First Person vs. Third Person Perspective in Digital Games: Do Player Preferences Affect Immersion?

Alena Denisova
Department of Computer Science
University of York
York, YO10 5GH, UK
ad595@york.ac.uk

Paul Cairns
Department of Computer Science
University of York
York, YO10 5GH, UK
paul.cairns@york.ac.uk

ABSTRACT
Contemporary digital game developers offer a variety of games for the diverse tastes of their customers. Although the gaming experience often depends on one's preferences, the same may not apply to the level of their immersion. It has been argued whether the player perspective can influence the level of player's involvement with the game. The aim of this study was to research whether interacting with a game in first person perspective is more immersive than playing in the third person point of view (POV). The set up to test the theory involved participants playing a role-playing game in either mode, naming their preferred perspective, and subjectively evaluating their immersive experience. The results showed that people were more immersed in the game play when viewing the game world through the eyes of the character, regardless of their preferred perspectives.

Author Keywords
Digital games; Immersion; Player experience; Player perspective; Camera point of view.

ACM Classification Keywords
H.5.m. Information Interfaces and Presentation (e.g. HCI): Miscellaneous

INTRODUCTION
Nowadays digital games companies offer a wide range of genres, complexities, and formats of games for the diverse tastes of their players. Due to the existing variety, competitive game designers and developers are concerned with what makes a good game, and the research in the area of player experience (PX) plays a major role in these decisions.

One of the terms used to describe PX is immersion – a state of complete involvement with a digital game [2]. It has consistently proved itself to be an important element of the experience players seek from digital games. Immersion has often been used interchangeably with the term presence [14] – a physical sensation of complete submersion in a digital medium [11]. However, this comparison may not be entirely accurate, as suggested by Cairns et al. [3] – unlike presence, immersion is an all-inclusive experience, which is not fully dependent on only physical dimensions of technology.

Certain components could make a game less or more attractive to its player: graphics, sounds, music, novelty, storyline, challenge, advancements, and others [6]. One of the important components that make a game interactive is the POV by which the player interacts with the game environment. Traditional digital games typically have only one POV through which the player can observe their character and the game environment. However, an increasing number of games allow for a user to switch between perspectives, e.g. between the first person and third person POV. Such choice provides many benefits over the conventional single perspective, however it is argued whether one of these POVs is better at immersing participants in the digital world than the other [13].

This paper sets out to investigate whether playing in first person perspective is more immersive than the third person POV, and whether players' personal preferences in terms of the camera POVs they typically choose have an effect on this.

BACKGROUND
Player perspective is one of the important design choices made when creating a digital game. Traditional camera options include audience, isometric, bird's eye, trailing camera, third person and first person POVs [10]. These views support distinctive experiences of immersion for video game play and different perception of the game space. Many contemporary games are designed such that the player, depending on a situation or personal preferences, can choose a perspective.

It could be suggested that the same game can create different experiences depending on the viewpoint through which the player sees the game world. First person POV allows the player to perceive the game through the eyes of the character, observing the world around them up close, giving a clear view of the scenery in front of them. This perspective is believed to provide the most immersive feel for the player [4, 16].

Alternatively, a third person POV allows the player to observe the main character in action, without giving the player the sense that they actually are the character. Although such camera positioning gives a wider field of view of the surrounding area, it makes it hard for the avatar to accurately gauge its focus of interest [4]. A character's visual focus point is particularly important in games where the player needs to know exactly where to aim, and be able to finely adjust the aim.

