“I Don’t Want To Shoot The Android”: Players Translate Real-Life Moral Intuitions to In-Game Decisions in *Detroit: Become Human*

Karina Arrambide
mkarramb@uwaterloo.ca
Department of Systems Design Engineering
University of Waterloo
Waterloo, ON, Canada

John Yoon
j42yoon@uwaterloo.ca
Department of English
University of Waterloo
Waterloo, ON, Canada

Cayley MacArthur
cayley.macarthur@uwaterloo.ca
Stratford School of Interaction Design and Business
University of Waterloo
Waterloo, ON, Canada

Katja Rogers
katja.rogers@acm.org
Stratford School of Interaction Design and Business
University of Waterloo
Waterloo, ON, Canada

Alessandra Luz
alessandra.luzlam@uwaterloo.ca
Cheriton School of Computer Science
University of Waterloo
Waterloo, ON, Canada

Lennart E. Nacke
lennart.nacke@acm.org
Stratford School of Interaction Design and Business
University of Waterloo
Waterloo, ON, Canada

Figure 1: In the game *Detroit: Become Human*, the players find themselves in moral dilemmas, having to make moral decisions that impact all androids and—in this example screenshot—whether to attack the police, stand ground with other androids, or to run away.

ABSTRACT

In interactive story games, players make decisions that advance and modify the unfolding story. In many cases, these decisions have a moral component. Examining decision-making in these games illuminates whether players mobilize their real-life morality to make in-game decisions and what impact this has in both the game world and real life. Using mixed-methods consisting of semi-structured interviews and the Moral Foundations Questionnaire (MFQ30), we collected data from 19 participants who played the game *Detroit: Become Human*. We analyzed how participants applied their real-life morals toward in-game decisions using thematic analysis and statistical analysis of the MFQ30 results. Qualitative findings indicate that participants mobilize their moral intuitions to make in-game decisions and how much participants cared about their game characters influenced their choices. We contribute a better understanding of how players react to moral dilemmas in interactive story games for game designers to help them improve player experience.

CHI ’22, April 29-May 5, 2022, New Orleans, LA, USA

ACM ISBN 978-1-4503-9157-3/22/04.
https://doi.org/10.1145/3491102.3502019

CCS CONCEPTS

• **Human-centered computing → Human computer interaction (HCI)**; **HCI design and evaluation methods**; *User studies.*

KEYWORDS

interactive narrative, morality, decision-making, choice, interactive story, games, thematic analysis, moral foundations theory, moral foundations questionnaire

ACM Reference Format:
Karina Arrambide, John Yoon, Cayley MacArthur, Katja Rogers, Alessandra Luz, and Lennart E. Nacke. 2022. "I Don't Want To Shoot The Android": Players Translate Real-Life Moral Intuitions to In-Game Decisions in *Detroit: Become Human*. In *CHI Conference on Human Factors in Computing Systems (CHI '22), April 29-May 5, 2022, New Orleans, LA, USA.* ACM, New York, NY, USA, 15 pages. https://doi.org/10.1145/3491102.3502019

1 INTRODUCTION

In recent years, morality decision-making has been implemented in cinematic choice-based adventure games (CCAG) as a core mechanism to allow players to advance through diverse multilinear paths. Although the integration of moral dilemmas has been researched in other types of media [50], games provide an opportunity for players to become the moral actor [47]. Moral dilemmas can be defined as "a moment of decision making with at least two moral options in conflict as either option A or B but not both can be chosen" [31]. In these games, players are allowed to partake in moral decision-making, but we currently do not know whether they translate their real life morality into in-game decisions. Moral values are an important aspect of human development and behaviour [26] and games provide an environment where players can exercise moral decision-making in a safe—but simulated—space. Understanding why players make decisions and their reasoning behind those decisions is important because this can provide valuable information for game designers to improve player experience.

Previous work has looked into how players translate real life morality to in-game decisions [5, 25, 29, 47]. However, these studies have not examined the motivations and reasoning behind players' decision-making processes and have only focused on quantitative analysis. The lack of knowledge on how players perceive morality and make moral judgments poses a challenge to the design of games with the intention of eliciting specific emotions or experiences. Hearing from players themselves is paramount to understanding their expectations of moral dilemmas in CCAGs. While related work has touched on morality in games, the research has largely focused on simple good vs. evil dichotomies [39] or the use of violence in games [21]. This paper fills the gaps in current discourse by examining player choice and motivations in more complex and multilinear CCAG environments.

Thus—to better understand how players make moral decisions in games and if they translate their real life morality to the game world—we investigated the motivations and perspectives of how players experience morality in games through both qualitative and quantitative means. More specifically, we focused on their reasoning behind moral decision-making and if they associated their choices to distinct real life moral values. Their reasoning can also help explain aspects in the game that affect and motivate their moral choices (e.g., growing attached to a game character). The game *Detroit: Become Human (2018) [38]* developed by *Quantic Dream* was chosen as a stimulus because it provides an excellent example of CCAGs that allows players to modify the story based on their decisions. Moreover, the game continuously presents moral scenarios that affect survival and relationships between game characters.

To understand how player morality is translated from real life to in-game decisions, we conducted a within-participants, interview-based user study in which participants ($N = 19$) were asked to complete two sets of the *Moral Foundations Questionnaire* (MFQ30). We anticipated that this would help us to identify the moral foundations with the highest salience. Furthermore, we interviewed participants about their experience with the game in general, their experience with a specific chapter in the game, and conducted a thematic analysis of the collected data. Through the thematic analysis, we explore factors that players associate with morality-driven choices and how these factors affect their experience.

Our findings suggest that players translate real life morality to in-game decisions, and that other factors (e.g., connection with characters) also affect their moral choices. We also found that moral decisions might be affected by external factors, such as real life social issues (e.g., COVID-19 pandemic), and that relevance of moral foundations is subject to individual perceptions of morality. To our knowledge, this is the first qualitative and quantitative study that specifically examines a CCAG, where the core mechanic involves decision-making to advance the narrative. Our work expands existing knowledge about morality in games, and provides implications on the integration of moral dilemmas in games. We offer insights into players' perception of morality that can be beneficial to game developers and designers to improve player experience.

Our findings can be used as the basis to develop games that provide emotionally impactful choices which challenge and engage players on a whole new level. Moreover, this research can be beneficial to the CHI community because it provides an investigation into the simulated moral dilemma aspect and how users react to these dilemmas. Understanding the impact of these dilemmas not only in games but also in other platforms or systems where decision-making mechanics are implemented could help inform designers and developers to better account for external moral values that users or players may bring into their systems.

2 BACKGROUND WORK

Interactive narrative games, specifically CCAGs [35], such as *Detroit: Become Human*, have seen an increase in popularity. The inclusion of moral judgments in entertainment is not something new, as other types of media such as television, have previously included situations where moral judgments are present. The difference between these types of media and video games is that in the former the viewer is only a spectator whereas in a video game, the player becomes an active and moral actor [47, 50]. With the interactivity afforded by games, there has been research focusing on the relationship between morality and the choices offered to the player. The role of player choice becomes important in the discussion of morality in games because moral dilemmas in games can be defined as "a moment of decision making with at least two moral options in conflict as either option A or B but not both can be chosen" [31].

2.1 Morality and Decision-Making in Games

Morality can be described as a set of rules that govern a person's behaviour and indicate how decisions are made when a moral dilemma is presented [25]. In cases of player-based moral dilemmas rather than character-based ones, the player's decisions may not be morally relevant if the game leads to similar results regardless of player choice or if the player is motivated by gameplay reasons rather than reflecting on the consequences of their choices [49].

Sicart discusses ethical gameplay as the "ludic experience in which regulation, mediation, or goals require from the player moral reflection beyond the calculation of statistics and possibilities". In other words, ethical gameplay challenges players to reflect on their choices from a moral perspective [40]. Understanding how real life morality and values impact in-game decisions is important.

Literature about approaches to morality has been discussed in the works by Haidt and Joseph [19]. They argue that players' decisions are based on a "gut" reaction rather than a cognitive process that guides their decisions [25].

In the work by Joeckel et al. [25], they study how aligned a person's own moral values are to their in-game decisions. They found that when a moral module is not salient, players would no longer see right or wrong as a moral choice, but rather as a choice that needs to be made to advance the game's narrative. Players would uphold their morality when they are presented with a morality-violating scenario, and they would make a random decision when their morality was not compromised. This decision-making in video games is either moral or amoral (i.e., decisions are made with the gut or simply to advance the narrative).

Tamborini et al. [44] suggest that while both chronic and temporary moral intuitions can affect decision-making, accessibility to both prompts players to uphold their moral sensibilities rather than violate them. Krcmar and Cingel [29] found that players used about equal parts of strategic and moral reasoning for their decision-making process, with more experienced players using more moral reasoning than strategy.

Krcmar and Cingel claim that *the magic circle* [24] (i.e., games represent a space separate from real life and the rules of the real world do not apply to the virtual world, thus players' in-game decisions will not have real life consequences) is porous because players bring their sense of morality inside the circle.

