An investigation of player to player character identification via personal pronouns

Michael Hitchens,
Department of Computing
Macquarie University
NSW 2109 Australia
+61 2 9580 9538
michael.hitchens@mq.edu.au

Anders Drachen,
Institute for Communication
Aalborg University
Aaalborg Denmark
+45 9940 7357
drachen@hum.aau.dk

Deborah Richards,
Department of Computing
Macquarie University
NSW 2109 Australia
+61 2 9580 9567
deborah.richards@mq.edu.au

ABSTRACT

The player character is an important feature of many games, where it is through the character that the player interacts with game world. There has been considerable interest in the relationship between the player and the player character. Much of this work has examined the identification of players with their characters, generally taking either a textual analysis approach, or has been empirical work that has explicitly identified the idea of identification through survey instruments, etc. The work presented here takes a different empirical approach, focusing on the use of various pronoun forms (first, second, third) as an indication of the relationship between player and character. Results indicate that the presence of story and information about the player character had no effect on identification with the plater character. However, characteristics of the players, particularly gender and general experience in playing video games, did have a statistically significant affect, indicating that different levels of identification are more dependent on the player than on the game. This indicates that players are not a homogeneous group with respect to player character identification and is an important consideration for designers to recognise.

Categories and Subject Descriptors

D. Software D.m MISCELLANEOUS Software psychology

General Terms

Human Factors.

Keywords

Player Character, Identification, Empirical Research, Video Games

1. INTRODUCTION

For a game to be a game the player must be able to act. The essence of a game is that there is game play, that the player is able to make choices and have those choices reflected in changes to the state of the game. For a player to able to have such an effect there must be some conduit between their choices and the world of the game, some means via which they take actions. In terms of the real world this means there must be input the player gives via various devices such as mouse, console controller, etc. In terms of the virtual world of the game there must be some representation of the player's actions and the means by which they occur within that world.

In many game genres the means by which a player interacts with the game world is the *player character*. This is similar to the situation in Human-Computer Interfaces (HCI) of mapping the users' "task language" to the computer's "core language" and the input/output states between them [7]. To clarify, in HCI we work with different "languages". The user has a language they understand and which they use to interpret outputs from the computer. The computer has a language - the core language - which it uses to process input and generate output. Depending on the interaction model, there can also be an input and an output language. Between each of these languages, the challenge is to translate so that both the user and the system understands what is going on. For example, the user needs to be able to formulate his or her intents in an input language, which the system can translate into a core language for the computer. In the context of games, we have a user who has to be able to comprehend the game state at all times through the games´ output. In this way you can say that the player character is both the input and the output language - it is through the character the user adds input to the system, and through the character that the user perceives the output calculated by the system. The user has to be able to perceive the system state at all times. From first person shooters (e.g. *Crysis*, *Quake*), through to third-person action games (e.g. the *Tomb Raider*-series), to roleplaying games (e.g. *Fallout*-, *Mass Effect*- and *Diablo*-series), Massively Multiplayer Online Games (MMOGs) like *World of Warcraft* and *Age of Conan*, and beyond player characters are central to players' experience of many games. It is through this character that the player can affect the game world, be it via combat, puzzle solving or simple exploration, and interact with the other inhabitants of the game world [31]. In such games what control the player has over events in the game is exercised solely through what the player character provides. For example, in a game such as *GTA III* the vehicles that are so central to the game cannot be controlled by the player until the player character enters them. In a first person shooter, such as *Prey*, weapons must be acquired by the player character before the player can use them to shoot.

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The importance attached to the relationship between player and player character by one game designer, Eiji Aonuma, of the *Legend of Zelda* series, can be seen in his explanation of the name of the player character: "When a player is playing a Zelda game, my desire is for the player to truly become Link -- that's why we named him Link, so the player is linked to the game and to the experience." [1] (p.2). Players rely on their player character. As Murphy [15] puts it, play is "embodying and controlling a character as an avatar". