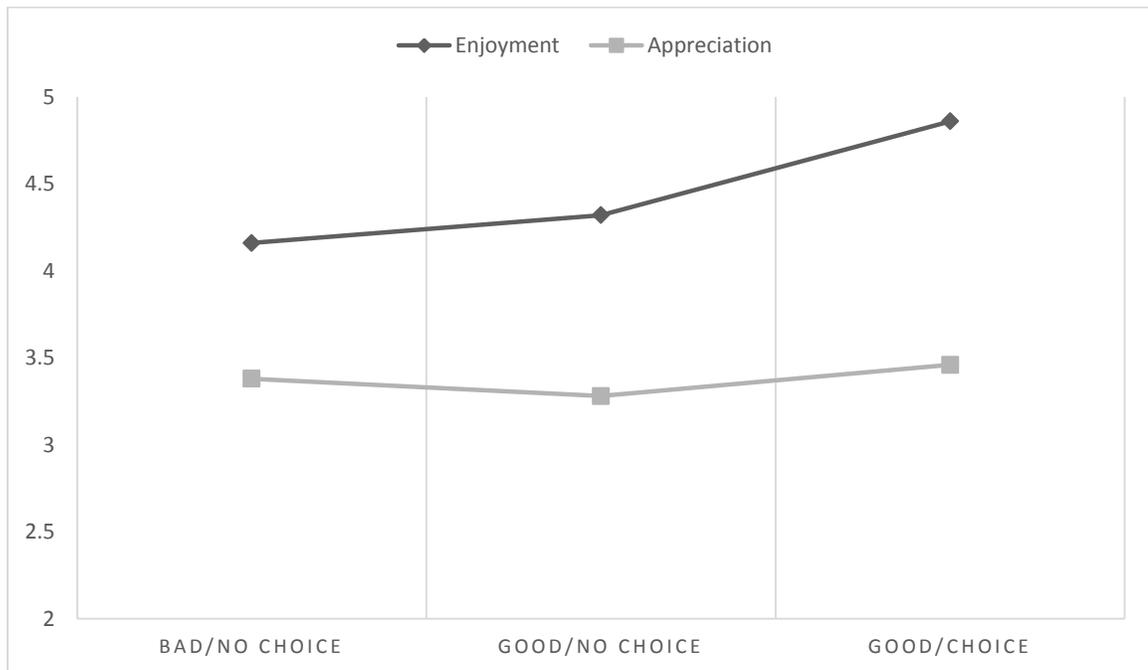


Figure 3-1. Comparing Enjoyment and Appreciation

Narrative Engagement

RQ2 and RQ3 inquired about the relationship between moral choices and narrative engagement. To answer these, a series of ANCOVAs were run utilizing condition as an independent variable and identification, parasocial interaction, and transportation as dependent variables.

The analysis revealed significant differences in identification based on condition. As shown in Table 4-1, participants in the bad/no choice condition identified with the main character ($M = 3.04, SE = .14$) significantly less than either those in the good/no choice condition ($M = 3.74, SE = .15$) or those in the good/choice condition ($M = 3.98, SE = .14$), $F(2,126) = 12.01, p < .001$, partial $\eta^2 = .16$.

Table 4-1. Effect of Condition on Identification

	Condition		
	Bad/No Choice	Good/ No Choice	Good/Choice
<i>M</i>	3.04 _a	3.74 _b	3.98 _b
<i>SE</i>	.14	.15	.14

$F(2,126) = 12.01, p < .001, \text{partial } \eta^2 = .16$

Note: Means with no subscript in common differ at $p < .05$ using Holm's sequential bonferroni post hoc comparisons.

There were no significant differences detected between conditions in parasocial interaction, $F(2, 126) = .424, p = .66$. Nor were there significant differences found between conditions in transportation, $F(2,126) = 1.85, p = .16$.

Further Analysis

As previously mentioned, those in the bad/no choice condition identified with the main character significantly less than those in the good conditions did. Given that one of the main components of identification is homophily—or non-physical similarity between player and character—the level of congruence between the players' moral identities and the main character's may have played a role in identification.