Just as players bring their morality into games, Grizzard et al. [17] suggest violating morality virtually in games can cause the player to become more sensitive to the relevant moral intuitions. Even in the case of adolescents whose moral foundations are not yet fully stabilized, moral violations were less likely when faced with salient moral foundations [26].

Dechering and Bakkes [13] provide an analysis of two interactive narrative games as case studies (*The Walking Dead [46]* and *Life is Strange [14]*). They argue that ethical agency must be present in the game to allow players to engage with the morality of the narrative. Based on *self-determination theory* (SDT), moral engagement is dependent on players' control and knowledge of the game state, their relationship to the game characters, and the autonomy to act based on their own morality. Moreover, to increase moral engagement, the game should provide ethical agency, meaning that players must be confident that their actions are meaningful.

2.2 Moral Foundations Theory

Haidt and Joseph [19] identified five sets or moral evolutionary intuitions. These foundations are present since birth and are later shaped by socialization experiences [18]. The *Moral Foundations Theory* (MFT) was developed based on a large-scale study where five moral foundations were described. These foundations refer to harm/care (e.g., emotional or physical harm), fairness/reciprocity (e.g., considerations of justice, fair treatment, honesty and cheating), ingroup/loyalty (e.g., conflicts of interests between groups, group membership, betrayal), authority/respect (e.g., violation of authority, hierarchies, obedience), and purity/sanctity (e.g., chastity, control of desires). MFT is intuition-based and serves to understand innate morality, which arguably is the type of intuition used in games [20, 25]. The five modules are not independent of each other. MFT has been used as the theoretical foundation to understand players' morality and reactions to different types of media [5].

2.3 Representation of Morality in Games

The inclusion of moral dilemmas in games allows players to interact with the narrative and with other characters in the game. When morality is implemented as an in-game mechanic to advance the narrative and affect characters' interactions, these scenarios follow a black or white dichotomy. Sicart [39] argued when games simplify morality into rudimentary good/bad binaries, they do not empower players as moral agents because their moral choices become merely gameplay ones.

Previous research investigated how players perceive characters in a game and whether they consider them to be social entities rather than objects [21]. This argument would affect moral decision-making and choices made by players. In addition, previous work has investigated how visual attributes of antagonists can influence judgments of character morality [37]. Characters that were perceived as most immoral featured, for example, skin problems, older age, salient clothing, face coverings, tattoos, and weapons representing examples for villainous stereotypes in games.

Boyan et al. [5] analyzed the game *Mass Effect [3]* and the effect morality had on players to follow a heroic or anti-heroic path (i.e., following a Paragon or Renegade path). They used the MFQ to assess moral salience of the foundations along with a questionnaire where participants indicated the moral path they would follow in the game. Results suggest that players follow their real life morality in the game even though they have the opportunity to violate their moral values.

2.4 Moral Disengagement

The concept of *Moral Disengagement* is coined by Hartmann and Vorderer [21]. Mediated objects, such as video game characters, can be perceived as social beings. Thus, there is morality attached to interactions with these social entities. Automatic processes allow players to temporarily ignore that these characters do not exist in real life and forget that the experience is mediated [21]. Hartmann and Vorderer [21] discuss the assumption that virtual violence can only be enjoyed by players if there is no cost or there are minimal consequences to their actions, "that is, if it does not violate inner moral standards and cause aversion or dissonance" [1, 21]. Furthermore, moral disengagement plays a role in the enjoyment

of violence in games because virtual violence is more pleasurable when it appears to be justified [20]. Klimmt et al. [28] found that violent games facilitate their players' moral disengagement in various ways because violence can reduce the enjoyment of games. Players can have competing reasons for either moral engagement or disengagement. The motivation for eudaimonic play or the desire to explore a game may be at odds with emotional engagement or empathetic connections with the player-controlled character and non-playable characters (NPC) [23]. On the other hand, Smethurst and Craps [41] argue that video games give players the feeling of moral responsibility for their in-game choices. In their study of *The Walking Dead*—a game which also uses a series of branching decision trees—the authors claim that the combination of interactivity, empathy, and complicity afforded to players, have the potential to make them feel responsible for traumatic events they must virtually perpetrate.

Although previous studies have researched moral decisions using different types of game genres [5, 13, 25, 29, 47], our work provides an opportunity to analyze a game where the core mechanic is decision-making and where moral dilemmas are implemented to advance the narrative. Moreover, our paper's aim is to address the question on whether real life morality is followed by players in a digital world environment by providing both a qualitative (i.e., semi-structured interviews) and quantitative analysis (i.e., MFQ30).

3 STUDY DESIGN

3.1 Research Questions

In the work by Weaver and Lewis [47], they argue that moral decisions in games and moral judgments are largely based on participants' real life morality. Following up on this notion from previous related work, this paper focuses on answering the following research questions:

RQ1 How do players' real life morality translate to in-game decisions, specifically in interactive narrative games?
RQ2 Are moral decisions influenced by players' connection with game characters?
RQ3 How does MFT explain players' morality based on the salience of specific moral foundations?

3.2 Method

To explore if and how players translate their real life morality to in-game decisions, specifically in a story-driven game like *Detroit: Become Human*, we conducted a study to gain an understanding about moral judgments in video games. Our research used a within-participants design. The procedure was the same for all participants. Participants reflected about their past experience with the game and watched pre-recorded gameplay portraying one of the game's chapters. We asked participants to complete two sets of the MFQ30. We also conducted semi-structured interviews with the participants where they were asked about their real life morality, how they translate their morality to in-game decisions in story-driven games, and also about experiences with other games that present moral scenarios as part of their narrative. We used the platform User Interviews[1] and Zoom[2] to collect participants' data (see Figure 3).

3.3 The Game

Detroit: Become Human was developed by *Quantic Dream* and published by *Sony Interactive Entertainment* as a *PlayStation 4* (PS4) exclusive in 2018, and then released for Microsoft Windows in 2019. We chose this game because it is exemplary of CCAGs and features an environment in which players modify the story based on their decisions, presenting moral dilemmas that affect the game narrative.

The plot of the game centers around three android characters that are controlled by the player:

- **Kara:** escapes her owner to protect Alice, a young girl. Kara defies her programming and becomes a deviant.
- **Connor:** works as a police detective hunting down deviant androids.
- **Markus:** defends other deviant androids and fights for their rights and freedom.

The game implements a decision-making mechanic that allows players to select different choices that affect the story and relationships between the characters. The game story is divided in 32 chapters and takes around 10 hours to complete a single playthrough. The game received favourable reviews from critics in terms of the visuals, story, animation, the impact of choices on the narrative, and voice actors. Some elements that were criticized include the motion controls and some aspects of character's development [32]. The game presents regular choices (selection-based through the PS4 controller) decision-making mechanic, and quick-time events (QTE). The majority of decisions presented in the game are selection-based (see Figure 5(a)).

3.4 The Chapter: *Meet Kamski*

The chapter that participants were asked to watch[3] is called *Meet Kamski*. This chapter was chosen because it provides a moral dilemma example that allows players to reflect on their morality when making a life-or-death decision (in-game statistics show that roughly 80% of players chose to save the android in the chapter, which prompted our investigation into real life moral tendencies translated to this game).

This chapter served as a memory prompt for the participants and also as a place to reflect on their moral decisions at a pivotal point in the story. Players had to reflect on their moral values and choices when presented with the decision of saving or shooting a game character. Thus, the selection of this chapter was justified because it provides a crucial moral dilemma within the game narrative.

In this chapter, players assume the role of the playable character *Connor*, and make decisions to advance the game narrative. *Connor* is an android that works in the Detroit police department as a detective along with the NPC *Hank*, who portrays the lieutenant. They are both investigating a murder case in which an android

[1] User Interviews: https://www.userinterviews.com/
[2] Zoom: https://zoom.us/
[3] Given current COVID-19 limitations and restricted use of laboratory space, it was not possible to ask participants to play the game. Technological limitations also constrained options of conducting an online study where participants were able to play the game.

attacked and killed a human. In the video that participants watched, *Connor* and *Hank* meet *Kamski*, the owner of the company *Cyberlife* and the creator of the androids. *Kamski* decides to question *Connor* about his loyalty towards androids or humans. He then performs a *Kamski Test* and asks Connor to shoot another android to obtain information that can help advance their murder investigation. If *Connor* decides to shoot the android, *Kamski* will answer one question, otherwise no information will be given (see Figure 2 for a complete flowchart of the chapter). In the video shown to the participants, *Connor* spares the android, thus no additional information was obtained to advance the murder investigation.

3.5 Participant Recruitment

Participants were selected and recruited using the platform *User Interviews*. A pre-screening questionnaire was conducted to select eligible participants. The pre-screening questionnaire filtered participants. We selected participants that played the game in the past six months and completed at least 60% of the game. They were also screened to make sure they were at least 18 years of age for ethical considerations. The study received ethical clearance by the corresponding Office of Research Ethics. No other inclusion or exclusion criteria were used. Twenty participants were recruited for the experiment. Data from one participant were discarded from the analysis because of not following the procedure of the study design (i.e., the participant answered both MFQ30 before the interview section). Thus, only data from 19 participants were analyzed. Participants received a monetary remuneration in the form of gift cards for their time.

