From Pixels to Feelings: Exploring Game Elements for Eliciting Empathy toward Refugees

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Abstract. Due to geopolitical and climate crises, the number of refugees is growing. Refugees face multiple challenges upon arrival, such as stigmas and negative perceptions. Studies show that evoking empathy can positively affect the host society's acceptance of refugees, and serious games can be a tool for this. By analyzing commercial games – the games themselves and their reviews, we found that game mechanics, such as decision-making with consequences and branching narratives, effectively fostered empathy. However, we also observed contrast empathy and signs of racism. These findings highlight the need for more research on the emotional impact of game mechanics.

Keywords: Empathy · Game Mechanics · Refugees · MDA Framework · Abductive Coding · Qualitative Analysis

1 Introduction

In recent years, games have evolved beyond entertainment, serving as tools to address real-world challenges [9]. They facilitate social skills, foster perspective-taking, highlight marginalized experiences, and promote empathy [19, 44, 42]. For instance, games have been utilized to foster empathy towards individuals impacted by war and violence [9], people living with HIV/AIDS [44], patients enduring chronic pain [39, 40], and those with invisible disabilities [42].

As we observe a global rise in refugee populations and accompanying challenges, we see that refugees are likely to encounter specific stigmas, negative perceptions, or mixed emotional reactions [5, 15]. In situations where this condition might cause the host society to ignore this group's viewpoints and marginalize them, fostering empathy becomes a potential solution [5, 9]. Empathy is the ability to perceive, understand, and respond to others' experiences and behaviors [36].

Studies have shown that evoking empathy can positively affect the host society's acceptance of refugees [37, 13, 26]. Serious games are effective in promoting

empathy for marginalized groups, offering a potential solution [37, 44], and there has been a surge in games designed to convey refugee experiences and foster empathy [43, 25]. In digital games, the interactive experience allows players to make consequential choices and experience a spectrum of emotions, mirroring real-life situations and connecting with diverse characters [12, 42, 22, 25]. Serious games, in particular, can address current issues and train users in social skills and prosocial behavior [19].

The MDA framework (Mechanics, Dynamics, Aesthetics) introduced by Hunicke et al. [21] can be used to analyze games and their mechanics, e.g., actions, algorithms, and controls available to players, ranging from simple elements like weapons and spawn points to complex systems like challenges and moral decisions. Game mechanics can foster empathy by creating emotionally engaging scenarios [23]. Schrier's study used the MDA framework to identify ten design principle categories in moral learning games [34]. Key elements include story-driven narratives, episodic moments, character storytelling, item collection, opinion comparison, problem-solving, and open-ended choices with consequences.[14, 34]. This research stresses accuracy and validity in game design, emphasizing the meticulous alignment of mechanics with intended goals [34].

Ma's study on "Paper, Please" [28] and "Pandemic" [7] using the MDA Framework and Ethical Implications Review highlights the ethical dimensions of these games[29]. Both games use mechanics and narratives to emphasize ethical gameplay and influence players' decision-making processes [29]. Also, Kors' research on "A Breathtaking Journey" used mixed reality to evoke empathy by simulating the refugee experience. The game, which engages with cultural narratives and allows player personalization, enhances emotional impact by inducing sensations like claustrophobia and emotions like fear and sadness. However, this game is only accessible to a small group. Therefore, we analyzed four widely accessible and commercially available games to see how they foster empathy and used abductive content analysis on the games' reviews to assess the impact on players' empathy [24]. We found that game mechanics effectively fostered empathy, such as decision-making with consequences and branching narratives. However, we also observed contrast empathy and signs of racism.

2   Game Analysis

To investigate how games can elicit empathy for refugees, one of the researchers played four games, which aim at fostering empathy towards refugees, and used the MDA framework [21] to analyze them. As a second step, we analyzed reviews for these games, which we report on in section 3.

2.1   Game Descriptions

Commercial games were chosen for this study due to their widespread accessibility, existing user base, and published player reviews on various platforms. To compile a list of games specifically delving into refugee narratives, searches were
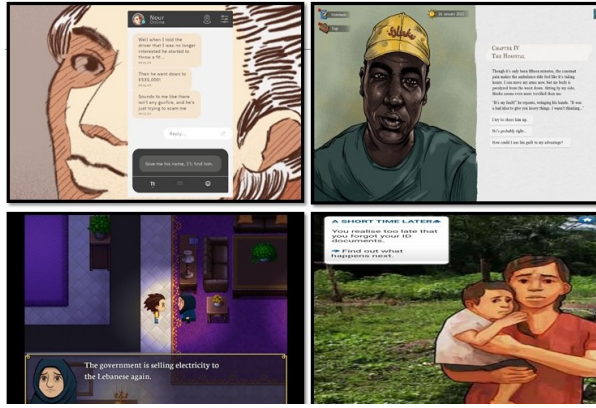
Fig. 1. Screenshot compilation of four games: Bury Me, My Love (top left), We. the Refugees: Ticket to Europe (top right), Path Out (bottom left), My Life as a Refugee (bottom right)