Additionally, the manipulation check revealed significant differences between the three conditions on both perceived morality and perceived choice. Those in the good/choice condition perceived their actions to be significantly more moral than either those in the good/no choice condition or those in the bad/no choice condition. The same was true of perceived choice—those in the good/choice condition perceived themselves to have more of a choice than did those in

either other condition. These results indicate that a player's level of perceived choice may play a major role in the gameplay experience. Therefore, with these findings in mind, the data were further explored.

Moral Identity and Identification

To explore how moral identity and manipulated morality interact to influence identification, a hierarchical regression was conducted with morality (dummy coded: 1 = good, 0 = bad) and moral identity (centered) entered in the first step and the interaction between the two in the second step. Overall, the model accounted for a significant portion of the variance, $F(3,127) = 9.69, p < .001, R^2 = .19$. As shown in Table 5-1, moral identity did not significantly predict identification, but manipulated morality did. Further, the interaction between moral identity and manipulated morality was significant.

Table 5-1. Predictors of Identification

	<i>B</i>	β	ΔR^2
Step 1			.15
Morality (Good vs. Bad)	.81***	.37***	
Moral Identity	-.08	-.07	
Step 2			.04
Morality X Moral Identity	.48*	.36*	
Model: $F(3,127) = 9.69, p < .001, R^2 = .19$			
<i>Note.</i> * $p < 0.5$, ** $p < .01$, *** $p < .001$			

The interaction was further probed utilizing simple slopes analyses. This analysis revealed that, when players committed morally bad actions, moral identity significantly predicted identification, $B = -.43$, $SE = .17$, $p < .05$. For these participants, the less salient moral identity was, the more they identified with the main character. However, when participants committed good actions, moral identity did not predict identification, $B = .05$, $SE = .11$, $p = .64$.

Affect

A number of ANCOVAs were run using condition as an independent variable and positive, negative, and focused affect as dependent variables. The analysis showed that the effect of condition on positive affect was significant, $F(2, 162) = 8.81$, $p < .001$, partial $\eta^2 = .11$. As shown in Table 5-1, participants in the bad/no choice condition reported significantly less positive affect than did those in either of the good conditions. Interestingly, those in the bad/no choice condition statistically differed from those who committed good actions only when participants were given a choice; those in the good/no choice condition were statistically similar to those in the bad/no choice condition.

Table 5-2. Effect of Condition on Positive Affect

	Condition		
	Bad/No Choice	Good/No Choice	Good/Choice
<i>M</i>	3.18 _a	3.64 _{ab}	4.20 _b
<i>SE</i>	.18	.19	.19

$F(2, 162) = 8.81$, $p < .001$, partial $\eta^2 = .11$

Note: Means with no subscript in common differ at $p < .05$ using Holm's sequential bonferroni post hoc comparisons.

The analysis also revealed significant differences between conditions on negative affect, $F(2, 126) = 16.66, p < .001, \text{partial } \eta^2 = .15$. As shown in Table 5-2, participants in the bad/no choice condition ($M = 3.51, SE = .18$) experienced significantly more negative affect than did those in either the good/no choice condition ($M = 2.34, SE = .19$) or the good/choice condition ($M = 2.60, SE = .19$). However, although those in the good/choice condition reported more negative affect than did those in the good/no choice, this difference was not significant. The analysis was unable to reveal significant difference between the conditions for focused affect, $F(2, 126) = 1.12, p = .31$.

Table 5-3. Effect of Condition on Negative Affect

	Condition		
	Bad/No Choice	Good/ No Choice	Good/Choice
M	3.51 _a	2.34 _b	2.60 _b
SE	.18	.19	.19

$F(2, 126) = 16.66, p < .001, \text{partial } \eta^2 = .15$

Note: Means with no subscript in common differ at $p < .05$ using Holm's sequential bonferroni post hoc comparisons.

Path Analysis

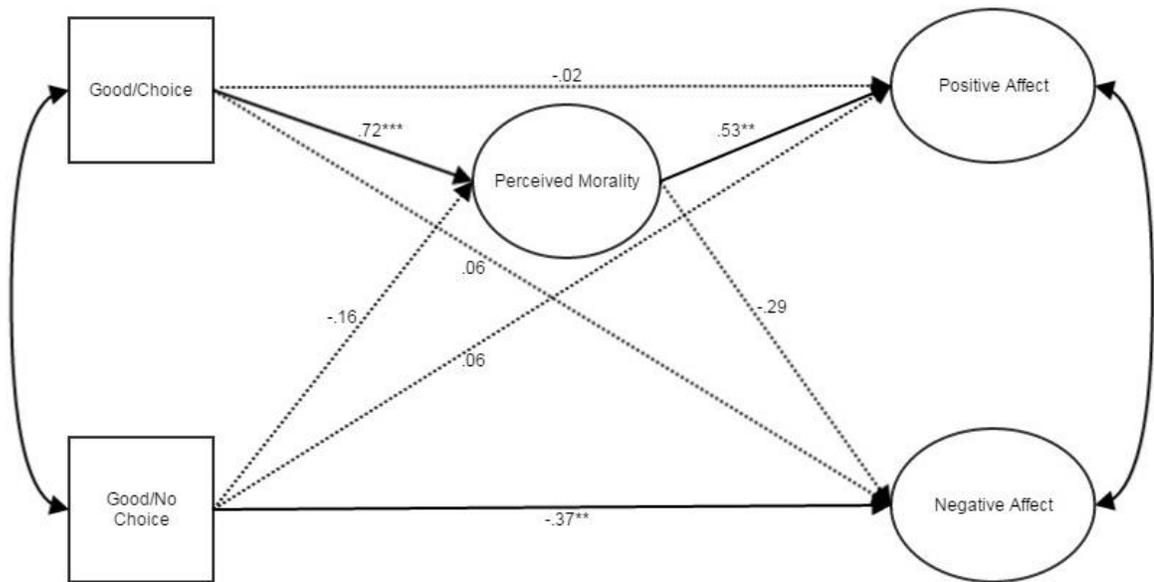
To further examine the role of choice and perceived morality (i.e., manipulation check—morality) in predicting participants' affect, a path model was constructed using single item predictors to correct for measurement errors. Reliability for perceived morality was assessed using the Spearman-Brown approach (Eisinga, Grotenhuis, & Pelzer, 2013). Condition was effect coded such that good/no choice and good/choice were present in the model and bad/no choice was the excluded category. Perceived morality was used as a mediator, and both positive and

negative affect were used as outcome variables. Additionally, hours played per week and prior NV experience were included as covariates. Given that path analysis—rather than theoretical model building--was the goal, the model was saturated. This allowed for testing of both direct and indirect effects for the independent variables.

The direct path from good/choice to positive affect was non-significant, $\beta = -.02, p = .94$. The direct path from good/choice to negative affect was not significant, $\beta = .06, p = .75$. The indirect path from good/choice to positive affect was significant ($\beta = .37, p < .01$), indicating full mediation. The indirect path from good/choice to negative affect approached significance, $\beta = -.20, p = .08$.

The direct path from good/no choice to positive affect was not significant, $\beta = .06, p = .56$. The direct path from good/no choice to negative affect was significant, $\beta = -.37, p < .01$. The indirect paths from good/no choice to positive ($\beta = -.08, p = .08$) and negative affect ($\beta = .05, p = .09$) approached significance.

Compared to the mean across all participants, those in the good/choice condition felt significantly more moral ($\beta = .71, p < .001$). Those in the good/no choice condition felt slightly less moral, but this relationship was not significant ($\beta = -.16, p = .12$). This can be seen in Figure 4-1.



Note. Covariates not pictured here. Model used single-item indicators to correct for measurement error. * $p < .05$, ** $p < .01$, *** $p < .001$

Figure 4-1. Path Analysis

Chapter 5

Discussion

The purpose of the present study was to explore the role of moral choice in processing and appraisal of narrative video games. To this end, a 2 x 2 factorial experiment was designed to assess how morality and choice interact to influence narrative engagement, enjoyment, and appreciation.

Prior to analysis, it became clear that few participants in the choice condition elected to commit the bad action. This seemed somewhat puzzling, as several popular modern video games allow players to commit immoral acts (e.g., *Grand Theft Auto V*, *Call of Duty: Modern Warfare 2*). An examination of the open-ended data, however, indicates that this lack of immoral choice may be due to the quest placing children in peril. Many participants specifically mentioned children when asked how they felt about the actions taken in the game. For example, one participant wrote, “I became upset that enslaving the children was even an option and it caused me to dislike the main character,” while another wrote “I wanted to help the child and doctor instead of killing the doctor and enslaving the child. If anything, I wanted to kill the Overseer.” These responses indicate that, to participants, even virtual children were worth protecting. It could be that this scenario represents a moral line that cannot be crossed, even in a video game. It may be that, had the quest involved enslaved adults rather than children, more participants may have chosen the immoral action.

Of all the engagement measures, significant differences between conditions were found only in identification. Specifically, identification differed based on morality. Those who committed good actions in-game identified more strongly with the main character than did those who committed bad actions, regardless of choice. This finding indicates that those who

committed immoral actions may have wanted to distance themselves from the main character, the Courier. Indeed, many participants in the bad condition specifically mentioned the actions that the Courier, and not themselves, committed, showing that they felt distinct from the character they controlled. However, for those who were not given a choice, it may be that they would have selected the good action even if they were allowed to choose. Thus, the character's morality matched their own, and they were able to more easily identify with him.

This was shown in the significant interaction between morality and moral identity. When players committed the good action, the main character's moral identity matched their own, and they identified with the Courier. For these participants, moral identity did not matter much, because they already agreed with the actions the Courier took. However, if they were in the bad condition, they were more likely to identify with the Courier if moral identity was not as strong for them—those placing lower importance on moral identity identified more with the bad main character. Again, identification was more likely if the player's moral identity appeared to be close to the actual morality of the character.

No significant results were found for transportation. This could be due to the interactive nature inherent to video games. By being permitted to control the character and actually discover the setting, players may have been more easily transported into the story world regardless of the content of the story; they would not need to imagine the setting if they were capable of exploring it on their own.

Neither were there significant results found for parasocial interaction. Parasocial interaction refers to a seemingly one-sided encounter between a user and a media persona. However, interactions with player-controlled characters within video games may be less one-sided than other mediated encounters. Although the player-controlled character does not directly interact with the player, the avatar does respond to the player's desires (e.g., doing what the player wants to do) and controls. It may be possible that, as a result, parasocial interaction was

relatively low—players did not necessarily feel as though they had encountered an acquaintance when meeting the Courier for the first time; rather, they felt as though they were synonymous with the Courier—assuming the Courier’s morality matched their own.

The importance of morality is further illustrated by the findings regarding negative affect. Participants forced to commit immoral actions were significantly higher in negative affect than those in either of the good conditions. Guilt may have been an important mechanism, and indeed many of the negative affect items were indicative of guilt. Participants felt that their actions—the actions of the Courier—were unjust, and therefore felt bad about them.

Previous literature has found that when narratives are complex, such as in all versions of the experimental game mod, appreciation rather than enjoyment should be heightened (Lewis et al., 2014). However, this was not the case in the present study, where enjoyment was significantly higher than appreciation for all conditions. It is possible that this finding is related to the medium used in the study. While Lewis and colleagues (2014) used written narratives, the present study used a video game. It is possible that the modality of a medium can influence whether or not users find a story meaningful. Perhaps, given the interactive nature of video games, individuals are more prone to enjoy the experience of playing—they actively participate in the story as opposed to merely observing. Therefore, the mechanism by which they participate (i.e., the video game itself) becomes more salient than it would be in other types of media, drawing the focus away from the story and toward the gameplay experience as a whole.

