

# The Players' Experience of Immersion in Persuasive Games: A study of *My Life as a Refugee* and *PeaceMaker*

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## Abstract

*Game studies has seen an increasing interest in serious games with a persuasive goal. Yet, empirical research about the impact of these persuasive games is still limited. This paper aims to advance the field by reporting on an explorative, qualitative study, investigating player experiences in My Life as a Refugee and PeaceMaker, games that address pressing socio-political issues. Theoretically, our research was based on immersion theory and Calleja's account of player involvement. We conducted in-depth interviews with twelve participants. Our results showed that players experienced the two games in a similar way. With respect to immersion, our results highlight its different aspects by showing that the games' narratives had the largest impact on feeling immersed. Our participants also experienced ludic, affective, and spatial immersion, which partly deepened their narrative immersion. Finally, we found that perceived realism, narrative depth, and identification contributed to the immersive experience. The major contribution of this paper is showing that immersion heightened participants' susceptibility to persuasion within the gaming environment, while adding that the roles of emotion and identification in immersion warrant further research.*

**Keywords:** *Persuasive Games, Serious Games, Immersion, Involvement, Persuasion*

## 1. Introduction

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The field of serious games shows a rich diversity of genres and titles. Different types of games pursue different goals, for example, edugames and training games aim at transferring knowledge and skills, advergames have commercial goals and games for health intend to improve the player's lifestyle [1][2]. In this paper, we focus on 'persuasive games', that is, serious games that have the specific goal to persuade players. The term was introduced by Ian Bogost in his seminal volume *Persuasive Games* [3] wherein he focused on "procedural rhetoric" as the key feature of persuasive gaming. We build upon Bogost's notion but conceptualize persuasive games in a broader sense as digital games that were specifically designed to persuade people to adopt a particular point of view or take some action in the real world, regardless of the persuasive technique used [4][5][6]. Going beyond procedural rhetoric enables us to incorporate other persuasive dimensions, for example persuasion based upon the game's narrative or visuals [7][8]. Recent analyses of the content of persuasive games confirmed the importance of procedural rhetoric alongside persuasion based on linguistic and narrative aspects and, to a lesser extent, visual elements [9][10].

Our research is primarily concerned with those persuasive games that aim at any kind of social impact, for example with respect to a humanitarian crisis (*Darfur Is Dying*), child exploitation (*My Cotton Picking Life*), poverty (*Ayiti*), or the war on terror (*September the*



12<sup>th</sup>) (see also the Games for Change platform, [11]). The two cases discussed in this paper deal with the current difficult socio-political situation: *My Life as a Refugee* (2012) [12] about forced migration, was developed by the United Nations High Commissioner for Refugees (UNHCR). The goal of this single-player game is raising awareness of the tough experiences refugees worldwide have to go through. Players choose a character, who runs into difficult situations on his or her quest to reach safety. *PeaceMaker* (2007) [13] about the Israeli-Palestinian conflict, developed by ImpactGames. is also a single-player game, aiming to sensitize people worldwide about the Israeli-Palestinian conflict and to encourage informed discussions. Players choose the role of either an Israeli or Palestinian political leader and are supposed to react to in-game events to create a peaceful and stable resolution to the conflict. The question whether these persuasive games could succeed in realizing their goals is still open, as there are only a few publications available about the impact of persuasive games. On the one hand, there is reason for careful optimism, because previous research regarding our current case *PeaceMaker* showed that playing the game contributed to an increase in knowledge about the conflict [14][15][16]. Research about a few other persuasive games also resulted in positive effects on knowledge and, sometimes, attitudes [17][18][19]. On the other hand, it should be acknowledged that this research domain is very young and there are too few empirical studies to derive conclusions on the genre as a whole [20].

In this paper we follow Sicart, De La Hera, and Siriaraya and his colleagues who convincingly argued that the extent of persuasion can only be established by putting the player into focus [6][8] [21]. The experience of playing a persuasive game has been studied previously in different ways employing methods as diverse as psychophysiological measures [16] and self-reporting questionnaires [18][19]. We embraced a phenomenological approach [22] using interviews that included short rounds of play, because we wanted to stay as close as possible to playing in ordinary circumstances. Theoretically, we targeted our research at the players' experience of immersion, that is, to what extent they feel involved, or submerged in *My Life as a Refugee* and *PeaceMaker*. Immersion is a highly relevant concept in the context of persuasion because previous research indicated that increased immersion makes people more susceptible to the persuasive message [23]. Murray's (1997) [24] research of narrative structures in novels and films has been instrumental in this respect as she established that narratives with multiple contradictory alternatives required active participation of the audience resulting in them feeling to be part of the unfolding story. Research about digital entertainment games also showed that high immersion led to increased receptivity for the persuasive message [25]. There is, however, an important difference between entertainment games and persuasive games. The persuasive messages in entertainment games are usually placed in the background of the game (for example as ad-banners in sports games), whereas in persuasive games, the message and the game coincide. In other words, the persuasive message generally is the topic of the game.