conducted on video game digital distribution platforms, including Steam [2], GOG [16], itch.io [1], Green Man Gaming [17], Microsoft Games [31], and Humblebundle [20]. Four games were identified (cf. Fig. 1): "'Bury Me, My Love" (BM)[38], "Path Out" (PO)[3], "We Refugees: Ticket to Europe" (TE)[4], and "My Life as a Refugee" (ML)[41] (cf. Fig. 1).

BM is an interactive narrative game centered around the journey of a Syrian refugee named Nour and her husband, Majd. Through text messages, players assume the role of Majd and make decisions that shape Nour's path to safety, influencing the story's progression and outcome. ML is a decision game. The three main characters are displaced and separated from their families due to the rebel attack on their village. From the beginning of the game, the player can select to play the character of a teenage boy, a pregnant woman, or a mother of a family. TE is a text-based role-playing game that follows a journalist's journey as he seeks to uncover the hardships faced by refugees traveling from Africa to Europe. PO immerses players in an interactive narrative adventure, placing them in the role of Abdullah, a young boy attempting to escape war-torn Syria and find refuge in a safer location. The game revolves around storytelling and player decision-making.

2.2 Findings

In the four games we analyzed (BM, ML, PO, and TE), we identified the following game mechanics and dynamics utilizing the framework proposed by Hunicke et al.[21] that can be used to evoke empathy:

Time Limitation: Implementing time limits in a game, whether through a visible countdown or resource constraints, effectively creates urgency and pressure for players [18, 35]. For example, in (TE and ML), players frequently face limited time to make tough decisions under challenging conditions.

Object Collection of Resources: Collecting and managing resources essential for progression and survival can evoke fear, urgency, and desperation [11, 9]. In PO, the player must collect money and fuel to escape Syria. Games like BM and TE also incorporate similar resource management mechanics.

Decisions with unclear consequences based on incomplete information: Requiring players to make decisions based on incomplete information with unclear consequences can evoke uncertainty and helplessness, leading to moral dilemmas [34]. For example, in BM, players' choices impact the story's direction and outcome, including Nour's safety and relationships. Games like TE and ML also feature similar decision-making mechanics.

Environmental Story Telling Pieces: Interacting with environmental elements enhances players' connection to the character and story. For example, BM uses a text-messaging interface for dialogue. Games like PO and TE also employ symbolic objects and references to historical events to deepen the narrative.

Limited Inventory Space: When inventory space is restricted, players must make difficult choices about what items to bring along. For example, in TE, players manage their inventory while collecting resources and navigating obstacles. This mechanics is also seen in BM.

Stealth Aspects: Stealth gameplay sections can evoke feelings of weakness and danger, as players must avoid detection without the ability to retaliate. For example, in TE, players navigate hostile environments stealthily to avoid authorities or hostile forces. It also adds depth and tension by highlighting the risks refugees face. This mechanics is also seen in BM and PO.

Sudden Changes in Atmosphere: Media often employs a technique where characters start in a familiar setting before abruptly changing due to a world event, emphasizing urgency and threat. For example, in BM, players experience sudden atmospheric shifts through text updates between Nour and Majd. TE and PO also employ this mechanic.

Map Size and Layout: Vast, ambiguous maps can lead to aimless wandering, triggering confusion and frustration. In PO, the expansive map enhances storytelling and player agency in the refugee journey. Similarly, BM uses text messages, and TE employs a notebook to emphasize uncertainty, deepen empathy, and highlight refugee challenges.

Effective Music: Music shapes the emotional landscape and atmosphere, enhancing narrative immersion and impact. In PO, abrupt music changes match environmental shifts, especially when Abdullah is fleeing. Similarly, BM and TE use musical cues to heighten emotions during fearful or critical moments.

Narrative: Narrative extends beyond the storyline, connecting game components and enhancing immersion through characters, settings, and events[8, 10]. In BM, players influence the story through text message exchanges, leading to multiple paths and endings. Similarly, TE involves players making choices as a journalist among refugees, impacting the story and character traits. Players navigate Abdullah's real-life escape in PO, with YouTube-style videos adding depth and authenticity.