Interestingly, the manipulation check itself revealed that all three conditions differed significantly from one another both in perceived morality and perceived choice. Specifically, those in the good/choice condition thought their actions the most moral, followed by good/no choice and bad/choice. A similar pattern was also true of perceived choice. This finding indicates two things. First, there appears to be a difference in perceived morality between choosing to be good and being forced to be good. It could be that those who choose to be good feel that they

have had an active role in their morality; the very act of selecting the good action heightened morality. For those who were forced to be good, they may have agreed with the actions but may also have felt that they were simply following instructions. The results found for positive affect support this interpretation. Those in the good/choice condition were significantly happier than those in the bad/no choice condition. However, those in the good/no choice condition were similar in positive affect to both other conditions. Those committing good actions by choice felt much more positive than did those committing bad actions, indicating that being able to choose the morally just path may have made participants happier—choice seems to be an important factor.

Secondly, those who were not permitted to choose their course of action still felt that they had somewhat of a choice in their actions if they were forced to commit the good actions. That participants who were allowed to choose only chose good actions somewhat illuminates this finding; it appears that, for those who were forced to be moral, those actions aligned with the choice they would have made regardless, causing the lack of choice to become less salient to them.

As shown in the path model, those in the good/choice condition perceived their actions to be significantly more moral than did those in the other conditions. Perceived morality was positively associated with positive affect and negatively associated with negative affect. For participants in the good/choice condition, they felt that their actions were moral; therefore they also felt more positive emotions and less negative emotions. This was not the case for participants in the good/no choice condition; being in this condition did not predict perceived morality. This strengthens the position that choice is an important mechanism in perceptions of morality.

Interestingly, the direct path from good/no choice to negative affect was significant, while the indirect path was not (the indirect effect of good/choice on negative affect was also

non-significant). This finding indicates that, for these participants, there is another element besides perceived morality that impacts negative affect.

Implications

The present study has several implications for theory. First, the results of the study illustrate the importance of commonality between the character's moral code and the player's for identification. Players may only fully immerse themselves into a character if that character matches their own sense of morality. Otherwise, players seek to distance themselves from the character. The homophily dimension of identification discussed seems to broadly connect to this idea. Morality seems to be one non-physical similarity between player and character that is necessary to form a meaningful connection with the character. Future work on identification may seek to identify further components of homophily important to creating meaningful bonds between player and character.

The results of the manipulation check and the path model indicate that, when players choose to be good, they think their actions to be more moral than if they were not given that choice. In all experimental conditions, players were required to fight and kill someone (i.e., the benevolent doctor or the evil Overseer)—even in the good conditions. That players felt more moral when they chose to be good, regardless of the fact that they were still required to kill someone, indicates that choice may act as a mechanism for moral disengagement. While they were indeed required to fight someone, they justified it by remembering that they could have behaved more immorally than they did, making their chosen actions seem more moral in contrast. This is further supported by participants in the bad condition differing significantly from those in the good/choice condition, but not from those in the good/no choice condition. Not only did those who were good by choice feel that their actions were more moral, they also felt more positive

emotions. This is also shown by the path model; those who were good by choice perceived their actions to be more moral than those who did not have a choice—including those who were forced to be good—and also felt more positive affect and less negative affect.

The study also has interesting implications for enjoyment and appreciation. The results indicate that, in contrast to previous literature, enjoyment was higher than appreciation across conditions, regardless that the story—in all conditions—should have been relatively high in narrative complexity. This indicates that content of the story may not be the only thing capable of influencing how meaningful a user perceives it to be. Perhaps the medium also makes a difference. Importantly, the participants in the study ranged widely in gameplay experience; some reported playing video games often while others reported not playing at all. It is possible that, for non-gamers, video games may be seen as a novel way to pass time. However, for “hard-core” gamers, video games may be viewed as a mechanism for interactive storytelling, making the story—and not the medium—more important. As research on enjoyment and appreciation continues, medium may become a more important variable to consider.

Limitations and Directions for Future Research

The present study is not without its limitations. The first of these is the makeup of the sample. This study utilized a convenience sample comprised entirely of college students. Given the makeup of the sample, it is difficult to generalize the results to the general population. Future work should attempt to recruit participants outside the age-range used.

During experimental sessions, multiple participants completed the experiment at the same time. However, this is not normally the way individuals play single-player video games in real life. Even though each person was isolated to a cubicle, they still may have been aware of others in the room, which could have caused them not to play in the way they otherwise would. The

laboratory setting may also have interfered with the measurement of parasocial interaction. The scale used for parasocial interaction encompassed cognitive, affective, and behavioral components. However, when playing in a lab, surrounded by fellow participants, players may have felt less inclined to express behaviors indicative of parasocial interaction (e.g., speaking to the character). Future research should strive to create a more natural setting to more accurately measure players' behavior during the game.

Perhaps the greatest limitation to the present study was the lack of participants choosing to commit immoral actions. Because very few participants chose immoral actions, there was not enough variance between the choice conditions to address RQ1 and H1. It is possible that the moral decision presented in the game was too severe for participants. As previously mentioned, multiple participants specifically mentioned the importance of children in their open-ended responses. It is possible that this choice—helping a child or enslaving a child—represented a moral line that participants were unwilling to cross. However, this does not necessarily mean that game players would not commit less severe immoral actions. Future research should attempt to clearly define the moral boundary, utilizing games of different type and genre to isolate the point at which players will no longer commit immoral acts.

Conclusion

As the video game industry continues to grow, research into the mechanisms behind video game processing becomes increasingly relevant. Narrative-driven video games allow for players to play a role in the way the story unfolds. Many times players are given a choice as to which path the story may take, allowing them to feel as though they are in control. When those choices have a moral component, the actions committed by the main character—and, by extension, the player—appear to have all the more relevance.

In sum, this research was designed to explore the mechanisms of moral choice and the impacts of those moral decisions. Although this study was unable to explore the traits that influence moral choice, the findings suggest a distinction between being good by choice and being good by the game's design. Additionally, the results of the study point to the importance of both the player's moral identity as well as the morality of in-game actions in identifying with the main character. These results not only hold importance not only for our current understanding of moral decision-making but also suggest fruitful avenues for future work into virtual morality.

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Appendix

Questionnaire Part 1

What is your age?

What is your race/ethnicity (select as many as apply)?

- White/Caucasian
- Black/African-American
- Asian/Pacific Islander
- Native American/Indigenous
- Indian/Middle-Eastern
- Hispanic/Latino
- Other (please list)

What is your gender?

- Male
- Female
- Other

Have you ever played *Fallout: New Vegas* before?

- Yes
- No

Have you ever played any game in the *Fallout* franchise (e.g., *Fallout*, *Fallout 2*, *Fallout 3*, *Fallout: New Vegas*)

- Yes
- No

The following questions were asked in 7-point, Likert-type format

Moral Identity (Internalization)

Listed below are some characteristics that may describe a person: caring, compassionate, fair, friendly, generous, hardworking, helpful, honest, kind. The person with these characteristics could be you or it could be someone else. For a moment, visualize in your mind the kind of person who has these characteristics. Imagine how that person would think, feel, and act. When you have a clear image of what this person would be like, answer the following questions.

1. It would make me feel good to be a person who has these characteristics.
2. Being someone who has these characteristics is an important part of who I am.
3. I would be ashamed to be a person who has these characteristics.
4. Having these characteristics is not really important to me.
5. Having these characteristics is important to my sense of self.
6. I strongly desire to have these characteristics.

Personality Traits

1. My mood goes up and down.
2. I care about what other people think.
3. I am a talkative person.
4. I sometimes feel “just miserable” for no reason.
5. Being heavily in debt would worry me.
6. I am outgoing.
7. I am an irritable person.
8. I would take drugs that may have strange or dangerous effects.
9. I enjoy meeting new people.
10. My feelings are easily hurt.
11. I prefer to go my own way rather than act by the rules.
12. I can let myself go and enjoy myself at a lively party.
13. I sometimes feel “fed-up.”
14. Good manners and cleanliness are important to me.
15. I take the initiative in making new friends.
16. I would call myself a nervous person.
17. Marriage is old-fashioned and should be avoided.
18. I can easily add some life to a dull party.
19. I am a worrier.
20. I enjoy cooperating with others.
21. I keep in the background in social occasions.
22. It worries me if I know there are mistakes in my work.
23. I would consider myself tense or “high-strung.”
24. People spend too much time safeguarding their future with savings and insurances.
25. I like mixing with people.
26. I worry for too long after an embarrassing experience.
27. I try not to be rude to people.
28. I like plenty of bustle and excitement around me.
29. I suffer from “nerves.”
30. I would like other people to be afraid of me.
31. I feel lonely.
32. It is better to follow society’s rules than to go my own way.
33. Other people think of me as outgoing.
34. I sometimes feel guilty.
35. I can get a party going.
36. I need things explained to me only once.
37. I always have difficulty applying new concepts.
38. Compared to other people, I don’t think I am very creative.
39. People come to me if they are stuck for fresh ideas.
40. I continually strive to uncover information about topics that are new to me.
41. I try to learn something new every day.
42. I don’t like trying new things and would rather stick with what I know.
43. I have been touched emotionally by a great musical performance.
44. I think viewing art is a waste of time.