These findings call for researching immersive experiences within the specific context of persuasive games. The present study aimed to answer two complementary research questions. We first wanted to know *if and to what extent players felt immersed in each of the two persuasive games*. Next, we invited them to reflect on their experience by asking *how they perceived the influence of their immersive experiences on their susceptibility towards persuasive messages embedded within the two games*. In other words, we asked them to assume the role of a critical reviewer. Twelve participants were interviewed about their (immersive) experiences while playing *My Life as a Refugee* and *PeaceMaker*. The transcripts were analyzed by using a qualitative, thematic analysis [26][27]. The interviews enabled us to draw conclusions about the immersion in both games, as well as about the players' ideas about to what extent each game succeeded in getting the persuasive message across. It should be noted that we did not measure the impact as such, because that would have required a different, experimental design of the study (see, e.g., [16]). Before we can present the results, we need to discuss the theoretical framework that backed our empirical research on immersion in persuasive gaming. We will do so in the next section.

## 2. *Immersion and Persuasion*

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In the context of playing digital games, immersion generally refers to the experience of 'being there', that is, to feel part of the game world rather than the real world [28][29][30]. Next to immersion, concepts like transportation and presence have been proposed to describe this experience of being deeply involved in games. In our own research, we preferred immersion to related concepts, because it is a meaningful experiential category that is well embedded in ordinary language. In other words, players often refer to 'being immersed' in the game, while it is rather unlikely that they will talk about 'being transported' or 'being present' in the game. In this section, we will present how we conceptualized immersion. Murray's pioneering work was an important building block for our argument. In addition, we incorporated other conceptualizations of immersion and related concepts. The theoretical framework concludes with Calleja's (2011) [31] Player Involvement Model because the model made it possible to differentiate between different sources for immersion in *My Life as a Refugee* and *PeaceMaker*.

In *Hamlet on the Holodeck* (1997), Murray [24] developed an important argument about immersion in interactive media. She describes the virtues of technology, namely "its power to appeal to the senses of vision and hearing with stunning immediacy" (p. 21). This user experience is generally based on being immersed in the narrative, much like it happened in traditional literary forms and film. Engaging with digital games and other kinds of interactive media, requires focusing cognitive resources on interacting with the virtual content. This results in a player experience of being surrounded by the virtual medium's reality, rather than by the physical reality of the actual surroundings. Due to this immersion, the media environment is perceived as more realistic, which contributes to enjoying what is offered on screen. Murray emphasizes that any medium can elicit immersive experiences through narratives, but interactive media generally intensify the effects.

The immersive power of narratives is also highlighted in Green and Brock's [32] influential transportation theory, which describes the experience of immersion using the related concept of transportation. Although their research is mostly concerned with readers being transported into a text, we use it as an element in our theoretical framework because of the close link between transportation and persuasion. The theory holds that the more transported readers feel into a narrative, the more persuasive it will be. This means, readers are more likely to change their attitudes in the direction of the ones expressed in the narrative. Green and Brock identify three processes through which narratives can influence and persuade people. The first one echoes Murray's conceptualization of immersion: transportation decreases the cognitive capacity to formulate counterarguments towards persuasion as feeling transported makes it easier to perceive the virtual narrative as real. Second, when the narrative becomes a personal experience, stronger and more enduring attitudes can emerge. Third, deep affections towards the narrative's protagonists, for instance through identification, can enhance the persuasive effect of transportation. Subsequent research on narratives supported the assumptions of transportation theory, in particular that attitude changes are mainly based on emotional responses that often correlate with identification [33][34], and reduced critical thinking [35]. Moreover, it was found that a narrative becomes more persuasive when readers or viewers perceive it as realistic [36].

Immersion (or transportation) in the context of digital games has been researched in a few studies that focused on digital entertainment games [28]. This emerging research tradition enables us to critically assess the level of immersion and to identify barriers. Previous research suggests that immersion is a gradual experiential phenomenon that increases over playing time [37][38]. There are also indications that some players feel more immersed than others, irrespective of what they play, without much evidence for extreme kinds of immersion, which may result in addiction [31][39][40]. Some factors were found

to reduce or block immersion. These barriers included, for example, game preferences, the ways in which the game was constructed and distracters in the environment [28][37].

The relation between immersion in a game and persuasion has been studied by Burrows and Blanton [25]. They have used transportation theory, finding that transportation into a virtual game made players more susceptible to persuasion by means of an in-game health message. They also established that if players did not feel very transported, they tended to be more alert, feeling similar like in the real world, which resulted in higher levels of unease and resistance towards persuasive messages. According to their findings, persuasive messages should be worked into the broader narrative of entertainment games or placed in the background, for example on billboards in sports or racing games, in order to enhance rather than disrupt potential immersive experiences during play. It is an open question whether this result can be generalized to persuasive games like *My Life as a Refugee* and *PeaceMaker* because in these cases, the message is impossible to ignore, because it defines the game and its gameplay.

