The Empathic Potential of Video Games

Bethany Cho[1] and Katie Bainbridge[#]

[1] Centennial High School, USA
[#] Advisor

ABSTRACT

Research suggests that video games can promote empathy, a vital skill for human interaction. The goal of the literature review was to consolidate and analyze game mechanics and storytelling techniques optimal for creating a game that promotes empathy as well as catalog commercial games that utilize these elements well. Additionally, practical applications for how video games that promote empathy can be used are explored.

Introduction

Within the past decade, there has been myriad research supporting the notion that video games can be used to foster empathy (Greitemeyer, Agthe, Turner., and Gschwendtner, 2012; Gutierrez, Kaatz, Chu, Ramirez, Samson-Samuel, and Carnes, 2014; Kral, Stodola, Birn, Mumford, Solis, Flook, Patsenko, Anderson, Steinkuehler, and Davidson, 2018). Video games, interactive in nature, place players in a position where they can influence their environment, experience situations they would otherwise not have access to, and quite literally see the world through the eyes of another person.

Empathy is defined as an emotional response that stems from another's emotional state or condition and is congruent with the other's emotional state or condition (Eisenberg, Miller, Shell, McNalley, Shea, 1991, p. 65). Empathy in turn increases the prosocial actions and urges of a person making it a desirable trait (Hoffman, 2000). Despite the reputation video games have gained of inciting violence, video games may be just as likely a tool to elicit empathic responses and prosocial behaviors from players. Thus, an environment in which a user is not working to believe the environment and instead can focus on their influence within it is optimal for prompting users to immerse themselves.

In several case studies, researchers such as Kral et al. (2018). and Gutierrez et al. (2014) have commissioned or created noncommercial video games with the sole purpose of activating empathic responses to demonstrate the platform's accepted efficacy. Kral et al. (2018) worked with a game, *Crystals of Kaydor*, created to investigate if biological reactions of activating empathy were present while playing such a game. Through MRIs taken of participants, it was found that networks in the brain associated with empathy were active after playing *Crystals*. Gutierrez et al. (2018) designed a game called *Fair Play* to examine the game's influence on players' implicit biases and empathy. High empathy in players was correlated with reduced implicit biases.

Several case studies have used perceived prosocial commercial video games such as *The Walking Dead* and *Detroit: Become Human* to promote moral sensitivity, and multiple analyses of the prosocial merits of games across multiple genres exist (Pallavicini, Pepe, Caragano, Mantovani, 2016). Confidence in the efficacy of training empathy with video games has led to the method being used in medical and professional settings such as at a psychiatry clerkship where the game *That Dragon, Cancer* was used to train medical students to empathize with their patients (Chen, Hanna, Manohar, Tobia, 2017). This matters because video games present a greater level of immersion than other media forms such as television or books allowing players to not only deeply experience a story, but also perform exercises of their own emotional abilities via decisions and actions players are forced to make in a game (Happ & Meltzer, 2014, p. 10). Though there is heavy support for the

utilization of video games as a tool in empathy training, there are certain game mechanics and functionalities that significantly boost the efficacy of empathy induction such as the presence of multiple outcomes, multi-player ability, and incentive systems. Games that effectively incorporate these mechanics to bolster empathy have many practical applications that can have benefits that extend beyond the gaming world.

Game Mechanics

Integral to creating an affective experience for the player is a feature innate to the video game – interactivity. Coined by Juul as "the art of failure," interactivity allows players to perceive situations through a virtual body and fully immerse themselves into the game as events unfold around them. Ultimately, interactivity conveys to players that their ingame decisions matter (Pallavicini et al., 2020). The level of interactivity in games is dictated by the implementation of game mechanics and when building games to foster empathy, often takes greater intentionality. Belman & Flanagan (2010) outline four design principles integral to creating games that foster empathy:

- Players are likely to empathize only when they make an intentional effort to do so as the game begins
- Games should give players specific recommendations about how their actions can address the issues represented in the games
- games should integrate both cognitive and emotional empathy if they want to influence a player's worldview
- Games should emphasize points of similarity between the player and people or groups with whom they are supposed to empathize.

To clarify, cognitive empathy is defined as when a person has first-hand knowledge of what another person feels while emotional empathy is when a person feels that they can feel what another is feeling. Smith (2006) describes these as "mental perspective taking" and "vicarious emotion sharing," respectively. While some of these principles often appear within games, there are few to none who incorporate all four, especially in the commercial realm of video games (Belman & Flanagan, 2010). Most notably, the commercial action-adventure genre as well as conversely, relaxation games, have been recognized as being particularly effective. As the name suggests, the genre is a mix between action and adventure genres which allows for the fast-paced and high stakes elements of the action game to be paired with the more story-based qualities of the adventure game. When successful, this makes for an exciting and highly marketable game for a larger demographic while also fostering moral sensitivities in players (Pallavicini et al., 2020). Relaxation games, on the other hand, discourage aggressive behavior which is directly correlated with high moral sensitivities (Happ & Melzer, 2014). In the commercial realm where the aim is not always to induce empathy or promote prosocial behavior, there are many games thought to be highly effective. A few of them will be discussed in later sections. This means that there are other elements through which interactivity, and by extension, empathy induction, can thrive.

Multiple Outcomes

The most apparent way to show players that their decisions matter is by creating consequences for the player. Consequences can be revealed immediately or suspended for later and should still be effective. In the case of more major outcomes, particularly in games with multiple endings, players are incentivized through achievements, extra content, and progress towards "full completion" of the game (where the player has uncovered and in some cases, defeated, all game possibilities and secrets). In turn, players are exposed to varying perspectives and consequences to choices that they would not have initially made, allowing them to become fully invested in differing character and narrative facets (Pallavacini et al., 2020). Multiple outcomes is also a common way

of creating a sense of interactivity and allows a player to fully accept the "art of failure" with the full knowledge that they have the opportunity to replay and prevent undesirable outcomes. This gives the player a more well-rounded view of the effects of their actions as well as the adverse or preferable effects of alternate decisions. In games like *Undertale* in which there are choices between drastic gameplay routes such as the pacifist route and the genocide route, with the ability to reexperience the game and accumulate achievements, players are inevitably exposed to the extreme consequences of their in-game actions. While the mere examination of various outcomes and their consequences exercises the player's ability to process the emotions and circumstances of others, ultimately the effects and benefits of exposing a player to the consequences of their actions is heightened when the player is made to feel guilt. Through experiencing guilt, the player is left to reexamine their past in-game actions and analyze how and why they had that effect.

Multiplayer

Multiplayer games can induce empathy based on the principle that empathy "comes through the need of understanding other's abilities" (Munoz, Gonçalves, Vieira, Cró, 2016). Integral to the result of greater empathy through multiplayer games is collaborative gameplay. In Munoz et al. (2016)'s study, players all had unique roles and abilities given by the game, thus pushing players to exercise their own understanding of their peers. The game's utilization of multiplayer functions reach far beyond other relaxing games such as in the *Animal Crossing* franchise or *Stardew Valley* (not to suggest that either of these games are ineffective or counterproductive to empathic functions). Additionally, the game had no competitive elements, setting itself apart from popular commercial multiplayer games in the market such as *Fortnite*, *Valorant*, or *Splatoon* where although the game objective is to work as a team and embrace each others' differences via weapon and gear choices, that same collaborative element is also a competitive one; players work as a team to defeat other teams which indeed fosters a player's empathy for their own teammates (which can be picked at random or organized by players), it also creates a bias against others.

Incentive Systems

In the vein of relaxing games, in aforementioned games such as *Animal Crossing* and *Stardew Valley*, there are implicit reward systems that encourage prosocial behaviors like helping neighbors and gifting presents to friends. While this is also an element present in action-adventure games, adventure games, and the like, with more relaxing games, reputation systems begin to take the forefront with socialization shaping the gameplay. However, the question of the effectiveness of such a system in empathy induction rises. Would players be committing prosocial actions because they are growing in their moral sensitivities, or simply because there is incentive? In *Animal Crossing* in particular, there is no tangible reward for being prosocial; the only compensation for prosocial behavior is a deeper relationship with NPCs as there are no achievements (on certain platforms) and no significant unlockables for the most part.

Case Studies

Within the video game industry, there are a variety of commercial games that have been praised in their abilities to elicit emotional responses and empathic sentiments. This section is to explain and dissect what makes these games successful based on the mechanics discussed previously. I have not played these games fully on my own, and have created these analyses based on other papers as well as by watching playthroughs of the games to gain an idea of how players are making decisions as well as how they are reacting to the games themselves. Some of these games are being explained with the purpose of creating background knowledge for applications of empathy inducing video games; an * will be used to denote these games.

The Walking Dead

The Walking Dead by Telltale Games is an action-adventure, point-and-click game based on the comics of the same name. Players play as character Lee Everett, a convict on the way to prison who is quickly forced to fend for himself from the Walkers when one crashes into the police car he's in. Lee soon discovers a young girl fending for herself, alone, named Clementine. The game follows Lee as he protects Clementine and himself from the apocalypse and introduces the player to a wide range of ensemble characters. As the story progresses through various seasons and spin-offs, there are variances in who leads the player experience of the game which also allows players to explore the first-hand perspectives of contrasting personality and character types. Within the genre, however, *The Walking Dead* is a bit of an outlier in that the player is under the constraints of a normal person. Additionally, it values story and character development over action with combat sequences being largely dictated by programmed instructions. The creators describe *The Walking Dead* as a "reaction game" where, as the name suggests, players react to the game's presented situations, so despite stressful situations that require player action such as pressing a button repeatedly to attack when prompted or choosing between people to save, the players don't have to focus on executing complex combat or action sequences, allowing them to instead focus on the story and the effects of their actions. As far as Belman & Flanagan's principles of gaming, while the game does not explicitly prompt players to empathize with characters, it does warn them that their actions will affect the game's story. That being said, unlike how Belman & Flanagan detailed, the game does little to elicit a "best" response from the player which, in my opinion, works nicely in creating a more immersive experience while also providing learning opportunities by showing how actions of the player affect others without feeling forced to act uncharacteristically to themselves. This is also an element that can allow those who default to anti-social decisions to reflect on whether those choices are truly the best decisions. The game does well at involving the player in situations of both emotional and cognitive empathy. Players, making decisions for and as the main character, are forced to think as the character as they make choices they deem to be best. However, since players also experience the situations and consequences of such choices through the playing character, they also are brought through the emotional experiences of the character. Lastly, there are emphasized points of similarities between the player and other characters. This remains present for not just positively portrayed characters, but even for characters that directly antagonize the player and seem undeserving of any kind of sympathy, much less empathy. One of the earliest examples of an emphasized point of similarity is with antagonist Larry who at several points displays himself as a person willing to endanger positively portrayed characters for the safety of himself and his daughter and even intentionally endangers the player. The player is nearly killed due to the actions of Larry for seemingly no reason, yet the player is given insight into Larry's actions which are motivated by a fear for his daughter's safety, creating a connection with the player who has at that point become a father-figure to Clementine.

The scale of decisions varies as well. While the majority of choices regard conversing with non-playable characters, within just the first chapter of the game, players are forced to choose between lives to save, twice (see Figure 1). Though all choices affect gameplay in some way or other, choices like the latter impact the game at a much larger scale and go on to resonate in future installments of the game as well, provided that players complete all installments. Some decisions are time sensitive, placing pressure on the player to pick a choice in the matter of seconds in order to simulate the intensity of certain situations, a dramatic contrast from Happ & Melzer's assertion that relaxing games promote prosocial behaviors. A reason for this may be because players are often given the choice to perform prosocial actions as well as the fact that many decisions in *The Walking Dead* lack clear-cut moral "goodness".

Figure 1. A screenshot from The Walking Dead. Players are asked to quickly choose between saving characters Shawn and Duck.

Beyond the basic format of the game, there are several other elements that make *The Walking Dead* successful in empathy elicitation. The creators have expressed intentionality in creating characters who were easy to empathize with, particularly by developing rich histories for characters and limiting the abilities of players. At the Game Developers Conference in 2013, creative director Jake Rodkin and director/writer Sean Vanaman explained that they often considered how different facets of characters would have affected their journeys as well as their perspectives and worked to make a main character with limitations so as to allow players to grow to understand the importance and niches of the other members of the character ensemble. They also divulged that the choice to make the main character less of a powerful figure was meant to immerse players deeper into the tension of various circumstances by raising the stakes of decisions (Concepcion, 2013). The game shows players how their decisions compare to those of other players which allows them to consider how others think; when able to see these choices, players, especially when in the minority of a decision, may consider why other players chose what they did as well as if they would have done the same thing given another chance. In the vein of second chances, in earlier iterations of the game, players were able to replay the game from decision points and switch their choices – but only after experiencing the consequences of their initial choice by finishing the chapter. The feature was removed in 2016, eliciting complaints from players. Regardless, players are still able to fully replay episodes and use multiple save files meaning that their ability to experience different situations is not absent.
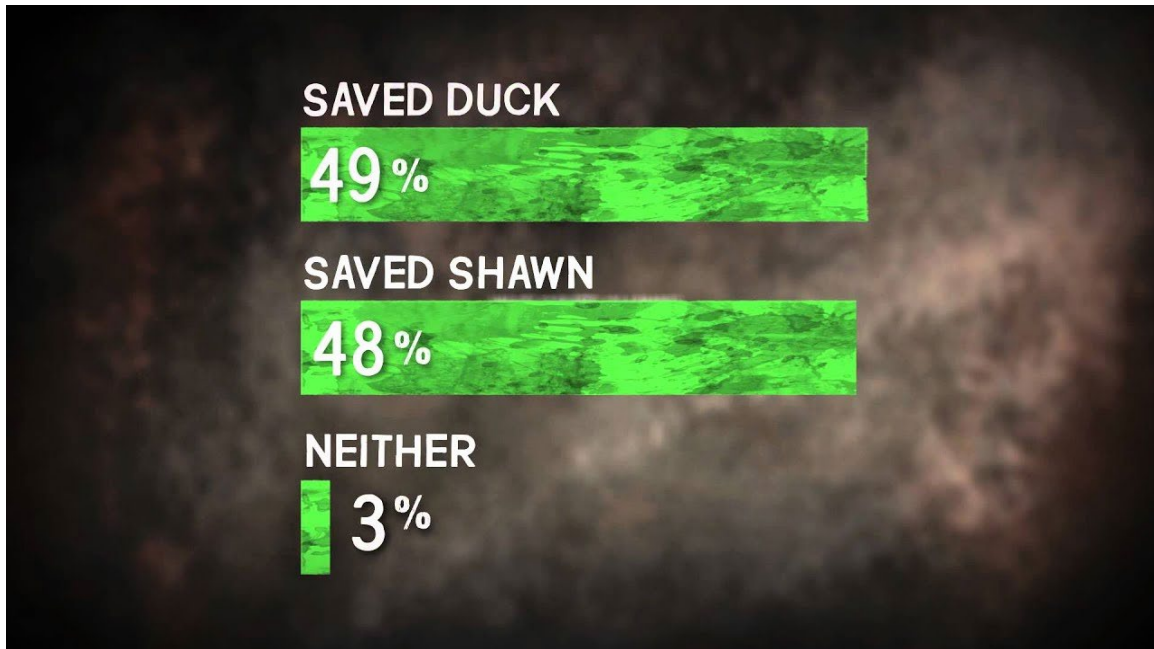
Figure 2. An example of a statistic shown to players at the end of gameplay segments which compares their decisions to those of others (Telltale Games, 2012).

The Walking Dead's presentation significantly adds to the player's ability to empathize with characters. Most notably, characters are highly emotive, showing clear reactions such as satisfaction or petrification at various situations, clearly communicating to players how characters feel in certain situations. This is especially effective when conveying how the player's actions are affecting others. Important to inducing empathy is getting the player to feel guilt for actions that negatively affect others; the best way to do this is simply by allowing the player to see the effects first hand as *The Walking Dead* does. Additionally, the game has highly realistic vocal performances which reduces the possibility of a player misunderstanding the meanings of lines of dialogue. There is an obvious effort at emulating realistic motions and behaviors by characters which allows the player to focus less on suspending their disbelief and more on immersing themselves in the story.

Figure 3. An example of a choice players are forced to make in The Walking Dead.

That Dragon, Cancer

That Dragon, Cancer is an indie adventure game in which players are taken through the story of the Green family as they grapple with the cancer diagnosis of their son, Joel Green, via a series of vignettes. The game is fairly peaceful with its tranquil graphics and soundtrack. Though *That Dragon, Cancer* is a commercial game, it was supported with crowdsourcing, and the game was developed and written by none other than the Green parents themselves. While the game does not explicitly request players empathize with the game in accordance with Belman & Flanagan, because of the fact that the game was crowdsourced and supporters were aware of the Green family's situation as well as the inspiration for the game, and the game description makes it clear to buyers that it is about the creator's own experiences. Players are prompted to do certain actions, all of which are prosocial, based on feedback from the game's main character, Joel. The game largely stimulates emotional and cognitive empathy; though the player doesn't play as one person in particular, since the game is written by the Green parents and is about their own experience, situations are curated to convey what the parents felt. Oftentimes, it does this by having the player witness interpretations of significant moments of the Green cancer journey such as when the family first learned that Joel's condition was fatal.

Supporting Muñoz's principle of relaxation games, this game, despite the purpose not being to relax, is a peaceful game strong in empathy elicitation. The game is free of any kind of mechanism that affects the course of the story, allowing the player to spend all focus taking in the story rather than running it. This, of course, has its downsides as well. With lack of player influence, gamers may be inclined to be less understanding of the story. Ryan Green, game creator, said that when creating *That Dragon, Cancer*, they hoped that immersion would be easier by keeping characters faceless and allowing players to imagine themselves and their loved ones in their places (See Figure 4). Because of lack of involvement, the game does little to exercise moral sensitivity in player decisions; however, *That Dragon, Cancer*, is successful in conveying its story to an empathic audience what the creators strive to tell, not because of, but in part due to meta-context.

Figure 4. A still from the game That Dragon Cancer. Characters are faceless, encouraging players to project themselves and their loved ones into the scenario (Green, 2017).

Applications

The tenets of creating empathy inducing games as outlined by Belman & Flanagan of Tiltfactor have been piloted in courses at several prestigious, accredited institutions within the Computer Science and/or Media programs (or their equivalents). These schools were listed as Carnegie Mellon University, the Georgia Institute of Technology, the Rochester Institute of Technology, and the University of Southern California. This is the most basic application of empathy-inducing games possible, but the opportunities span across other industries as well.

Prejudice Reduction Programs

Empathy tends to be neglected in prejudice reduction programs resulting in the failure of such programs (Biegler, 1999). A possibility of the program failure is the fact these programs don't address the reasons why such stereotypes and prejudices are/were put in place in the first place. With no actual debunking of these ideas, participants make little progress (Belman & Flanagan, 2010). Empathy has the potential to give motivation to abandon such stereotypes. Through empathy induction, participants come to believe that they have fewer differences between themselves and their targets of prejudice, leading to rejection of stereotypes. (Stephen and Finlay, 1999). In one study, a noncommercial game called *Fair Play* was created to combat implicit race bias in medical fields (Gutirrez et al., 2014). Players played as Black graduate student Jamal Davis attending a predominantly White university. As players completed quests to obtain a science degree as Jamal, they would experience racial biases. Participants who demonstrated higher levels of empathy and reduced implicit bias were a part of the video game pool over other participants who were given a text-based exercise suggesting the video game to be more effective in prejudice reductions when empathy induction is successful. While players did indeed show the least implicit bias, it was only when taking the perspective of Jamal. Though players cannot be forced to take any certain perspective, through usage of Belman & Flanagan's first principle, this issue can be easily combated by encouraging players to take the perspectives of characters. It also suggests that perspective taking, intentional or otherwise, is effective in inducing empathy. This study only examined the possibilities of gameplay to combat racial biases, but games can be used for other prejudice reduction programs – namely for those that focus on disability such as the Vision Simulator by Davis Vision. Though not a traditional game, the Vision Simulator was made with game development techniques such as those used to create virtual reality games. Through emulating limitations created by various disabilities in game, players can gain a more realistic idea of what life is like for their disabled counterparts.

Vocational Training

Already, video games are being used for vocational training through digitized teambuilding and war games. In fields such as law, a game called *Objection! Your Honor* is used to teach law students how and when to object during legal trials as well as how to argue them. The former is effective in empathy induction because of the multiplayer element outlined prior, but the latter law game is not as it focuses on teaching concepts rather than experiences. In addition to the aforementioned *Fair Play*, both of these cases require specialized games specifically for targeting the desired skill, but there are strong cases of successful vocational training that use commercial games that were available to the public and were not created with the intention of accommodating a certain need. In Chen et al. (2017), the authors were working with third-year medical students participating in a psychiatry clerkship. They were given a modified version of the Jefferson Scales of Physician Empathy before and after playing commercial, indie game *That Dragon, Cancer*. The students reported feeling greater empathy for patients after completing the game and expressed that they felt its necessity in medical schooling. Altogether,

games have a place in training environments; they're effective in creating healthy work dynamics as players are able to learn more about each other, and they're effective in equipping players with soft skills necessary for their jobs such as objectivity and empathy. Such skills are especially necessary in environments with high-stakes situations such as in police departments or hospitals where whatever the user does can deeply affect another in a positive or negative way.

Emotional Literacy in Children

There are a plethora of disabilities and disorders that cause an impairment in emotional processing. Though many of these conditions are incurable, intervention at a young age can allow emotionally-impaired neurodivergent people gain better understanding of certain nuances and cues that they would not otherwise be aware of in a closed environment that can flesh out the consequences of actions without causing anyone in real life harm. In learning emotional literacy, neurodivergent children can become better equipped to learn how to mask their own symptoms to avoid prejudice (though, maybe others should play a game about neurodivergency!) and recognize emotions in others. Efficacy in promoting empathy in children was put to the test by Saleme, Dietrich, Pang, and Parkinson (2020). The sample population did not knowingly include neurodivergent children of any kind, and 85.2% of the sample population consisted of boys with 71.7% of the population attending boys-only school. Children took a survey before and after playing an AR game called *REMI*. In *REMI*, players create a pet robot dog named REMI for themselves. Players have to make decisions for REMI in accordance with a comic book that poses moral questions for REMI to choose between. Results showed an increase in empathy afterwards. Because the majority of this sample was likely neurotypical, this kind of technology can be used on the general public. There are a multitude of other conditions that limit emotional literacy that could benefit from training like this, but the reality is a great deal of neurotypical people could also benefit from experiencing curated empathy-inducing experiences.

Conclusion

Video games may get a bad reputation for being a waste of time, or worse- a means of inciting violence, but they have tremendous potential for good as well. Through careful design and thoughtful intention, they can be utilized to promote empathy using a variety of game mechanics already common in mainstream commercial games such as multiplayer modes, incentive systems, and increased interactivity. The intentionality around creating empathy in games is often something left to writers, but by incorporating such mechanisms as well as following principles such as those outlined by Belman & Flanagan (2010), the focus in mindset on promoting empathy can be spread to everyone involved in a game's development. With the power to influence so much of a person's thought process, sentiments, and understanding of the world around them, games can and should be approached with intentionality throughout the creative and technical process. Just like how Belman & Flanagan urge developers to explicitly encourage players to take perspectives, game developers too must take on that same kind of intentional approach when creating a game's mechanics and story.

Acknowledgments

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