45. I enjoy diversity in the community.
46. I think it is rude when others speak in a language I can't understand.
47. I am happiest when conversations are practical rather than philosophical.
48. For me, there is nothing better than taking the time to think deeply about something.

Questionnaire Part 2

How did you feel about the actions you took while playing? [open-ended]
 Why did you make the choice that you made [open-ended, choice only]

The following questions were asked in 7-point, Likert-type format.

Identification

1. The Courier is a mirror image of me.
2. The Courier shares many physical characteristics with me.
3. The Courier was an accurate physical representation of me.
4. The Courier has the same attitude toward authority as I do.
5. The Courier has the same attitude about killing innocents as I do.
6. The Courier has the same attitude toward good and evil as I do.
7. I'd like to do the kinds of things the Courier does in real life.
8. I understood events in the game in a manner similar to how the Courier understood them.
9. I think I have a good understanding of the Courier.
10. I could feel the emotions the Courier portrayed.
11. I knew exactly what the Courier was going through.
12. I wanted the Courier to succeed in achieving his/her goals.
13. I felt that the Courier was interesting.
14. I disliked the Courier.
15. I liked the way the Courier responded to other characters.
16. The Courier is my favorite character I encountered in the game.

Parasocial Interaction

1. I carefully followed the Courier's behavior.
2. I hardly thought about why the Courier did certain things.
3. I kept wondering if I knew people similar to the Courier.
4. I became aware of aspects of the Courier that I really liked or disliked.
5. I kept asking myself how things would evolve around the Courier.
6. Occasionally, I wondered if the Courier was similar to me or not.
7. Sometimes I really loved the Courier for what he did.
8. If the Courier felt bad, I felt bad too, but if he felt good, I felt good too.
9. I did not have a strong emotional reaction to the Courier.
10. Whatever the Courier did, I kept still.
11. Occasionally, I said something to the Courier on impulse.
12. Sometimes I felt like speaking out to the Courier.

Transportation

1. I found my mind wandering while I was playing the game.
2. While I was playing the game, I found myself thinking about other things.
3. I had a hard time keeping my mind on the game.
4. During the game, my body was in the room, but my mind was inside the world created by the story.
5. The game created a new world, and then that world suddenly disappeared when the game ended.
6. At times during the game, the story world was closer to me than the real world.

Enjoyment

1. I felt good when I played the game.
2. I enjoyed playing the game.
3. I liked playing the game.
4. It made me happy to play this game.
5. I was disappointed when the game was over.

Appreciation

1. This game will stick with me for a long time.
2. I know I will never forget this game.
3. The game left me with a lasting impression.
4. I found this game to be very meaningful.
5. This game really made me think.
6. The game was thought provoking.

Video Game Usage:

Roughly how many hours a week do you:

1. Play video games on a console (e.g., WiiU, Xbox One, PlayStation 4)
2. Play video games on a personal computer (PC)
3. Play video games on a tablet or smartphone

While playing the game, I felt...

1. Happy
2. Upbeat
3. Cheerful
4. Sad
5. Depressed
6. Sorrowful
7. Guilty
8. Remorseful
9. Proud
10. Inspired
11. Strong
12. Engaged
13. Interested
14. Bored

Open Ended Questions

1. How did you feel about the actions you took while playing the game?
2. (For participants in the choice conditions only) In completing the quest, what choice did you make?
 - a. Why did you make this choice?