In sum, we can safely conclude that both theory and previous empirical research indicate that immersion contributes to persuasion, although the number of studies is still small. We can also conclude that immersion has generally been linked to narrative without much attention to what other game features could enhance immersion. If we would exclusively focus on narrative, the implications for game design would be limited, running the risk of ignoring what makes a game into a game, that is, its ludic dimension. Therefore, we incorporated Calleja's [31] player involvement model that presents multiple dimensions in which players can get immersed in addition to the narrative dimension.

### 2.1 Involvement and Immersion

Calleja's player involvement model [31] is based on research about playing digital entertainment games, in particular MMORPGs. We acknowledge that playing a MMORPG is substantially different from playing a persuasive game, as the latter is almost always less complex and less time consuming. Nevertheless, from an analytic perspective, immersion in persuasive games may be based on similar principles as the ones identified in entertainment games. Calleja's contribution to better understanding the experience of immersion is to provide researchers with six involvement dimensions in which players can get immersed: the narrative, affective, ludic, spatial, kinesthetic, and shared dimension.

Narrative involvement is about the way players engage with the scripted story of a game as well as the personal narrative they create while playing a game. Affective involvement is concerned with various feelings players experience within a game. Ludic involvement mainly refers to formulating goals, decision-taking, and to the repercussions of the players' choices. Spatial involvement represents the location of a player within a game environment. Kinesthetic involvement refers to how players internalize the workings of the game controls and become fluid in (physically) handling the controls. Shared involvement describes the presence of other players' avatars or artificial- intelligence-controlled agents. The model posits that the more naturally involved players are in any one of the dimensions, the more likely it is that they feel incorporated in the virtual world of the game and dissociated from their physical surroundings.

In short, the different kinds of involvement contribute to experiencing immersion. How the involvement dimensions are related and whether one dimension is more important for immersion than others are empirical questions that are answered in this paper by interviewing players about their experiences. The interviews also provided the material to determine which involvement dimension(s) may heighten the players' susceptibility towards messages embedded within the persuasive game.

### 3. Methodology

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The knowledge about whether players of persuasive games experience immersion and how this is potentially related to being persuaded by the message of the game is rather scant. This paper aims to expand the knowledge of the research community by deliberately focusing on the players' perspective. We conducted semi-structured interviews with players to explore their first-hand experiences of immersion using a qualitative approach because that enabled us to investigate in-depth how our participants attributed meaning to the game and its message [41]. The inductive characteristic of a qualitative approach enabled also the exploration of meanings that went beyond existing explanations [42].

To recruit participants, we reached out to our wider personal network asking our friends and acquaintances to refer us to potential participants. Hence, selective sampling was combined with a snowball approach [43][44]. Past research about gaming experiences highlighted differences between female and male players and the relevance of how experienced the gamers were [45][46][47]. In this study, we balanced gender aiming at a wider range of findings than would possibly emerge by focusing solely on male or female players and we included both experienced gamers and people with little or no experience in gaming. Twelve participants from 5 different countries (5 from The Netherlands, 3 from Italy, 2 from Germany, and 1 each from Finland and Austria) between the ages of 23 and 30 (average age = 27) were interviewed. All participants were highly educated (1 PhD, 6 Master degrees, 4 Bachelor degrees, and 1 secondary degree). The group consisted of 7 men and 5 women. The male participants all felt experienced in entertainment gaming. Three of the female participants had little experience, while two stated to have no experience. Three (male) participants had some experience in playing persuasive games, with the rest of the group having none.

To research immersive experiences, players were asked to play the two games. In *My Life as a Refugee* (UNHCR) [12] the game play revolves around three main characters who were separated from their families. Players have to make decisions along the way in order to reach safety within the context of each character's story. How the journey develops and whether the character makes it to a safe place is dependent on the player's decisions. *PeaceMaker* (ImpactGames) [13] is a point-and-click strategy game in which players gain points by selecting balanced solutions to the conflict. During the game players are confronted with situations that turn bad and need an immediate response. Additionally, play is interrupted regularly by news clips confronting the player with authentic political developments in the region.

In order to cover the issues relevant to the research questions, we constructed a topic list, optimized through three test interviews. A few topics were general, asking for example 'Did you understand the story?' and 'How was your orientation within the game world?' others were more specific, for example 'Did you pursue a particular goal within the game?' and 'Did you feel restricted by the rules?' and 'In what ways did the visuals/images elicit emotions in you?' The test interviews were also used to determine the required length of playing the games, which was set at seven minutes. We chose this time span because *My Life as a Refugee* was completed in seven minutes. We wanted the same time for both games, also to avoid exhaustion by a lengthy play session. Seven minutes turned out to be enough to become seriously engaged with *PeaceMaker*. The interviews were conducted by one of us (MH) face to face and lasted between approximately 30 and 60 minutes depending on the participant's eloquency. Each participant played both persuasive games and was interviewed about each one right after playing it. Interviews during breaks in the gameplay action is a widely used method of gathering players' insights [48]. To avoid potential ordering effects such as desensitisation towards the topic of the second game which may lower the susceptibility to persuasion, half of the participants played *My Life as a Refugee* first, while the other half started with *PeaceMaker*. Before playing, participants were given a short questionnaire to register their knowledge and feelings about the topic of the game. The interviews were audio recorded and transcribed.

The stepwise approach of Braun and Clarke's [27] Thematic Analysis was used to answer the first research question about how players experienced immersion. The first step amounted to repeated close-reading of the transcripts to guarantee familiarisation with the data, which resulted in gaining some initial ideas about recurring themes. In the second step, all transcripts were coded by applying a code to fragments that were relevant in relation to the first research question. The third step was comparative: similarities and differences between codes were determined and similar codes were grouped as overarching themes. The fourth step was to review and refine all codes and themes. The codes were once more compared with the data in the transcripts to ascertain that they supported them, which highlights the value of thematic analysis for the study's validity. As a result, certain themes were then merged with other themes based on their similarity. In the final step each theme was reviewed and labelled to reflect its core meaning and to clearly differentiate it from the other themes. In the coding process, saturation occurred after coding the ninth interview, so including twelve interviews in the sample gives us confidence in our results.

Answering the second research question regarding the experienced influence of immersion on the persuasiveness of the games, required comparing the interviews as a whole. Boeije's [26] constant comparative approach (CCA) proved to be a suitable technique to discover patterns within individual interviews and subsequently compare these across interviews. More specifically, by applying the CCA, themes that emerged from the thematic analysis could be analysed in the context of what individual participants found persuasive and how they experienced the influence of immersion on their susceptibility to persuasion.

## 4. Results

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Before we present the analysis of the transcripts, we report the results of the short questionnaires. These provided some insight in what our participants knew about the issues addressed in *My Life as a Refugee* and *PeaceMaker* and how they felt about it. The answers showed that most participants felt quite knowledgeable about the refugee situation and empathetic towards refugees. The knowledge about the Israeli-Palestinian conflict ranged from very little to very well informed, while Israeli and Palestinian policies and actions were not generally supported. With respect to feelings, the participants were generally a bit more positive about the Palestinian side of the conflict.

### 4.1 Narrative Immersion

As the main element of both video games is the story, participants were first asked about the ways in which they felt immersed into the narrative. Most of the participants highlighted that the entry into the game, where they could choose a political leader in *PeaceMaker* (PM) and a character in *My Life as a Refugee* (MLR), immediately suggested the possibility to actively generate a story and create their own path within the game. *"The fact that you have a choice to take a position has an effect - so now, as the Israeli*

*President, what do I do now or how do I approach it*" (30/f/H: PM).<sup>1</sup> Putting themselves into the shoes of the character was considered as an important factor to feel immersed in the narrative by all participants, although not all of them did. In other words, for some players immersion was linked to identification with the game character. Two very experienced role-playing gamers talked about how they tried to focus on the characteristics and affordances of the characters when deciding how the story should continue. As one put it:

*"My choices for the two characters were different, based on the imagination of my character. So I was not acting as myself but trying to imagine that person (...) for example, the mother was carrying a little kid, so I decided to walk the main road, because I could never make it through the bushes"* (29/m/A: MLR).

For MLR two participants and for PM three participants explained that they identified with the character while still taking into account their personal background and experiences. *"I then feel like - ok I am the refugee now and the refugee has all my knowledge and he has all my experiences actually"* (25/f/A: MLR) or even stronger in the words of another female participant: *"Then I always thought it was me in that moment — because it always said You, although it was the other person of course, but I actually somehow thought in that moment that it was sort of me"* (25/f/L, MLR).

The interviewees who seemed to identify stronger based their decisions on what they would do in this situation - *"It's more how I responded to it"* (29/m/C: PM) - rather than acting according to the pre-scripted attributes of the characters.

Half of the participants playing PM noted that they found it difficult to identify with the character they were playing. They all referred to the distance between the political leader in the game and themselves, for example:

*"I am not a political leader myself and that is why it is simply hard for me to suddenly have the ability to do these things. And then I just could not relate 100%"* (25/f/L: PM).

Another female participant said that she did not feel well informed about the Palestinian side which made it difficult for her to judge how her actions would influence the story, which is why she refrained from taking any actions:

*"I think it was quite overwhelming, because I was like - I don't think I should be doing something like this, because I really don't know like what I should be doing (...) I didn't really dare to do anything like massive and critical because then like the consequences would have been like maybe totally crazy"* (23/f/J: PM).

This quote illustrates a more general pattern of participants explaining that they lacked knowledge and experience to imagine themselves in the role of an Israeli or Palestinian leader.

Another factor that two participants considered detrimental to narrative immersion was their association of the story with news. *"It's like I was watching the news or*

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<sup>1</sup> The coding (30/f/I: PM) means: age/gender/anonymous identifier of participant: the game they referred to (PM = PeaceMaker; MLR = My Life as a Refugee).

*something. But not like I could influence something (...) so it was more information for me than a game” (27/f/D: PM).*

About half of the players experienced how the depth of the story or the lack thereof influenced how immersed they felt within the narrative. For MLR, one interviewee pointed out that the game’s family setting was described well, a fact that helped her experience her character’s narrative as it would happen to her personally. In contrast, two other interviewees said that the story did not provide enough details about their character’s background as well as about the specific situations the characters found themselves in. As one put it:

*“It says your uncle is in the village - do you go there or do you go for the border? So that’s a very flat decision, or I don’t know my uncle in this case, or I don’t know what type of uncle or I don’t know anything about any background information, so it feels very flat, and so the decision feels flat or easy” (29/m/E: MLR).*

For these players immersion in the story felt superficial, as the story did not provide them with enough depth and nuance. In contrast, one participant felt that the absence of a detailed story context facilitated his narrative immersion:

*“The lack of context in fact, perhaps made it more general, not more unrealistic. It makes it easier to get involved, you don’t necessarily have to be very specific” (29/m/A; MLR)*

#### 4.2 Ludic Immersion

In PM, most players were figuring out how the rules worked throughout the whole gaming session. While some players thought consciously about the rules - what they should be doing -, three players with abundant playing experience said they approached them more intuitively.

*“You just go with your instinct actually (...). Then I got steered in that direction - oh let me help them, and then that works. So it really depends on your actions and what you do, and then you have to find out what else you can do to make it better” (27/m/F: PM).*

This quote suggests that some players can feel immersed within the ludic dimension by relying on their instincts, although they do not fully understand the rules.

The variety of ludic elements were regarded as somewhat limited by eight participants for MLR and by five for PM, as is illustrated in the following quotes:

*“There was a story about a boy that needs to go with the rebels, I chose that, because if he didn’t he was not sure of his life. Eventually, two years later he died - in combat, I was like, why could I not try to escape within those two years?” (27/m/G, MLR).*

*“Sometimes I expected that something would appear, for instance an event (...) basically that my people would have acted independently - but it did not, rather something always happened only due to my actions” (28/m/I, PM).*

In other words, the conventions of the pre-set game design made these players think critically about the game world. In contrast, four participants playing MLR internalised the rules quickly, this means they accepted them as they were rather than questioning them.

*“The first two times I briefly thought about it (...) why do they do it like that (...) but then I (...) just always played exactly like that and chose the options like they were, so I actually no longer thought about it” (25/f/L, MLR).*

Or even stronger in the words of this 27-year-old participant:

*“You are not restricted by the options because those are the only options you have at that point of your life as that person, so you either go back and you help them and then you have other options, or you leave them. It’s simple, so I didn’t feel restricted, because yeah, it’s just a hard decision you have to make” (27/m/F: MLR).*

The findings seemed to indicate that participants who internalised the rules experienced a deeper sense of ludic immersion than participants who distanced themselves critically from the rules.

The pursuit of one or several goals was another indicator of how participants experienced immersion within the ludic dimension. In PM, more than half of the players said that their goal was to create peace between Israel and Palestine, which corresponded to the game’s scripted goal. Moreover, four participants playing PM combined the narrative goal with the game goal: *“My goal of course was to increase the score, but of course that corresponds to you creating peace” (29/m/K, PM)*. Half of the participants pursued an overarching goal while playing MLR, which corresponded to their vision of the game’s goal, like escaping the refugee situation. The interviewees’ overarching goal provided meaning to the choices they made: *“Actually, in each situation I always thought about the big picture, about a greater goal” (25/f/L, MLR)*. Four players of MLR said they did not pursue an overarching goal, but made their choices in the spur of the moment. Two participants said that the clock counting down to evacuation made them even more aware of the urgency of their decision.

*“It was more just the survival in some way, because like as soon as the clock went ticking in the first question, ok like there is explosions going on, what do you do and I was ok, there was not really time to think like really further away, it was just like in that moment” (23/f/J, MLR).*

Another way in which players experienced immersion into the ludic dimension was how challenged they felt and how much control they had over the course of the story. Challenge was hereby mainly associated with the difficulty level of game play. Three players of PM said that they felt challenged by the game’s ludic complexity and that they felt more immersed as a consequence: *“The broad variety of tasks and mechanics, the game itself, it’s a challenge. And when I see a challenge in front of me, I go in problem-solving mode” (29/m/A: PM)*. For MLR none of the interviewees said they were challenged by the game play. Yet, three participants perceived the fact that they only had a limited amount of time to choose their option as an exciting feature: *“The time pressure (...) so to take very important decisions in a very short time” (25/f/L: MLR)*. The experience of feeling in control of one’s own actions mainly emerged in the context of players talking about the absence of feeling in control. In particular, this was the case with MLR, where five participants did not feel in real control over the game’s progress.

*“When I read the options for some aspects of the survival of the character and you know he would get into a bad situation, then you were like, you were not more immersed, but you say ok let’s see just what happens (...) you were already certain that the path for the refugee was already set to failure” (27/m/G: MLR).*

In the discussion of this theme the blurring boundaries between different involvement dimensions become particularly obvious for the two persuasive games. All actions players executed were inextricably linked to the pre-scripted narrative. This relates to the fact that in both games the narrative forms a major element. This means that it is unavoidable to take actions — to play — without influencing the narrative dimension.

### 4.3 Affective Immersion

Affective immersion refers to how participants experienced moods and feelings through engaging with the gaming environment. Several interviewees reported that they felt emotionally involved because of the actions they took. For MLR, three participants said that they felt agitated because they only had limited time to take their decisions. Three participants playing PM said they felt excited to be able to exert influence over the game world: *“Excitement and happiness that as a leader you have the opportunity to influence everything (...) and the readiness and desire to create something”* (25/f/L: PM). The ludic dimension did not only elicit positive emotions, though. About half of the players said they felt frustrated, powerless or experienced a kind of resignation because their actions were not successful.

*“The disappointment of having done apparently the most logical choice, but still losing, getting trapped. So, the sense of powerlessness”* (29/m/A: MLR).

Some participants felt affected by clear narrative elements: *“angry I was more like when they were forced to do certain things they do not want to do”* (27/m/G: MLR). A major aspect of the participants’ affective immersion stemmed from their interaction with the ludic and narrative dimensions. This finding underlines how much the different immersive dimensions overlap in both games.

Another factor contributing to affective immersion was the array of images and videos presented in the games, which referred to the real world. On the one hand, more than half of the participants said that they felt emotionally involved because these visuals represented real-life events: *“I mean you see a lot of images of fights and because they are real images and they relate to real life events that took place, in that way they are emotionally effective”* (29/m/E: PM).

On the other hand, two players said that the images and videos made them feel more like watching the news rather than playing a game, an association that inhibited their affective immersion: *“I guess we are all used to seeing those things like in the news and the movies and in television in general. So I don’t think it incited much emotion in me”* (23/f/J: PM).

### 4.4 Spatial Immersion

In Calleja’s (2011) [31] model, spatial involvement is concerned with the player’s location in the game environment. Among our participants, the spatial dimension turned out to be applicable to the game world as well as to the world outside the game. Some participants used space in a geographical sense when they talked about navigating through the game:

*“It was basically about how I as a refugee slowly move away from my home town or where I lived. So first, into the forest or the neighbouring village and then at some point over the border into a new country”* (25/f/L: MLR).

In PM, a map and the possibility to click on different cities facilitated spatial orientation according to five participants. With the help of the map, they could better locate where they were within the game world and where their actions were taking place. Other participants said they explicitly associated their spatial orientation in the game with what they knew from the real world. While this helped two players of MLR to orient themselves: *“If you read they want to cross the sea (...) then you know (...) they wanna go through the water and through Greece probably”* (27/m/G: MLR), two players of PM felt distracted because of their real-world associations: *“The map was not really very realistic (...) I was trying to understand what happened in Tel Aviv and Jerusalem, and it took me a bit to find where they were, while normally I know exactly where they are on the map.”* (29/m/A: PM). We

interpret this as an indication that spatial immersion in a persuasive game may be maximized when the representation of the geography is realistic.

#### 4.5 Influence of Immersion on Susceptibility to Persuasion

The relation between immersion and persuasion was most clearly experienced with respect to MLR. Half of the participants felt immersed at least in the narrative and ludic dimensions. The immersion was experienced as being put into the virtual game world, which often required adjusting an earlier point of view. As one interviewee poignantly put it:

*“As a matter of fact, it is more difficult to set up filters against it [the fate of a refugee] if you have to act as one (...) if you are proactively engaging into something you are thinking about it more intensively than if you are just shown a picture. If you are shown a picture you can just turn around. If you have to act like one of them, you have to simulate you are one of them, and then you are automatically touched by it” (29/m/A, MLR).*

But not every player experienced persuasion because of immersion. For two participants the influence of MLR was confined to the transference of factual knowledge about the refugees' situation, as they did not feel immersed. Two participants said MLR did not touch them at all, because they had not learned anything new. Still, the role of immersion was acknowledged, even among interviewees who did not feel persuaded or informed by MLR. In the words of a female participant:

*“If the game opens up the possibility to me to really feel on the flight, and to see what repercussions my choices have — I think through that you get a very different approach to the topic” (30/f/H: MLR).*

For PM, a majority of the participants felt they had played the game too shortly to experience much immersion. Nevertheless, about half of them noted that the game's messages were likely to be more persuasive if players would have felt more immersed. A player who experienced immersion also emphasized its positive influence on persuasiveness:

*“Well, immersion in this world of course had me take other decisions than if I had watched a report on television. And thereby I believe that immersion does have quite a strong effect. In particular when I see what consequences my own actions have” (28/m/I: PM).*

Yet, three players of PM said that while immersion may help, it did not feel as a major factor in the game's persuasiveness. They felt more persuaded by their critical engagement with the factual information in the game. One player also emphasized the importance of an analytical distance, because of the complexity of the topic. She said she preferred to play the game from a birds' eye view perspective:

*“I feel like God somehow [laughs] and the less powerful form is a President [laughs] I don't think that if something bad happens, it actually influences me. (...) I think this topic is much more complex, because you have to take decisions that go beyond you. (...) I think you could play two games: one where you try out everything, and another one where you try to do everything right. I think you can learn quite a lot” (25/f/B: PM).*

This quote also indicates a general pattern that players of PM learned something by actively elaborating on the game's content. Also, about half of the participants playing PM said that they mainly learned about the complex situation from the 'real' news pop-ups and

the background information included in the game, without feeling particularly immersed in its narrative or gameplay.

## 5. Discussion

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Persuasive games are considered as a potentially important platform for communicating commercial or non-commercial messages to large audiences. In this paper, we focused on the persuasiveness of two non-commercial games that are concerned with pressing socio-political issues: *My Life as a Refugee* (MLR) about the situation of refugees and *PeaceMaker* (PM) about the conflict in the Middle-East. We focused on immersion, because previous research showed that feeling immersed in media contributed to being susceptible for persuasion. Our first research question was whether our participants felt immersed in MLR and PM. The results of our qualitative interviews indeed showed that players experienced immersion. Their experiences could be aligned with Calleja's player involvement model with narrative and ludic immersion as the most prominent dimensions, although immersion was generally stronger in MLR than in PM. If it occurred affective immersion was related to narrative immersion. Spatial immersion was also experienced in both games and was particularly influenced by real world associations participants had with routes of refugees or geographical locations of cities in Israel/Palestine. Two participants mapped the game world in their imagination and felt like they had a good orientation in it, which deepened their feelings of being immersed.

In addition to narrative, ludic, affective and spatial immersion, the thematic analysis of the transcripts also resulted in the factors 'depth', 'realism', 'identification' and 'control' that in a way cut through Calleja's dimensions. We will discuss each factor in some detail.

The depth participants perceived in the storyline contributed to their level of immersion, in which 'depth' referred to more nuanced storylines, the availability of background information and the number of choices they could make. The majority of the participants, though, perceived the narrative and choices as either too limited (mainly for MLR) or too complex (mainly for PM) and felt less immersed consequently.

Perceived realism showed an interesting contrast. In both games, about half of the participants referred to the real world to describe the depth of their ludic and narrative immersion. The setting of the games in contemporary conflicts made most of these players feel more affectively immersed as they perceived it as real-life footage that brought realistic feelings to the game world. Two participants, however, associated the material with the news and said that this lowered their emotional connection to the game because of their habitual attitude towards news. Thus, associations players have with the real world and with news can have twofold effects on how immersed they feel. This result was partly in line with earlier findings that higher perceived realism resulted in a higher sense of immersion [36].

Identification with the characters contributed to immersion for half of the participants, even in cases where the participants perceived the character's actions as rather constrained by the game's script. The other participants felt more self-aware by contrast and based their decisions on their own perceptions and expectations of the game, rather than taking the pre-scripted attributes of the characters into account. These results are promising and relate to another recent study that also found a specific effect of identification [49]. Further investigation is warranted about what features of persuasive games contribute to identification, giving players the feeling that they stand in the shoes of the characters [50] [51].

Finally, the participants largely experienced that being in control of the unfolding story contributed to the intensity of ludic and narrative immersion, which conforms to the results of previous research [30][39]. Players who did not experience much control generally perceived the games' paths as pre-set and felt that their personal influence was limited. This finding could be interpreted in light of Murray's [24] observations that multiple mutually

contradictory storylines require a more active participation from audiences and thus lead to a greater sense of immersion.

Our second research question was about how our participants perceived the influence of immersion on their susceptibility to the persuasive message of the game. Their reflections during the interview on the game's persuasive properties generally resulted in the conclusion that they found the game's story and its affective elements persuasive. The major reason why participants were positive about the influence of immersion was that both games engaged them in experiencing events first-hand. This personal experience mostly stemmed from immersion into the narrative, ludic and affective dimensions. In MLR, this first-hand experience was intensified for participants who identified with their characters. These players generally felt more affected by the events than players who did not identify with the character, which was in line with previous results on the relation between identification and persuasion [32].

### 5.1 Limitations

This explorative study was based on qualitative interviews with twelve participants between 23 and 30 years of age. Our phenomenological approach aimed at an in-depth exploration of the complexities of immersion in this small group. We are aware that our insights cannot be generalized, although we are confident that some of our results could be tested in future survey- and laboratory studies. We deliberately chose to include actual playing of two persuasive games in the procedure, to make sure that the participants' observations about immersion and persuasion were based on their own, immediate playing experiences. The subtle differences between how our players appreciated MLR and PM warrant future studies about different titles, as each game may appeal in a different way to the dimensions of player involvement [29]. Research by Gerling and colleagues provides an interesting example of the possible role of kinesthetic involvement. Their game *Birthday Party* aims to change attitudes towards people with disabilities by playing with a specialized wheelchair-based controller, which had obvious consequences for how players experienced their own movement in the game [52].

The time our participants played the games was limited, which could be seen as a possible limitation of this study. While for MLR seven minutes sufficed to play the entire game, seven minutes playing PM was rather short. Although the test interviews showed that seven minutes was long enough for players to feel comfortable about sharing their experiences and ideas about both games, the actual interviews showed that some participants were still concerned with the complexities of PM by the end of the playing session. The results also showed that this did not interfere with the participants' experience of immersion, but it seems advisable to use a playing session of fifteen minutes in future research.

We did not find a systematic difference between male and female participants. We must acknowledge, however, that the seven male participants were more experienced gamers than our five female participants. This may have confounded the results in a way that did not become apparent in the thematic analysis. It seems advisable to address this issue in a future study with a larger sample.

The limitations of this explorative study are obvious, and it was not our aim to formulate design principles (see [6]), but still we can carefully draw some lessons for designing future persuasive games. Our study suggests that a convincing narrative is required for games dealing with current affairs, in particular a storyline that enables identification in gameplay. The game's story becomes more meaningful with anchors in the real world, but these links must be included in the game's progress to avoid distraction from the persuasive message. Our participants were particularly bothered by disruptive pop-ups and too much clicking in the game. As these kinds of barriers were also found in previous research, it seems advisable to avoid such hiccups while designing future persuasive games [28][38]. The current results also show that it is not a problem to present the persuasive message prominently. This seems to contradict Burrows and Blanton's [25] finding that

persuasive elements should be placed in the background of the game to be effective, but we are confident this contrast stems from the difference between entertainment games and serious games with a persuasive aim. In the latter case, processing the persuasive message does not necessarily impair the pleasure of playing.

## 6. Conclusion

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In general, the participants felt that immersion was an important factor in the persuasiveness of MLR, with a majority being reinforced in their already positive attitudes towards refugees. Immersion may be especially important for persuasive games such as MLR that primarily aim to transmit individual experiences and emotions to achieve their goal, as immersion creates more profound personal experiences and stronger emotions. Our results confirm what was found previously with respect to the importance of emotions for immersion, or transportation [33][34]. The PM results showed that in addition to immersion, engagement with the game's contents on a more analytical level was also beneficial to PM's persuasiveness. This finding supports elaboration-based explanations for persuasive effects, which posit that to a certain extent attitude changes result from logical thinking and critical evaluations of arguments [18][53]. In our results, it was interesting to see how a ludic element, that is, the clock counting down in MLR, resulted in elaboration, leading the players into thought.

Theoretically, the results of this study were generally in line with previous research, in particular with Murray's [24] insights about the relation between narratives and immersion in interactive media and Calleja's [31] model of player involvement. Our empirical contribution to the field lies in showing that players indeed felt immersed in these kinds of persuasive games and experienced the games' message as persuasive. Although we did not compare playing a game to other kinds of media exposure, the results with respect to the combination of different dimensions of immersion underline the unique contribution of serious games to persuasive endeavors. The current study also helps to advance the field by inviting more focus in future research on the role of emotion (or the affective dimension) in immersion. Our results also indicate that identification plays an important role in immersion. Future research is needed to find out whether identification is part of the narrative dimension or requires a separate position in conceptualizing immersion in persuasive gaming. A player involvement model with dimensions specifically based on experiences in persuasive gaming would help players, researchers and game developers to develop a common vocabulary and thus learn from each other and help improve persuasive games.

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