Permission to make digital or hard copies of all or part of this work for personal or classroom use is granted without fee provided that copies are not made or distributed for profit or commercial advantage and that copies bear this notice and the full citation on the first page. Copyrights for components of this work owned by others than ACM must be honored. Abstracting with credit is permitted. To copy otherwise, or republish, to post on servers or to redistribute to lists, requires prior specific permission and/or a fee. Request permissions from permissions@acm.org.
CHI 2015, April 18–23, 2015, Seoul, Republic of Korea.
Copyright is held by the owner/author(s). Publication rights licensed to ACM.
ACM 978-1-4503-3145-6/15/04 ...$15.00.
http://dx.doi.org/10.1145/2702123.2702256

Many contemporary digital games are offering an option to choose between first and third person POV to compensate for the drawbacks of each of the viewpoints. Often, third person perspective is used for exploration and interaction, and first person POV is useful when projective accuracy is required [16]. However, this preference has been the subject of discussion on social networks, and gaming forums and magazines for years [9, 17] – the first and third person perspectives are often argued about, whether either of them makes a player feel more immersed in a game than the other one. In previous work these perspectives were compared with regards to the sense of presence in a digital environment [15], establishing that the greater sense of ownership provided by the first person POV leads to higher presence. While there has been no evidence behind the claims that first person POV leads to higher immersion, it is often assumed that it does, both in the academic literature [4, 12], and anecdotally [9].

This question was addressed by Rouse [13], who argues that third person perspective distances the player from the game world and the character they are playing. Hence, the sense of immersion appears to be significantly reduced. According to Gard [7], one of the greatest appeals of digital games is that they allow the player to feel in control, and to see the consequences of one's own actions instead of the actions chosen by the protagonist. Immersing the player in the game world as much as possible is crucial to this 'ownership' of choices made in the game world [13].

Due to the lack of evidence behind the claims of Rouse [13] and Taylor [16], the aim of this paper is to address this question by measuring and comparing immersion in two groups of participants playing the same role-playing game either in first or third person perspectives while also factoring in their pre-existing preferences for a particular perspective.

STUDY DESIGN

The experimental manipulation was the perspective in which players played the chosen game – in first person or third person POV. The players' preference for a particular perspective was a pseudo-independent variable. The dependent variable was immersion which was measured using the IEQ [8], a 31 item questionnaire with five-point Likert scale items. As well as providing an overall measure of immersion, it can be analysed into five factors of cognitive involvement, emotional involvement, real world dissociation, challenge, and control.

Based on a pilot study giving an estimate of moderate effect size ($d = 0.65$), a sample of 40 participants was recruited (7 women and 33 men) with varying levels of gaming experience. The age range of the participants was between 18 and 41 years, with a mean age of 23.5 ($\sigma = 4.97$). Most participants played several times a week and also played for more than an hour when they did play.

Most participants (26 out of 40) had previous experience of playing video games on a PlayStation 3 (PS3), and were familiar with the controllers. Furthermore, over a half of the volunteers (23 out of 40) claimed that they had played the chosen game on a PC, but none of the total number of 40 volunteers had any experience of playing this game on this particular console.

The game

For ecological validity, the study took place in a living room like environment, similar to a place typically used to play video games. The game used in the experiment was Skyrim [1], a role-playing game (RPG) with a possibility to switch between first and third person POV. The option for changing between the perspectives was disabled manually. It was played on the PS3, a platform that none of the participants had used to play this game. Difficulty level was adjusted to be suitable to the experience of the player.

Following the main storyline of the game, the objective set for the participants was to complete (at least partially) 'The Golden Claw Quest' – one of the very first missions in the game. The quest was easy enough for a novice player to complete, but it was also one of the missions not many experienced players could remember due to its early appearance in the game. The quest also required players to engage in the typical RPG activities including travelling throughout the dungeon, thus giving a good opportunity for immersion and for the perspective to be relevant. The weapons used in the game were also fixed to be a sword and a shield, which are both powerful and equally usable in both first and third person perspectives.

Procedure

Before the start of the experiment, each participant was allocated randomly to one of the two experimental conditions, with 20 people in each. In the beginning each participant had a small tutorial, during which they had an opportunity to familiarise themselves with the controllers. Each tutorial session was set in the same POV as the one participants played in during the main part of the experiment. All participants had the same set of instructions of how to navigate the game with the PS3 controller if they had never used it before.

The players were then left to complete the quest in the game. Regardless of how far from completion participants were, they were interrupted after 15 minutes of playing the game. Once the participant was interrupted, he or she was asked to fill out the IEQ, and then the demographics questionnaire. After that, each participant was asked about their preferred perspectives, and then fully debriefed.

Results

Overall, the hypothesis was supported by the results – participants who played the game in first person POV had higher levels of total immersion ($\overline{X}_1$ = 117.25, σ = 13.28) than those who watched their character from behind ($\overline{X}_3$ = 107.10, σ = 11.69). The difference in the results was significant ($t(38) = 2.57, p = 0.014$), with a large effect size – Cohen's $d = 0.79$.

Though preferences were not explicitly controlled, each group of participants had an almost equal split of people who preferred one of these two perspectives over the other. Out of 20 participants playing in first person perspective there were

	Played in First Person				Played in Third Person			
	Prefers First Person		Prefers Third Person		Prefers First Person		Prefers Third Person	
	Mean	Std. Dev.	Mean	Std. Dev.	Mean	Std. Dev.	Mean	Std. Dev.
Total Immersion	117.25	9.63	116.82	16.14	98.00	14.00	112.00	6.63
Cognitive Involvement	37.56	2.40	38.09	5.56	31.86	6.18	34.69	4.13
Emotional Involvement	20.78	3.99	20.36	5.78	17.43	5.44	21.00	3.03
Real World Dissociation	25.78	2.86	25.36	3.35	21.71	3.04	24.46	2.22
Challenge	14.44	1.01	14.91	1.22	10.71	2.56	14.00	1.15
Control	19.22	2.82	18.09	3.53	16.29	2.43	17.85	2.23

Table 1. Total immersion and its components when playing in 1st and 3rd person POV, depending on the preferences of the player.

9 who preferred this POV, and 7 who preferred first person perspective in the third person condition.

A two-way ANOVA showed that the difference between immersion scores in first and third person perspectives was significant ($F(1,36) = 10.22, p = 0.003, \eta^2_{\text{partial}} = 0.221$). However, the effect of players' preferences was marginally significant ($F(1,36) = 2.87, p = 0.099, \eta^2_{\text{partial}} = 0.074$), while the interaction between these two factors was approaching significance ($F(1,36) = 3.78, p = 0.060$), with a small effect size, η^2_{partial} = 0.095 (Figure 1).

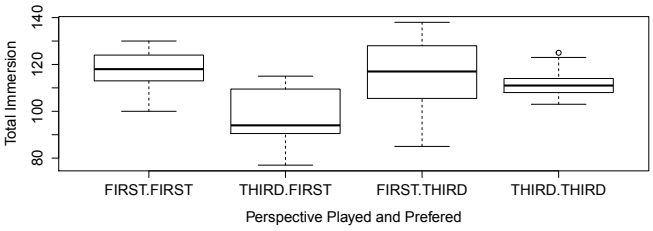


Figure 1. Total immersion depending on the preferred perspectives (right label) and the played perspectives (left label).

In terms of immersion components, significantly different results were found for the real world dissociation, challenge and cognitive involvement of participants. Significance was found in the main effect for real world dissociation ($F(1,36) = 7.19, p = 0.011, \eta^2_{\text{partial}} = 0.166$), but not in the effect of players' preferences in camera POV ($F(1,36) = 1,59, p = 0.216, \eta^2_{\text{partial}} = 0.042$) nor in the interaction of these factors ($F(1,36) = 2.91, p = 0.096, \eta^2_{\text{partial}} = 0.075$).

The difference between the cognitive involvement scores of those who played in first or third person POV was also highly significant ($F(1,36) = 8.96, p = 0.005, \eta^2_{\text{partial}} = 0.199$). While in terms of the POV preferences, there was no significant difference found between the two groups of players ($F(1,36) = 1.23, p = 0.275, \eta^2_{\text{partial}} = 0.033$), nor the interaction of these two factors ($F(1,36) = 0.57, p = 0.454, \eta^2_{\text{partial}} = 0.016$).

The challenge scores were on par with the results for the total immersion: the main effect was highly significant ($F(1,36) = 23.38, p<0.001, \eta^2_{\text{partial}} = 0.394$), as was the effect of the preferred perspectives in games ($F(1,36) = 15.28, p<0.001, \eta^2_{\text{partial}} = 0.298$). The interaction of these two factors on challenge was also highly significant ($F(1,36) = 8.65, p = 0.006, \eta^2_{\text{partial}} = 0.194$).

Though there was no significance in the main effect, the effect of preferred perspectives, and interaction effect for the emotional involvement and control components of immersion.

In case previous experience of the game was important, immersion was tested against differing levels of experience, but there was no significant difference. Similarly, the level of immersion of those familiar with PS3 controllers and those not did not differ significantly.

Discussion

Following the theoretical discussion in the background section, the results of this study confirmed that first person POV is more immersive than its third person counterpart when playing an RPG game offering this choice. This difference was also seen when preferences were taken into account, though there were indications of more modest effects due to perspective itself, and in interaction with the experimental manipulation. However, previous experience of either the game or the platform did not influence immersion, which suggests that the experiment is reliably reflecting the immersion felt more generally.

Further analysis of these results using the components of the IEQ showed that the main effect of the experimental manipulation was due to effect on real world dissociation, challenge and cognitive involvement. But differences in preference were only seen in the challenge component and no differences at all were seen in the emotional involvement and control aspects. This suggests that players were experiencing similar levels of control in all conditions of the game regardless of their preferences. This is a useful finding, as it is possible that the difference in perspectives from preferred would result in a reduced sense of control.

The main influence of the experimental manipulation was through real world dissociation and cognitive involvement. Following from the theoretical assumptions made by Rouse [13] and Taylor [16], it is not surprising that players' dissociation from the real world was much stronger in first person POV than in third person perspective. In an RPG game, such as Skyrim, in first person POV players feel as if they are a part of the story and the game environment; projecting their thoughts and actions onto their character and taking ownership of them – hence, reducing the distance between the game world and themselves. On the other hand, playing in third person POV distances the player from perceiving themselves as having direct action in the game world, as they watch their character perform actions and make decisions from the viewpoint of somebody who controls the avatar.

It is interesting that this same influence is seen in cognitive involvement. It suggests that the greater sense of being in the game represented by the world is accompanied by a greater cognitive engagement with the world. This might be because the first person POV somewhat restricts the players' ability to see their situation within the game, and hence leads to the greater sense of challenge and requires to be more cognitively engaged to overcome the restriction.

Additionally, challenge was also influenced by preference. This suggests that the preference has led to a certain style or expectation in play, making it easier for players who prefer the first person perspective when they are required to play in the third person POV. It may be that players who prefer the first person perspective do so, because of the greater challenge it presents, and whether or not it is the preferred POV, all players get more immersed because of how it situates them in the virtual world of the game. Indeed, it is widely believed that first person perspective is often chosen by more experienced gamers [17], particularly in shooting games [4], as it requires more skill and better reflexes. While third person POV allows for the easier navigation, and as a result is more suited for people who are less advanced in playing digital games.

It may be this particular aspect that explains why people who are more experienced in playing in first person perspective felt moderately challenged and cognitively involved with the game, while those players who preferred the other viewpoint had higher scores in both immersion components. This also explains why the lowest immersion scores were obtained by players who interacted with the game in third person POV, but normally prefer first person perspective.

Overall then, it seems that regardless of your preference, first person is more immersive, and indeed that if you prefer first person it is 'hard to go back.' This might be because the increased challenge is needed to bring about the greater immersive experience. Interestingly though this contrasts with one of the reasons for offering an option to switch between the camera viewpoints, which is to satisfy the preferences of any gamer, and so increase their involvement in the game. It may be that players perhaps make some progression from a third person perspective, which is less challenging, and therefore more engaging for those learning the game, to a first person perspective, as mastery is achieved because of the greater accuracy that can be attained in that perspective. Perhaps then, rather than offering players the opportunity to have one mode or the other, games could progress from one mode to the other in order to achieve the higher levels of immersion. However, if this results in too high a challenge, it could actually reduce immersion [5], so might be an adaptive element suited to how well players seem to cope with the different modes.

CONCLUSION AND FURTHER WORK

Immersion is one of the various gaming experiences that players believe to be very important when playing a game. This work shows that, as far as immersion is concerned, POV does influence immersion regardless of preferences. Of course gaming experience is much more multi-faceted, and it may be that with first person perspective there might be increased immersion, but at the cost of a reduction in other aspects, say social presence. This is something that requires more detailed investigation. Alongside this, it should be noted that the game chosen here is a particular style of game, and in others, such as racing or shooting games, alternative factors may dominate in the production of immersion and other gaming experiences. Further studies of this sort will reveal how generally important POV is for building up the gaming experience.

REFERENCES

1. Bethesda Game Studios. The Elder Scrolls V: Skyrim. www.elderscrolls.com/skyrim, (2011).
2. Brown, E., and Cairns, P. A grounded investigation of game immersion. In *CHI'04*, ACM (2004), 1297–1300.
3. Cairns, P., Cox, A., and Nordin, A. I. Immersion in digital games: a review of gaming experience research. *Handbook of digital games, MC Angelides and H. Agius, Eds. Wiley-Blackwell* (2014), 339–361.
4. Call, J., Voorhees, G. A., and Whitlock, K. *Guns, Grenades, and Grunts: First-person Shooter Games*, vol. 2. Bloomsbury Publishing USA, 2012.
5. Cox, A., Cairns, P., Shah, P., and Carroll, M. Not doing but thinking: the role of challenge in the gaming experience. In *CHI'12*, ACM (2012), 79–88.
6. Ermi, L., and Mäyrä, F. Power and control of games: children as the actors of game cultures. In *DIGRA Conf.* (2003).
7. Gard, T. Building character. *Gama Network: Gamasutra.com* (2000).
8. Jennett, C., Cox, A. L., Cairns, P., Dhoparee, S., Epps, A., Tijs, T., and Walton, A. Measuring and defining the experience of immersion in games. *International journal of human-computer studies 66*, 9 (2008), 641–661.
9. Kotaku Magazine. First or third person - what's your perspective? `goo.gl/LYlL2W`, Apr 2011.
10. Laramée, F. D. *Game design perspectives*. Cengage Learning, 2002.
11. Lombard, M., and Ditton, T. At the heart of it all: The concept of presence. *Journal of Computer-Mediated Communication 3*, 2 (1997).
12. McMahan, A. Immersion, engagement and presence. *The video game theory reader* (2003), 67–86.
13. Rouse III, R. What's your perspective? *ACM SIGGRAPH Computer Graphics 33*, 3 (1999), 9–12.
14. Ryan, R. M., Rigby, C. S., and Przybylski, A. The motivational pull of video games: A self-determination theory approach. *Motivation and emotion 30*, 4 (2006), 344–360.
15. Slater, M., Spanlang, B., Sanchez-Vives, M. V., and Blanke, O. First person experience of body transfer in virtual reality. *PloS one 5*, 5 (2010).
16. Taylor, L. N. *Video games: Perspective, point-of-view, and immersion*. PhD thesis, University of Florida, 2002.
17. Unity3d Forum. First person vs third person perspective. `goo.gl/m1c4c9`, Aug 2010.