Participants were based in Canada, the US, and the UK when they were interviewed. Ten participants were between the ages of 18-24, one between 25-29, two between 30-34, four between 35-39, one between 40-44, and one participant reported having more than 50 years of age. Nine participants identified as male (*47.3%*), nine as female (*47.3%*), and one as non-binary/third gender (*5.2%*). Ten participants (*52.6%*) reported having more than 10 years experience playing games, 12 participants (*63.1%*) mentioned they play games in a daily basis, and 12 participants (*63.1%*) reported having previous experience with interactive narrative games. Participants mentioned the following examples of previous experience with interactive narrative games: *Mass Effect series* (e.g., [4]), *Heavy Rain* [15], *Life is Strange series* (e.g., [14], and *The Walking Dead* games [46] by *Telltale*.

3.6 Participant Recruitment Rationale

The objective of this paper is to present a study to analyze how players reflect on their moral decisions based on their recent experience with the game. To achieve this, we recruited participants that have played the game in the past six months so their playthrough(s) could be easily recalled. While this might affect how they view and experience the pre-recorded video of the specific chapter they were presented with, we believe this limitation does not affect their ability to reflect on in-game decisions based on real life morality and personal moral values. Moreover, we wanted to understand if participants felt they were translating their morality when they played the game for the first time as opposed to subsequent playthroughs. In the latter case, they might decide to experiment with their choices as described in section 5.

We decided to recruit participants that completed at least 60% of the game as they would have a better understanding of the story, character development, and connection with the characters which might influence their moral decisions. Additionally, when participants were asked if they recalled the specific chapter they were shown during the study session, they all mentioned having experience with the narrative or playing that chapter. This indeed might affect player agency; nonetheless, as participants already had experience with the game, we believe this limitation does not present a significant constraint regarding participants' recall and reflection on their moral decisions.

Furthermore, we have no reason to believe that using pre-recorded video will negatively affect the methodology. Bentley et al. [2] explored the implementation of cued-recall debrief method to analyze affect when reflecting on the use of a system. The results indicate that this method can provide insights about participants' affective experiences. Moreover, Chung and Gardner [12] discussed the use of a video-cued-slider technique where participants recalled their experiences in a real versus virtual world. The results indicate that this technique can be useful to analyze participants' experiences and can be further studied in other contexts (e.g., analyzing how participants reflect on their morality when presented with pre-recorded video of a game they previously played).

3.7 Moral Foundations Questionnaire (MFQ30) Protocol

The MFT has several questionnaires approved for use. For this study, we applied the MFQ30, as the suggested tool to provide a good measurement when analyzing the corresponding items per moral foundation. The MFQ30 is based on five morality dimensions: "harm/care," "fairness/reciprocity," "ingroup/loyalty", "authority/respect," and "purity/sanctity" [19].

The MFQ30 is divided in two parts. The first part is characterized as relevance, and is composed of 18 items that must be answered using a 6-point Likert scale from 0 to 5, where 0 represents that the item is *not at all relevant to the participant's morality* and 5 stands for *the item being extremely relevant when the participant judges what is right and wrong*. The second part of the questionnaire is made of 18 different statements, that must be rated also using a 6-point Likert scale from 0 to 5, where 0 represents strongly disagree and 5 represents strongly agree. The questionnaire was applied twice:

- **Before**. This set was answered before watching pre-recorded gameplay of the chapter *Meet Kamski*. It focused on the perceived real life morality of the participants.
- **After**. This set was answered based on the perceived morality of the playable character *Connor* after watching the scene in the pre-recorded video in which he spared an android's life.

We used the platform Qualtrics[4] to collect questionnaire data and ran the Cronbach's α reliability for each one of the factors. These are reported in detail on the results and discussion sections.

[4]Qualtrics: https://www.qualtrics.com/

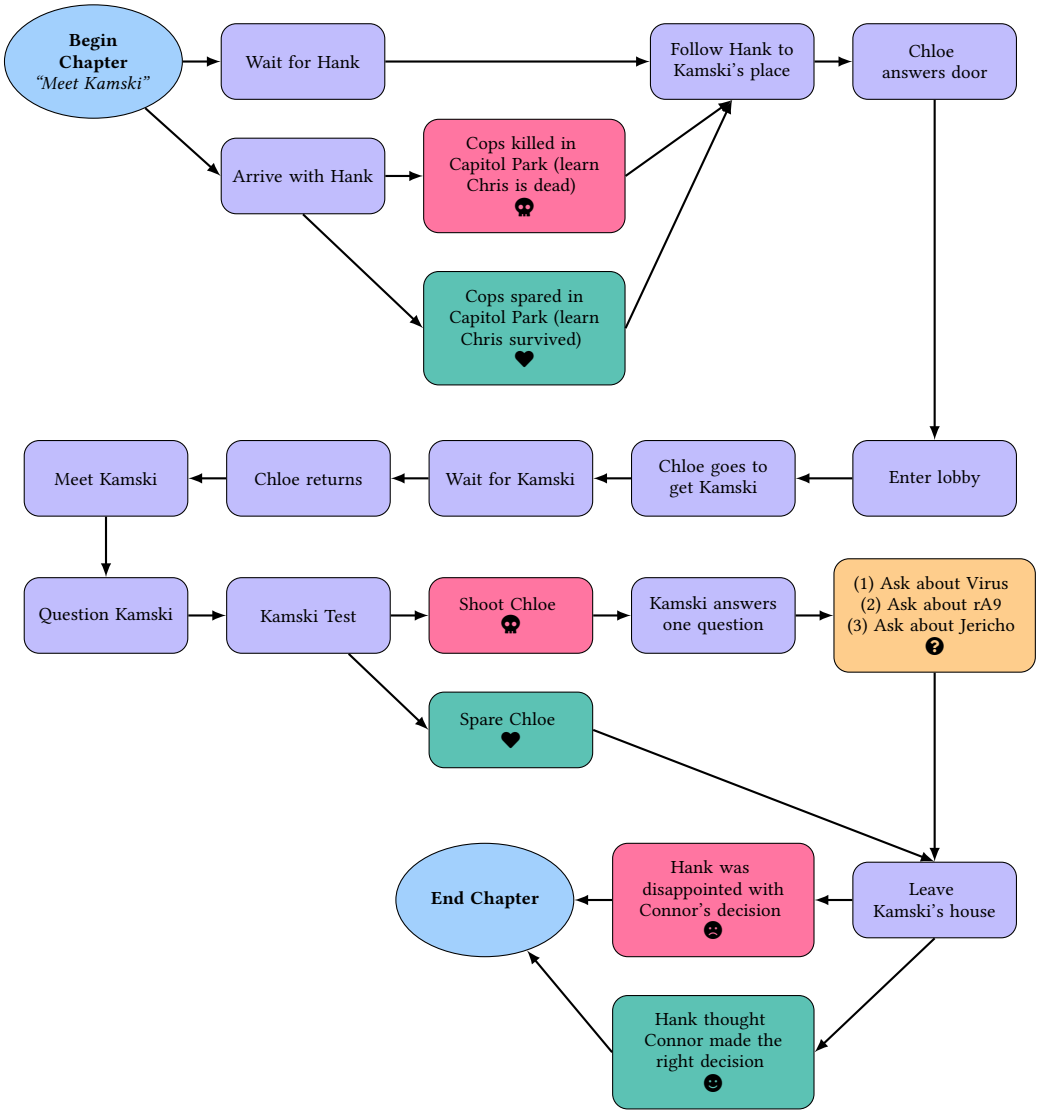


Figure 2: Detroit: Become Human *"Meet Kamski"* chapter. Choices made by the player will create different paths that can have implications in subsequent chapters.

3.8 Interview Protocol

Qualitative interview data were collected via one-on-one remote semi-structured interviews. Data about participants' previous experience with the game were also collected. The interviews allowed to collect information about participants' perception of morality, not only about their own, but also about the characters in the game. They also had the opportunity to reflect on how they apply their morality in interactive narrative games and if they feel they translate their real life morality to in-game decisions. Examples of the questions asked during the interview are: *How would you describe yourself in terms of morality?*, *Do you follow the same morality in all story-driven games and why or why not?* and *Do you feel connected to the game characters and why or why not?*.

3.9 Apparatus

The video presented to the participants was pre-recorded from a PS4 and lasts around 11 minutes. We decided to present this specific chapter to the participants because it includes a scenario in which a morality dilemma is presented and a choice should be selected. The video also served as a memory prompt for the participants' previous experience with the game. Around three decision-making opportunities are presented in the 11-minute duration of the video. These opportunities include dialogue with the characters and sparing/shooting the android. The video was watched in the participants' own devices (i.e., mobile or PC/laptop). The session was video recorded using the platform *Zoom* and lasted around 60 minutes.

Figure 3: Procedure and experimental design of the study conducted in this paper.

3.10 Procedure

We used the platform *User Interviews* because it provides features to conduct online studies, and automates recruitment, screening, and remuneration for participants. Participants were pre-screened and given information about the study before scheduling a session through the platform. During their session, they were given the opportunity to read an information sheet with detailed information about the study and asked to e-sign a consent form. After e-signing the consent form, they were asked to complete a pre-study questionnaire asking for basic demographic data and previous experience with story-driven games. We asked about previous experience with story-driven games because one of the questions during the interview was related to morality applied on similar types of games. The researcher then explained the different tasks to the participants (i.e., MFQ30 and semi-structured interviews) and also reminded the participants that the session was being audio and video recorded.

Participants then were asked to complete the first MFQ30, reflecting on their own morality before watching the video. After completing the questionnaire, participants were sent a link and they were able to watch pre-recorded gameplay of one of the chapters in the game (i.e., *Meet Kamski*). Once participants finished watching the video, the researcher conducted a semi-structured interview with questions about real life and in-game morality.

Finally, participants were asked to complete a second set of the MFQ30 from the perspective of the playable character they saw in the video (i.e., *Connor*). At the end of the session, the researcher debriefed participants about the objective of the study, asked for any additional feedback, and provided a monetary remuneration ($20 CAD) in the form of gift cards.

4 METHODS

4.1 Thematic Analysis - Overall Approach

For the analysis, we followed a qualitative thematic analysis approach based on the method proposed by Braun and Clarke [6]. In this thematic analysis, we included the analysis, organization, descriptions, and report of common themes based on the collected data. We followed the process described by Braun and Clarke [6], Nowell et al. [36] to report on the comprehensive analysis of the qualitative data from the interviews, following a reflexive thematic analysis approach.

(1) **Phase 1 - Familiarization with the collected data**. Raw data were gathered through video interviews and records were kept for each participant. During the interview process, it was possible to start identifying common themes mentioned by the participants.
(2) **Phase 2 - Initial codes generation**. The coder conducted an analysis of the data and codes emerged organically to identify recurring themes.
(3) **Phase 3 - Themes search**. Once the coder analyzed the results, themes descriptions were generated and integrated into the findings. The coder made sure the generated themes were connected and related to findings such as morality being translated from real life to in-game decisions.
(4) **Phase 4 - Themes review**. The coder analyzed the generated themes and made updates when themes appeared to be similar by merging common findings.
(5) **Phase 5 - Themes titles and definitions**. The coder named the themes and provided a definition for each one.
(6) **Phase 6 - Report**. Lastly, the findings are reported in detail in the results section of this paper.

Interview data were transcribed and organized using the software *Dovetail*[5]. This software also allowed the coder to identify and assign codes in the transcripts. Code generation was organic and unstructured, and codes could evolve to better reflect patterns in the collected data.

4.2 Reflexive Thematic Analysis

We conducted a comprehensive exploration of the literature on thematic analysis. We emphasize that a thematic analysis is often attributed to a single qualitative analysis approach. However, Braun and Clarke [6, 8], Braun et al. [9] posit that thematic analysis can be described as an *umbrella* methodology, and several orientations can be applied to the compiled data. We followed the reflexive thematic analysis approach as discussed by Braun and Clarke [6, 8], Braun et al. [9].

Braun and Clarke [7], Braun and Victoria [10] posit that "reflexive TA is not about following procedures 'correctly' (or about 'accurate' and 'reliable' coding, or achieving consensus between coders), but about the researcher's reflective and thoughtful engagement with their data and their reflexive and thoughtful engagement with the analytic process". The researcher's analysis should present interpretation and patterns of the data. Based on this discussion, Byrne [11] provides an example of Braun and Clarke's approach to reflexive TA where a single coder analyses the dataset, highlighting that "there should be no expectation that codes or themes interpreted by one researcher may be reproduced by another". Reflexive TA's objective is not to provide 'accurate' or 'reliable' coding, and it is not focused on achieving consensus among multiple researchers

[5]Dovetail: https://dovetailapp.com. Dovetail is a software tool for qualitative data analysis that allows transcribing recordings and analysis of data in a collaborative way.

or coders [7, 10]. This reflexivity is discussed in the positionality/reflexivity section, where aspects such as the researcher's previous experience, pre-existing knowledge and background might influence the analysis of the qualitative data.

Positionality/Reflexivity. We decided to incorporate the reflexive thematic analysis approach by reflecting on the analysis from a single coder. The coder has a background in STEM as well as experience in the games user research field, specifically in the analysis of interactive narrative games. Based on this expertise, the coder was able to analyze the raw data and code the transcripts that resulted on themes that are relevant to morality and moral foundations in interactive narrative games. The coder's interpretation of the themes is based on the implementation of morality in games and how players translate their real life morality to in-game decisions. The inclusion of the coder's background provides a comprehensive understanding of the representation of morality in story-driven games.

The coder reflected on their assumptions and biases for the analysis of the collected data and the creation of the presented themes, as recommended for qualitative research [30]. The thematic analysis was conducted by a single coder, who has previous experience with interactive narrative games and games research as part of their current PhD degree. The single coder's research started with the analysis of concepts found in interactive narrative games, such as agency. From there, the research scope evolved to understanding how people translate morality in interactive narrative games and the perceived experience from these interactions. The coder's interest in interactive narrative games might have biased some aspects such as the game selected for the study. Cultural background, gaming habits, and previous knowledge of the game might have also influenced the coder's interview questions. Moreover, other factors should be taken into account. As we are trying to understand how people make moral choices in games, participants could have answered questions from a social desirability standpoint affecting the results. Furthermore, participant's diverse cultural backgrounds and experiences with current social dilemmas (e.g., COVID-19 pandemic) could have affected their perception and definition of morality.

4.3 Application of the MFQ30

We calculated the Cronbach's α reliability test to verify if the measures were valid for our reporting. Boyan et al. [5]'s research had a sample size of 138 participants and Tamborini et al. [45] research had 565 people. Our approach focused on the qualitative insights. However, we deployed the MFQ30 to verify if these measures would work for smaller sample sizes such ours ($N = 19$).

Previous MFQ research has not used the questionnaire twice with a single participant. Therefore, we tried an innovative approach changing the existing research protocol. Our intention was to be able to measure if the scores differed when filled in with personal values in mind, versus reporting on a playable game character after watching their decision-making process. We have used the syntax to compute each of the scores given by the MFQ30 authors (see `Supplementary Material`) and duplicated it to calculate the **Before** and **After** scores.

5 RESULTS AND ANALYSIS

5.1 Theme Analysis and Conceptualization

We present the analysis and definition of the conceptualized themes by the single coder. Each subsection constitutes a developed theme (see Figure 4 for an example).

5.1.1 ***First Playthroughs are Morality-Driven, Subsequent Ones are Driven By Experimentation.*** The majority of the participants mentioned that they normally apply their own morality when playing the game for the first time. The reason they prefer to act according to their own morality is because they feel they are imprinting their personality to the game character, so their in-game decisions are aligned to what they would normally do in real life. They tend to start experimenting with other choices after the first playthrough to experience different paths in the game. However, their initial experience is aligned with their own moral values.

> *"I would say usually I just go [...] to what I find morally right on a day-to-day basis. I know sometimes people will play games in a completely opposite way of how they would usually react just to see what would happen. Because it is the game [/dots] you have the ability to choose [...] who you want to be in this game. It is not reality. So there is not really any repercussions for it. But usually, because even if it is just a game, I tried to stay in line with what I believe. Just because otherwise I feel [...] the slightest sense of guilt."*
>
> —🎙 Participant 15

Participants mentioned that it is important to feel that the game is personalized, and this represents a reason they try to follow their own morality when they first experience the game. Participants mentioned that even when they have the chance to select different choices in the game, they tend to follow their own morality regardless of the narrative consequences. They also mentioned that for games that offer a dichotomy choice (i.e., the good vs. wrong choice), they tend to follow the good choice because they want to be righteous. However, they also mentioned that morality would depend on the scenario presented in the video, and that morality is nuanced as there is no black or white aspect to it.

> *"[in] the initial playthrough, I just wanted to have a positive impact on any decisions that were being made based on my own personal morals."*
>
> —🎙 Participant 8

On the other hand, when participants mentioned about experimenting with choices, they do it to experience different paths or endings to the game. This might be the case when participants feel the initial choices are not offering traction and they feel the game is blocked (i.e., the narrative is not progressing as they would expect).

Participants also mentioned that the setting of the game influences their own morality. One participant mentioned that if they are playing a fantasy game like *Skyrim* [42] then they would feel like experimenting with the choices to see different consequences. In *Detroit: Become Human* this feels more difficult given the realism of the game and connection with the characters, so they tend to follow a moral path throughout the narrative. Other participants

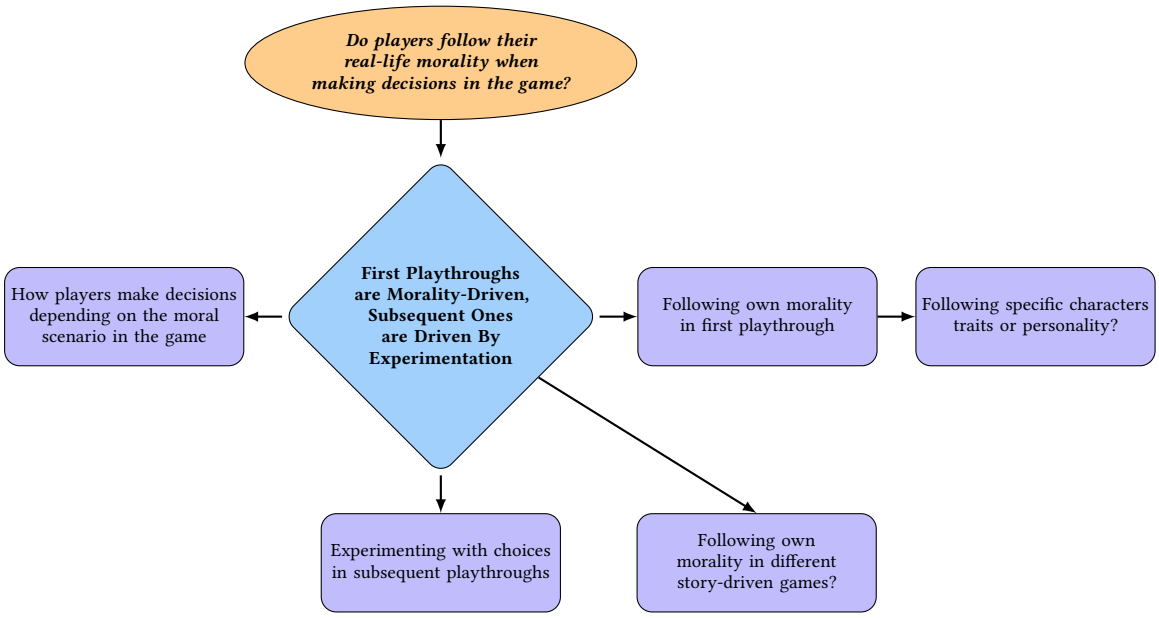


Figure 4: An example of an initial theme developed by the single coder. The initial theme is represented by the blue figure, connected to codes and findings related to the specific theme.

mentioned that sometimes they would experiment with the most negative choices just to see how the game reacts, because there are no real consequences[6]. They would experiment with other choices because they would like to feel a more exciting experience.

> *"And then the second and third times that I am doing it, [...] I go for a specific action set for the different outcomes. [...] So the first time is [...] my personal morals. And then anytime after that, I am feeling for different decisions that I did not make the first time to see how things go."*
>
> —🎙 Participant 17

5.1.2 ***Let's Not Kill Our Darlings: Moral Decisions are Strongly Affected by Character Connection.*** When talking about connection with the game characters (e.g., NPCs), participants mentioned that they would normally select choices to build a positive relationship with them. Some participants mentioned that it is important for them to be liked by NPCs. For the game *Detroit: Become Human*, participants mentioned that it was important to also build a positive relationship with the playable characters. Some participants mentioned that they grew attached to the character *Connor* and they would normally select choices in the game that would not harm this character. This was also mentioned for the character *Hank* (i.e., the lieutenant) because it was important for participants that the relationship between both characters was positive and amicable. Participants mentioned that building a relationship with the characters in the game—being the playable characters or NPCs—gives them the opportunity to personalize their experience.

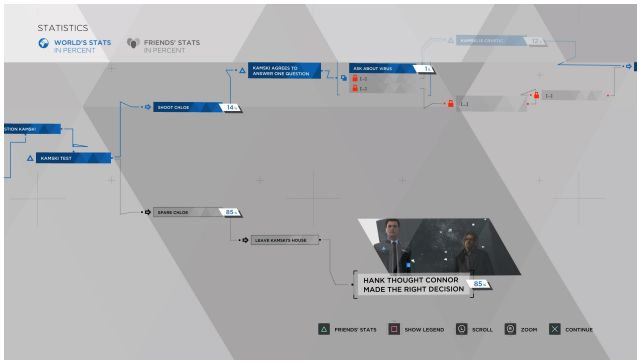
> *"So despite the fact that Hank at first was very against Connor, I was like trying to get on his good side all the time. And it was not always working because I never played the game before, so some decisions made him angry."*
>
> —🎙 Participant 11

Additionally, participants mentioned that it was important to "put themselves in the character shoes" and select empathetic choices that would be beneficial for their characters. When participants interacted with NPCs and their choices were negative or the consequences were not what they were expecting, they would experience emotions like guilt or frustration because they wanted to build a positive relationship with those characters and they wanted those characters to survive in the game. Participants mentioned that the narrative presented in the game allowed them to connect with the characters, thus feeling empathy and building a connection with them.

> *"The major character that did not survive was Luther. And that made me so sad what he did of sacrificing himself for Alice and Kara. And I was so sick. It broke my heart."*
>
> —🎙 Participant 4

[6] According to Jesper Juul in his definition of games in his book Half-Real, consequences are optional and negotiable. Real life consequences are completely optional, making games for the most part a safe form of interaction. Game operations and moves must be mostly harmless. In contrast, real weapons result in non-negotiable consequences (e.g., death). The perception of danger and risk in a game fuels their attraction within the conventions. It's an ideal and soft condition within culturally accepted limits. The emotional consequences of games are less controllable [27].

(a) The decision-making mechanic in the game asks players to decide whether to shoot or spare the android, a moral decision.



(b) World statistics showcasing players' choice when presented with the decision of shooting or sparing the android. 85% of players decided to spare the android.

Figure 5: Screenshots from *Detroit: Become Human* [38] showcasing the decision-making mechanic in the chapter *Meet Kamski* where player's assume the role of *Connor*, and must reflect on their morality to select a choice. The second picture reports on world statistics about a moral decision in the chapter, whether to shoot or spare the android.

When participants were presented with the video of the chapter *Meet Kamski*, 15 of the 19 participants mentioned they decided to spare the android in their first playthrough. The same number of participants that decided to side with the androids at the end of the game. Participants mentioned that their decision to spare the android was based on the androids being portrayed as beings with emotions and complex reasoning. Thus, leading to feeling compassionate towards them. This can be a result of the narrative as well, because participants felt that androids had their own personalities and they deserved to be treated with the same rights and freedoms as humans.

> *"So I was trying to put myself in Connor's shoes [...] I did not feel I should have killed the robot. So I did not. [...] I have been doing the playthroughs afterwards and having to kill it [...] is horrible. I would not do that."*
>
> —Participant 11

5.1.3 ***"I Don't Want to Feel Guilty" - Participants make Moral Decisions to Avoid Negative Emotions.*** When participants were asked about their own perception of morality, they would mention that they act morally to be fair and respectful of other people, and not make anyone suffer as a consequence of their decisions.

Some participants mentioned that they would feel emotions like guilt if they do not follow their own morality. In scenarios where players feel the consequences to their choices are going to affect other characters in the game, they prefer to select the good choice to avoid feeling guilty. Some participants also mentioned that when the game is presenting decisions that have impactful consequences, they tend to follow their morality because they feel going against it would elicit negative feelings. They mentioned the example presented in the video as an impactful decision in the game (i.e, shooting or sparing the android).

> *"When, in one of the storylines, you try to escape to Canada [...] there was an option of sacrificing one person. And I couldn't do it. Like I knew it was a risky move, because I could have lost there and then, but I chose not to sacrifice anyone."*
>
> —Participant 16

When the game presented scenarios where participants were able to sacrifice another character within the narrative, they reported feeling emotions like guilt. They mentioned that it is difficult to make a decision in a scenario that asked them to sacrifice another character. In this case, they would normally avoid choosing the violent route in the game. Four participants mentioned that they decided to take the pacifist path in the game to avoid any violent confrontation between humans and androids.

> *"And I think that is one of the things that led to like the good ending is [...] the stuff with Markus, I tried to pick the non-violent actions."*
>
> —Participant 4

5.1.4 ***Empathetic Moral Decisions Are Driven by Narrative Plight, as well as Emotional and External Realism: This Supercedes Experimentation Only For Some Players.*** When talking about game design, one participant mentioned that interactive narrative games give the opportunity to experiment with morality depending on the game context. This allows participants to have personalized experiences based on how the narrative is designed and presented. At the same time, participants mentioned that the realism of the narrative and the characters affect how they apply morality and make decisions in the game. One example is the realism of the androids compared to humans, and the impact this has on players' morality. Participants mentioned that they considered the androids as actual entities with emotions and feelings instead of just being objects in the game world.

Additionally, they mentioned that they see the narrative as being realistic in a few years in comparison to other interactive narrative games where the story can be seen as more science-fiction (e.g., *Mass Effect* series). They also mentioned that the narrative

talks about social dilemmas that can be present in real life, such as marginalized groups and freedom restrictions.

> *"That was one of the cool things about this game [...] there was a lot of real world [...] parallels that you could see, you know, just any marginalized group [...] like tugged at your heartstrings. And it made you think [...] I was just hoping [...] people to come together, [...] it was a lot real."*
>
> —🎙 Participant 4

Participants mentioned that the game narrative also has an impact on how they make decisions because the characters paths are interwoven and one choice can have significant consequences in subsequent chapters. This aspect can affect how they translate their real life morality to make in-game decisions.

> *"I think it is really interesting how [...] one change and decision can impact everyone's different storylines, because they are all interwoven, which I thought was cool [...] butterfly effect."*
>
> —🎙 Participant 19

5.1.5 ***"Do No Harm" Above Authority-Driven Morality.*** When participants were asked to complete the first set of the MFQ30, they were subsequently asked about some of their answers during the interview. They mentioned that based on their answers, compassion, fairness and empathy are important aspects in their lives. They felt they translated these aspects to in-game decisions when showing empathy and compassion towards the androids. They also mentioned that based on the game narrative and how different story arcs are presented in the game, they sympathize more with the androids than the humans.

> *"I [...] rated a lot of the questions about [...] treating other people well, and justice as important. And then I felt like I had maybe a little less relevance or importance assigned to things like [...] being a team or like following authority, and then maybe even less for [...] following maybe religion, or chastity [...] I said those were the lowest and I said the highest was for [...] the way people are treated equally."*
>
> —🎙 Participant 10

When they were asked to reflect on their answers in the MFQ30, they would say that in the real world they try to care for people and not harm anyone. Even when the narrative presents the player with the option to sacrifice a character to advance in the game, they would prefer to select another choice as they do not want to harm any of the characters.

When participants were asked about the authority aspect in both the MFQ30 and the game, they mentioned that authority is not as important as caring for people and being fair. They mentioned that authority is important but is dependent on the situation and the authority figure. One participant mentioned that the concept of justice is important, but not the justice system as it can be unfair to some people. When talking about the game narrative, some participants mentioned that the authority figures in the game (i.e., humans) were portrayed as overpowered.

> *"There was one question too about justice. [...] And I was not sure how to answer that one. And then I put yes, justice is the highest form of morality. But I mean, justice as a concept, not the justice system, which I would argue is got a lot of immorality to it. So I wanted to stop there and actually say [...] I'm saying good stuff about justice[...] as a concept."*
>
> —🎙 Participant 7

5.2 MFQ30 - Results

We started the quantitative analysis of the MFQ30 responses by running the Cronbach's α reliability test to find the values for each of the subscales on both **Before** and **After** questionnaires. The reliable scores are highlighted with *'s in Table 1. Therefore, we can conclude that this data collection methodology did not produce reliable results for items other than the Harm and Purity items (at or above the acceptable Cronbach's α threshold of 0.7), for which we conducted a *paired t-test* ($n = 19$) to compare "before" and "after" stimulus exposure results. Unfortunately, for Harm items (*before*: $M = 3.877, SD = 0.666$, *after*: $M = 3.368, SD = 1.208$; $p = 0.138$) and Purity items (*before*: $M = 2.096, SD = 0.868$, *after*: $M = 2.008, SD = 1.144$; $p = 0.720$), the difference between "before" and "after" scores were not significantly different ($p > 0.05$). Thus, we did not conduct any further analysis on these items.

Cronbach's α Scores	**Before**	**After**
Harm	0.684*	0.811*
Fairness	0.251	0.539
In-Group	0.491	0.496
Authority	0.500	0.655*
Purity	0.778*	0.745*

Table 1: Cronbach's α Scores for each group determined if the data were reliable. Reliable data points are marked with an asterisk*. The MFQ30 items were compared before and after stimulus exposure to the pre-recorded gameplay of the *Meet Kamski* chapter.

Our data can be found in the supplementary material for readers interested on the MFQ30 using our data collection method and with a sample of $N = 19$ participants. This paper's discussion and results were focused on the rich qualitative data collected instead. We reported the quantitative analysis here for completeness and open questions remain whether the MFQ30 works for small sample sizes and can be deployed on the same participants twice. Our research does not support this.

6 DISCUSSION

The results from our analysis provide insights into how players translate real life morality to in-game decisions. Previous research [5, 26, 47] found that real life morality has an effect on players' decisions and the relationship with characters. Our work

deepens this analysis by providing findings from a mainly qualitative approach when examining a published game.

In the following subsections, we provide a structured discussion of the perception of morality in games and how these findings can have implications for future design. The presented findings answer the previously established research questions:

RQ1 How do players' real life morality translate to in-game decisions, specifically in interactive narrative games?

RQ2 Are moral decisions influenced by players' connection with game characters?

RQ3 How does MFT explain players' morality based on the salience of specific moral foundations?

6.1 RQ1 - Real-life Morality translated to In-Game Decisions

Our findings indicate that all participants mentioned they follow their own morality at least when playing the game for the first time. From the interview analysis, 12 participants mentioned that they would experiment with the choices in subsequent playthroughs to test game mechanics and experience different paths in the game, thus their understanding of the story might be different compared to the their first playthrough (e.g., Mitchell and McGee [33]). This is a relevant finding given the story and context of *Detroit: Become Human*. The majority of the decision-making moments in the game present a moral dilemma (e.g., siding with humans or androids).

Based on world stats from the game (see figure 5(b)), 85% of players around the world decided to spare the android in the scenario we presented. This is an important finding because even if players are aware their decisions do not have a real life impact, they still chose the moral option. This contrasts with the discussion presented by Hartmann et al. [20] when discussing the concept of moral disengagement.

The work by Boyan et al. [5] explored the game *Mass Effect* and asked participants to choose a path between Paragon (moral) or Renegade (immoral). The majority of participants (64.5%) choose the Paragon option, which consolidates our finding that even if players are given the opportunity to act against moral behaviours without consequences in the real world, they still feel their decisions have consequences in the game story.

This supports our study because participants mentioned that they wanted to act morally and have a positive impact on the game story and characters. This counters the concept of moral disengagement [21] that posits players would disconnect from the real world as they are aware the decisions they make in the game have no real life consequences. We believe that our findings can be related to moral dilemmas that can portray realism and situations that are similar in the real world (e.g., marginalization of certain groups).

6.2 RQ2 - Participants' Connection with Game Characters

Findings in our study indicate that participants felt they imprint their personality to characters in the game, and that is why they act morally. Participants mentioned they prefer to act morally to prevent experiencing negative emotions (e.g., guilt). This aligns with previous findings about feeling of guilt when acting immorally in games [17, 20, 47]. We believe this is also a consequence of the connection participants felt with the characters. Participants felt that characters in the game had personality, consciousness, and emotions. This is evidenced by the research of Heberlein and Adolphs [22], Morrison and Ziemke [34], Yee et al. [48] pointing to the fact that players would perceive game characters not as objects but as social entities with morality. As a result of this perception, participants in our study chose the good option to prevent any negative consequences for the characters. We believe that game design, visuals, and portrayal of characters are presented in a realistic manner. Thus, participants felt more connected with the characters.

6.3 RQ3 - Perception of Moral Foundations for In-Game Decisions

In the research by Tamborini [43], the violation of one or more foundations would influence players' enjoyment, thus also affecting decision-making as a consequence. This is also supported by the research of Joeckel et al. [26] where it is evidenced that moral salience has an effect on in-game decisions for some players. Haidt and Joseph [19] indicate that the harm/care foundation relates to emotional, physical harm, compassion, and empathy, whereas the foundation of fairness/reciprocity is represented by considerations of unfair treatment and justice.

When participants were asked during the interview which moral foundations they consider the most important ones in real life, they mentioned that harm/care and fairness/reciprocity are the most significant. From the qualitative analysis, comments made by the participants were related to making decisions that would not harm game characters to avoid experiencing negative emotions. They also mentioned feeling compassion and empathy for the androids.

When discussing the moral foundation of fairness/reciprocity, participants would mention that they would like the androids to be treated equally as humans. When participants were talking about authority figures in the game (i.e., humans), they mentioned that humans felt overpowered and that androids were treated unfairly. We can relate this to the fact that most participants opted to spare the android and to side with the androids at the end of the game. In the discussion about the remaining foundations, qualitative data indicate that participants do not give the same significance to the rest of the foundations (i.e., ingroup/loyalty, purity/sanctity). However, they mentioned that in the case of the foundation of ingroup/loyalty, they would prefer to build positive relationships with the NPCs. They mentioned the example of *Connor* sparing the android and strengthening his friendship with *Hank*.

Even if participants were aware that the android could be replaced by another unit if they decided to shoot it, they would experience feelings of guilt, thus they decided to go against *Connor's* programming of solving the criminal investigation and instead spare the life of the android. Our qualitative findings indicate that when participants mentioned specific foundations as important in real life (i.e., harm/care), they would translate their morality to in-game decisions.

6.4 Narrative Realism Affecting Morality

Current technological advances in games allow for the creation of realistic visual characters. *Detroit: Become Human* presents physical realistic game characters. However, even if the game allows for a realistic environment, the narrative represented in the game sometimes imitates the real world. Galloway [16] discusses that theoretical issues in games allow connections between the game world and the real world. Realism is then "a reflection of the real world, including social dilemmas, injustice, and personal drama" [16]. Although *Detroit: Become Human* presents a game world that is not consistent with the current reality (i.e., autonomous androids do not exist as portrayed in the game), the moral dilemmas can represent a mimetic representation of social and moral discourses in the real world. For example, players mentioned that representation of marginalized communities and denial of rights for androids are social issues similar to current society and morals. We can see this connection in the real world as social issues experienced by ethnic minorities and marginalized groups exist. Galloway [16] calls this fidelity of context a "congruence requirement", where the social reality of the player connects with the game world and vice versa. This social realism then represent a relationship between the player and the game narrative.

Another interesting finding is how participants responded to questions about fairness in the game. (e.g., whether or not someone was treated differently or their rights were denied). Current events (e.g., the COVID-19 pandemic) may influence how people reflected on their moral values when responding to these questions. It might be the case that in a different context participants might respond differently, thus their moral decisions translated to the game narrative could be influenced by current reality.

6.5 Implications of Our Findings in the Design of Morality-Driven Games

Our results provide a qualitative understanding of representation of moral dilemmas in interactive narrative games. Our study has valuable implications for game designers when creating an engaging experience for players. These implications can inform how a narrative should be created based on players' decision-making to elicit specific emotions. The analysis of the qualitative data indicates that players apply their morality to in-game decisions. Thus, this can also inform designers about which moral foundations are important and which ones should be implemented within a narrative to achieve a specific goal.

Additionally, findings indicate that players enjoy experiences where they can personalize their character based on their own morality. Game designers should consider how they can create a personalized experience based on the representation of moral foundations that improve players' decision-making. This personalized experience also means players are able to connect with playable characters and NPCs in the game, which is important for players.

Other concepts are also worth discussing, such as realism. Findings indicate that along with realism of the game world, the implementation of social scenarios can create a compelling experience. Moral foundations can help create these scenarios where players are able to make decisions based on their morality.

7 LIMITATIONS AND FUTURE WORK

Some limitations apply to this paper's methodology. First, there was only one coder for the reflexive thematic analysis. Thus, the presented results can be biased by the researcher's perspective. The positionality/reflexivity section provides an understanding of how the coder's previous experience and pre-existing knowledge might have influenced the presented analysis. However, as discussed in 4.2 the objective of a reflexive TA is not to provide 'accurate' coding or achieve consensus between multiple coders [7, 10].

Another limitation is the implementation of the MFQ30 with a small sample size. Previous research has shown that the majority of the studies using the MFQ30 have a higher number of participants; in our study we had a small number of participants and this may have affected the reliability scores negatively. Lastly, we have no knowledge of the MFQ30 being applied twice in one experiment, with different objectives.

Another limitation that was encountered for this study is that participants already knew the game and previously played it in the last six months. This could affect their perception of character's morality and the narrative because they already knew the moral dilemmas that were presented in the game. However, we believe that—even if this can be considered a limitation—participants being familiar with the gameplay, characters, and narrative, increases the validity of our findings because participants already had the opportunity to reflect about their morality in the game and in some cases experiment with choices in subsequent playthroughs.

Furthermore, we analyzed an interactive narrative game that only includes the mechanic of decision-making through the story, as opposed to other games were other mechanics are also implemented (e.g., upgrading gear or guns). We can further explore different conditions that include other types of games genres that also present moral situations to players (e.g., firs-person shooters (FPS)), and compare the differences between the games. We also believe that the realism portrayed in the narrative—both for the characters and the story—might have affected how players perceived morality. Some players mentioned that narrative realism can impact their morality, comparing the story in this game with other titles such as the *Mass Effect* series where the setting relies on science fiction aspects.

We believe that another limitation is that participants only experienced limited game content (i.e., the video used in the study only presented one chapter in the game). Although they already had experience with the game, the fact that they may not recall all the chapters can be a limitation in our study.

Current events and social issues might have influenced participants' responses (e.g., COVID-19 pandemic). It would be interesting to compare if future responses are similar and not influenced by these circumstances. A limitation that we think might have also influenced the responses is that participants where recruited from only English-speaking countries (Canada, the US and the UK), thus race and culture might have also influenced the MFQ30 results.

The concept of morality in games can be further explored by triangulating different research methods to support our findings. By extending the research (e.g., conducting a lab study where participants are able to play the game) , we think it is possible to uncover additional aspects that players take into account when making

moral decisions. Future work includes data analysis implementing other types of validated questionnaires similar to the MFQ30 (e.g., MIME [43]) and the use of a bigger sample size to further validate our findings. Additionally, integrating participants that have no previous experience with the game can be beneficial to understand how players apply morality specifically in the first playthrough. Moreover, other types of media could be analyzed to compare the results, for example how players perceive morality as spectators rather than making decisions.

8 CONCLUSION

Exploring how people make decisions when presented with moral dilemmas in games is important because it provides an understanding of the way real world morality is translated to in-game decisions. There has been a lack of research into understanding players' perception of morality, moral judgments, and how moral choices are affected by game elements like realism. Our work addresses the gap of understanding player's perspectives on morality, and also explores aspects that can affect how players translate real life morality to games (e.g., social issues in real life affecting moral choices in games). We conducted a study with $N = 19$ participants. First, they were asked to reflect on their own morality through the MFQ30. Subsequently, participants watched pre-recorded gameplay of one of the chapters in the game where a moral dilemma is presented (i.e., sparing or shooting an android). A semi-structured interview was conducted and asked participants about their experience with the game, morality translated to in-game decisions, and other aspects of morality. Finally, participants responded a second MFQ30 reflecting on the morality of the playable character.

Our main takeaways from the qualitative analysis indicate that participants translate their real life morality to in-game decisions at least for the first playthrough whereas subsequent playthroughs might be driven by experimentation. Moreover, participants indicated that their moral choices are affected by character connection, and they tend to select choices that are beneficial for their characters to avoid experiencing negative feelings such as guilt. Finally, game realism can affect how characters make decisions by reflecting on moral dilemmas that can be present in real life.

We believe the insights from this paper can be useful for game designers when implementing moral dilemmas and morality-driven narratives in games. This can spark discussion into new approaches to represent morality in games. Our work extends past research into understanding morality in games, and provides a discussion regarding new ways to create meaningful experiences for players. This research can be beneficial to the CHI community as it provides an understanding into the simulated moral dilemma aspect and how users react to these dilemmas not only in games but also in other platforms or systems.

ACKNOWLEDGMENTS

This research was made possible by Lennart Nacke's NSERC Discovery Grant 2018-06576, his two Canada Foundation for Innovation John R. Evans Leaders Funds, the NSERC CREATE SWaGUR grant, Mitacs Accelerate, and the Canadian Institutes of Health Research (CIHR) Active and Assisted Living Program Exergetic grant.