3   Game Review Analysis

As a second step, we analyzed public reviews for the four games from the official distribution platforms: Steam (S), Greenmangaming (G), Itch.io (I), Metacritic (M), Play Store (P), and App Store (A).

3.1   Types of Empathy

Based on the literature, we decided to rely on the following definitions for the different types of empathy to analyze the reviews.

Cognitive Empathy refers to the ability to understand another person's emotions, thoughts, perspectives, or mental states without necessarily experiencing those feelings oneself [22]. *Affective Empathy* involves feeling the same or similar emotions as another person, often leading to intense and overwhelming emotional reactions to someone else's experiences. The player expresses emotions similar to those of the other person and uses emotive language that mirrors the other person's feelings [27]. *Reactive Empathy/Sympathy* entails tenderhearted feelings of compassionate concern and feeling "sorry for" the other. The player feels sorry for the other person [30]. *Somatic/Motor Empathy* includes a physical reaction to someone else's experiences. The player reports physical sensations in response to another's emotions and uses language that suggests physical reactions [32]. *Generative Empathy/Compassion* involves appreciating someone else's thoughts and feelings but moving towards action, which can be impactful and grows in others over time. The player desires or intends to take action based on understanding the other person's situation [22]. *Contrast Empathy* involves an observer experiencing a different emotional response to another person's emotion rather than mirroring it (e.g., an observer feeling pleasure at another's pain) [22].

3.2   Data Analysis

We extracted 243 reviews written in English until November 28, 2023, from six different commercial platforms (see Table 1). The reviews' text was qualitatively analyzed using directed content analysis in combination with abductive coding [24] to facilitate the identification of new patterns or themes within the data and enrich the comprehension of the user's perspective in the study.

The data were systematically structured and categorized in the organization phase utilizing MAXQDA [6]. After preparing the coding schema, two authors independently coded a subset of reviews. The schema was refined through discussions to address ambiguity and disagreements, to improve clarity. Following this, all reviews were coded.

3.3   Findings

The review analysis uncovered a broad spectrum of empathetic responses, detailed below. We identified 11 codes to analyze the data, covering all types of

Table 1. Number of reviews per platform and game

Game / Platform	Steam	Greenman-gaming	Itch.io	Metacritic	Play Store	App Store	*total*
Bury Me, My Love	1	1	2	7	189	9	209
Path Out			16				16
My Life as a Refugee						2	2
We. The Refugees: Ticket to Europe	6						6

empathy and various game mechanics. We found cognitive empathy (frequency $n = 34$), reactive empathy/sympathy ($n = 26$), affective empathy ($n = 11$), somatic/motor empathy ($n = 2$), generative empathy/compassion ($n = 4$), and contrast empathy ($n = 20$), as well as the mechanics narrative ($n = 71$), branching endings ($n = 33$), decision-making ($n = 29$), music ($n = 2$), and real-time messages ($n = 13$).

Cognitive Empathy: Many reviews highlighted cognitive empathy, noting increased awareness and insights into refugee conditions and a reminder of society's need for empathy. Players commonly referenced narrative elements like story and characters. Some instances of the branching narrative were observed, particularly in BM, as noted by one review: "*... every decision seem final, and the survival sense is on high alert always...*" [BM-PS162]. Additionally, both consequential choices and music were mentioned once within the same game.

Reactive Empathy/Sympathy: The review analysis showed that PO, BM, and ML evoked reactive empathy/sympathy. In PO, the narrative could evoke sympathy. In BM, consequential choices, branching narrative, and real-time text messages were most effective, as highlighted: "*The conversational format is vital; even though you never forget it's fiction, you find yourself cooking your dinner in between messages, wondering if Nour is going to be okay.*" [BM-PS171]. In ML, players mentioned feeling sympathy without specifying elements.

Affective Empathy: Few reviews mentioned this level of empathy, covering only two of the four games. Most reviews of BM highlighted the impact of mechanics like real-time text messages, branching narrative, story, and consequential choices in evoking emotions such as anxiety and worry. For example, one review noted, "*given how much time I spend texting my friends, following their life in instant messengers, this is incredibly immersive.*" [BM-PS13]. Another mentioned, "*I'm always a tiny bit anxious when Nour is "busy" for a period of time.*"[BM-PS102].

Somatic/motor Empathy: Somatic/motor empathy appeared in two reviews, one for BM and one for PO, both mentioning crying. For instance, "*How many games make you cry in the first few minutes? So far, just this one.*" [PO-I3]). The BM review discussed the story and characters, while no specific game elements were mentioned for PO.

Compassion: A few reviews for the games BM and PO revealed expressions of compassion from players. For example, some players expressed a desire to utilize

the games to teach empathy in educational settings: *"I am a junior high teacher in the U.S. I hope to use this game with my students to help them learn empathy as well as connect with more recent events in the world."* [PO-I8]. Furthermore, one review highlighted a commitment to support UNICEF, while another player offered to assist in localizing the game into Brazilian Portuguese. Most reviews about compassion did not mention specific game mechanics or elements.

Contrast Empathy: Some reviews criticized the games for being politicized, showing gender stereotypes, or displaying Islamophobia. Examples include a female character asking her husband for directions or a male character seeming cowardly. The games were also accused of spreading negative stereotypes about Islam and terrorism and promoting lawlessness, e.g., *"[...] Many refugees, most from Africa, want to cross illegally border. [...]"* [TE-S3]. Instances of racism were highlighted, with two players encountering racism in the game. One lost empathy for the main character, and another described the experience as "bitter." A review noted racism towards African people in BM: *"There is one moment where tapping 'be careful' results in "many Africans are thieves" which was a jarring experience to say the least."* [BM-PS152]. These incidents exemplify contrast empathy, where players responded negatively, often citing story and character issues.

Moreover, some reviews highlighted weaknesses in the games, particularly dissatisfaction with the branching narrative. Players found repetitive stages tedious when replaying for alternate endings. They suggested adding save points or redesigning the narrative to avoid repetition and improve the overall experience: *I'm not even asking for quick saves, just fast forwards or skip to the next reply."* [BM-S2]. Some players were dissatisfied with limited decision-making, feeling events weren't influenced by their choices. Reviews criticized the lack of autonomy, as players felt they were merely observing rather than participating: *"... I do think I should have more control over what Majd does because I'm playing his role"* [BM-AP1]. Limited choices and pre-determined responses led to boredom and frustration: *"It's quite boring when watching text comes out, but you can't do anything, you can't make any choices."* [BM-PS119].

4 Discussion

Our analysis reveals that the games utilized mechanics to evoke empathy among players, akin to those observed in other games in the field of moral learning [34] and empathy elicitation [29, 14]. Despite the challenges associated with eliciting high levels of empathy, particularly compassion and subsequent compassionate behaviors [22], the findings indicate that in a few cases, the investigated games could arouse the players' compassion, leading to actions such as charitable donations. However, the reviews analyzed did not specify which game mechanics or elements caused compassion. Narrative-related mechanics, particularly branching narratives in games like BM and TE, elicited cognitive, affective, and reactive empathy. This mechanic is essential and utilized in other games to elicit empathetic responses [34, 29]. Many player reviews highlight this mechanic, noting

frequent replays to explore different outcomes. However, some players found the branching narrative tedious due to repetitive stages. Decision-making with consequences under limited information was also highlighted as effective in evoking reactive and affective empathy, aligning with previous studies on moral thinking and empathy[34, 29].

Results showed some reviews evoked contrast empathy, with no empathy towards refugees and negative feelings, even labeling them as criminals. Additionally, players with similar nationalities or experiences felt misrepresented. A similar pattern has been observed in a study by Roussos and Dovidio [33], where engaging with a game intended to reduce prejudice against the impoverished failed to improve players' perceptions and led to beliefs that poverty is individually controllable. As Schrier [34] emphasizes, moral learning games must effectively convey their lessons. Bateman [8] also discusses how different belief systems can affect reactions to games; what evokes empathy in one person might inhibit it or trigger contrast empathy in another. To evoke empathy, a game must change the player's beliefs.

One limitation of this study is the unequal distribution of reviews across the analyzed games, with some games having more reviews than others (cf. Table 1). Additionally, some players mentioned their emotions without specifying the game mechanics that affected them. Player information, including background and gender, was also inaccessible. Future studies should investigate the emotions elicited by players and the specific game mechanics influencing them. This could help identify effective mechanisms, especially at higher levels of empathy. It would also be beneficial to examine how players' backgrounds affect empathy toward refugees, focusing on contrast empathy, to understand how individual characteristics influence empathetic responses in gaming.

5   Conclusion

Recent efforts focus on designing games to elicit empathy toward refugees, but an understanding of the specific mechanics used and their impacts remains limited. To address this, four games focusing on evoking empathy toward refugees were analyzed, along with their reviews. Results showed mechanics like time limitation and environmental storytelling were used, with decision-making and narrative-driven mechanisms being the most effective. The reviews indicated various empathetic responses, including cognitive empathy, compassion, and contrast empathy. Despite positive empathy outcomes, instances of contrasting empathy and racism were noted. These findings highlight the need for further research on game mechanics and their emotional impacts.

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