REFERENCES

[1] Albert Bandura. 1990. Selective Activation and Disengagement of Moral Control. *Journal of social issues* 46, 1 (1990), 27–46.
[2] Todd Bentley, Lorraine Johnston, and Karola von Baggo. 2005. Evaluation Using Cued-Recall Debrief to Elicit Information about a User's Affective Experiences. In *Proceedings of the 17th Australia Conference on Computer-Human Interaction: Citizens Online: Considerations for Today and the Future* (Canberra, Australia) *(OZCHI '05)*. Computer-Human Interaction Special Interest Group (CHISIG) of Australia, Narrabundah, AUS, 1–10.
[3] BioWare. 2007. *Mass Effect.* Game [Xbox360, PC, PS3]. Microsoft Games Studios, Redmond, Washington, US and Electronic Arts, Redwood City, CA, United States.
[4] BioWare. 2010. *Mass Effect 2.* Game [Windows]. Electronic Arts, Redwood City, CA, United States.
[5] Andy Boyan, Matthew Grizzard, and Nicholas Bowman. 2015. A massively moral game? Mass Effect as a case study to understand the influence of players' moral intuitions on adherence to hero or antihero play styles. *Journal of Gaming & Virtual Worlds* 7 (03 2015), 41–57. https://doi.org/10.1386/jgvw.7.1.41_1
[6] Virginia Braun and Victoria Clarke. 2006. Using thematic analysis in psychology. *Qualitative Research in Psychology* 3, 2 (2006), 77–101. https://doi.org/10.1191/1478088706qp063oa
[7] Virginia Braun and Victoria Clarke. 2019. Reflecting on reflexive thematic analysis. *Qualitative Research in Sport, Exercise and Health* 11, 4 (2019), 589–597. https://doi.org/10.1080/2159676X.2019.1628806
[8] Virginia Braun and Victoria Clarke. 2020. One size fits all? What counts as quality practice in (reflexive) thematic analysis? *Qualitative Research in Psychology* 0, 0 (2020), 1–25. https://doi.org/10.1080/14780887.2020.1769238
[9] Virginia Braun, Victoria Clarke, Nikki Hayfield, and Gareth Terry. 2019. *Thematic Analysis.* Springer Singapore, Singapore, 843–860. https://doi.org/10.1007/978-981-10-5251-4_103
[10] Virginia Braun and Clarke Victoria. 2021. *Thematic Analysis A Practical Guide.* SAGE Publications Ltd, 2455 Teller Road, Thousand Oaks, CA 91320.
[11] David Byrne. 2021. A worked example of Braun and Clarke's approach to reflexive thematic analysis. *Quality & Quantity* - (2021), 1–22.
[12] Jaeyong Chung and Henry J. Gardner. 2012. Temporal Presence Variation in Immersive Computer Games. *International Journal of Human–Computer Interaction* 28, 8 (2012), 511–529. https://doi.org/10.1080/10447318.2011.627298
[13] Anna Dechering and Sander Bakkes. 2018. Moral Engagement in Interactive Narrative Games: An Exploratory Study on Ethical Agency in the Walking Dead and Life is Strange. In *Proceedings of the 13th International Conference on the Foundations of Digital Games* (Malmö, Sweden) *(FDG '18)*. Association for Computing Machinery, New York, NY, USA, Article 23, 10 pages. https://doi.org/10.1145/3235765.3235779
[14] Dontnod Entertainment & Deck Nine. 2015. *Life is Strange.* Game [Xbox One, PS4, PS3, Microsoft Windows, iOS, Android, MacOS, Linux]. Dontnod Entertainment, Paris, France & Deck Nine, Boulder, Colorado, US.
[15] Quantic Dream. 2010. *Heavy Rain.* Game [Playstation 3]. Sony Interactive Entertainment, San Mateo, CA, United States.
[16] A. R. Galloway. 2004. Social Realism in Gaming. http://gamestudies.org/0401/galloway/. Accessed: 2021-09-06.
[17] Matthew Grizzard, Ron Tamborini, Robert J. Lewis, Lu Wang, and Sujay Prabhu. 2014. Being Bad in a Video Game Can Make Us Morally Sensitive. *Cyberpsychology, behavior and social networking* 17, 8 (2014), 499–504.
[18] J. Haidt and J. Graham. 2007. When Morality Opposes Justice: Conservatives Have Moral Intuitions that Liberals may not Recognize. *Social Justice Research* 20 (2007), 98–116.
[19] Jonathan Haidt and Craig Joseph. 2008. The Moral Mind: How Five Sets of Innate Intuitions Guide the Development of Many Culture-Specific Virtues, and Perhaps Even Modules. *The Innate Mind, Volume 3, Foundations and the Future* 3 (04 2008). https://doi.org/10.1093/acprof:oso/9780195332834.003.0019
[20] Tilo Hartmann, Erhan Toz, and Marvin Brandon. 2010. Just a Game? Unjustified Virtual Violence Produces Guilt in Empathetic Players. *Media psychology* 13, 4 (2010), 339–363.
[21] Tilo Hartmann and Peter Vorderer. 2010. It's Okay to Shoot a Character: Moral Disengagement in Violent Video Games. *Journal of communication* 60, 1 (2010), 94–119.
[22] Andrea S. Heberlein and Ralph Adolphs. 2004. Impaired spontaneous anthropomorphizing despite intact perception and social knowledge. *Proceedings of the National Academy of Sciences* 101, 19 (2004), 7487–7491. https://doi.org/10.1073/pnas.0308220101
[23] Elisabeth Holl, Steve Bernard, and André Melzer. 2020. Moral decision-making in video games: A focus group study on player perceptions. *Human behavior and emerging technologies* 2, 3 (2020), 278–287.
[24] J. Huizinga. 1998. *Homo Ludens.* Routledge, London.
[25] Sven Joeckel, Nicholas David Bowman, and Leyla Dogruel. 2012. Gut or Game? The Influence of Moral Intuitions on Decisions in Video Games. *Media psychology* 15, 4 (2012), 460–485.
[26] Sven Joeckel, Nicholas D. Bowman, and Leyla Dogruel. 2013. The Influence of Adolescents' Moral Salience on Actions and Entertainment Experience in

Interactive Media. *Journal of children and media* 7, 4 (2013), 480–506.
[27] Jesper Juul. 2011. *Half-real: Video games between real rules and fictional worlds.* MIT press, One Broadway, 12th Floor, Cambridge, MA 02142.
[28] Christoph Klimmt, Hannah Schmid, Andreas Nosper, Tilo Hartmann, and Peter Vorderer. 2006. How players manage moral concerns to make video game violence enjoyable. *Communications; Communications* 31, 3 (2006), 309–328.
[29] Marina Krcmar and Drew P. Cingel. 2016. Moral Foundations Theory and Moral Reasoning in Video Game Play: Using Real-Life Morality in a Game Context. *Journal of broadcasting & electronic media* 60, 1 (2016), 87–103.
[30] Tim May, Beth Perry, et al. 2014. *Reflexivity and the practice of qualitative research.* Vol. 109. Sage Los Angeles, 2455 Teller Road, Thousand Oaks, CA 91320.
[31] James H. McGrath. 1990. Review of Moral Dilemmas., by C. W. Gowans. *Noûs* 24, 2 (1990), 360–363.
[32] Metacritic. 2018. Detroit: Become Human - PlayStation 4. https://www.metacritic.com/game/playstation-4/detroit-become-human. Accessed: 2021-08-08.
[33] Alex Mitchell and Kevin McGee. 2012. The Paradox of Rereading in Hypertext Fiction. In *Proceedings of the 23rd ACM Conference on Hypertext and Social Media* (Milwaukee, Wisconsin, USA) *(HT '12)*. Association for Computing Machinery, New York, NY, USA, 103–112. https://doi.org/10.1145/2309996.2310014
[34] India Morrison and Tom Ziemke. 2005. Empathy with Computer Game Characters: A Cognitive Neuroscience Perspective. *Virtual Social Agents* - (01 2005).
[35] John T Murray. 2018. *Telltale Hearts: Encoding Cinematic Choice-based Adventure Games.* Ph.D. Dissertation. University of California, Santa Cruz.
[36] Lorelli S. Nowell, Jill M. Norris, Deborah E. White, and Nancy J. Moules. 2017. Thematic Analysis: Striving to Meet the Trustworthiness Criteria. *International Journal of Qualitative Methods* 16, 1 (2017), 1609406917733847. https://doi.org/10.1177/1609406917733847
[37] Reyhan Pradantyo, Max V. Birk, and Scott Bateman. 2021. How the Visual Design of Video Game Antagonists Affects Perception of Morality. *Frontiers in Computer Science* 3 (2021), 17. https://doi.org/10.3389/fcomp.2021.531713
[38] Quantic Dream. 2018. *Detroit: Become Human.* Game [PS4]. Quantic Dream, Paris, France. Last played July 2021.
[39] Miguel Sicart. 2009. *The ethics of computer games.* MIT Press, Cambridge, Mass. [u.a.].
[40] Miguel Sicart. 2013. *Beyond choices : the design of ethical gameplay.* MIT Press, Cambridge, Massachusetts.
[41] Toby Smethurst and Stef Craps. 2015. Playing with Trauma: Interreactivity, Empathy, and Complicity in The Walking Dead Video Game. *Games and culture* 10, 3 (2015), 269–290.
[42] Bethesda Games Studios. 2011. *Skyrim.* Game [Microsoft Windows, PS3, Xbox360, PS4 XboxOne, Nintendo Switch, PS5, Xbox Series X/S]. Bethesda Games Studios, Rockville, Maryland, US.
[43] Ron Tamborini. 2011. Moral Intuition and Media Entertainment. *Journal of Media Psychology: Theories, Methods, and Applications* 23 (01 2011), 39–45. https://doi.org/10.1027/1864-1105/a000031
[44] Ron Tamborini, Nicholas D. Bowman, Sujay Prabhu, Lindsay Hahn, Brian Klebig, Clare Grall, and Eric Novotny. 2018. The effect of moral intuitions on decisions in video game play: The impact of chronic and temporary intuition accessibility. *New media & society* 20, 2 (2018), 564–580.
[45] Ron Tamborini, Allison Eden, Nicholas David Bowman, Matthew Grizzard, and Kenneth A Lachlan. 2012. The influence of morality subcultures on the acceptance and appeal of violence. *Journal of Communication* 62, 1 (2012), 136–157.
[46] Telltale Games, Skybound Games. 2012. *The Walking Dead.* Game [Windows]. Telltale Games, San Rafael, CA, United States.
[47] Andrew J. Weaver and Nicky Lewis. 2012. Mirrored Morality: An Exploration of Moral Choice in Video Games. *Cyberpsychology, Behavior, and Social Networking* 15, 11 (2012), 610–614. https://doi.org/10.1089/cyber.2012.0235
[48] Nick Yee, Jeremy N. Bailenson, Mark Urbanek, Francis Chang, and Dan Merget. 2007. The Unbearable Likeness of Being Digital: The Persistence of Nonverbal Social Norms in Online Virtual Environments. *CyberPsychology & Behavior* 10, 1 (2007), 115–121. https://doi.org/10.1089/cpb.2006.9984
[49] José Pablo Zagal. 2009. Ethically Notable Videogames: Moral Dilemmas and Gameplay. *Proceedings of the Digital Interactive Games Research Association Conference (DiGRA)* - (2009).
[50] Dolf Zillmann. 2000. Basal morality in drama appreciation. *Moving images, culture, and the mind* - (2000), 53–63.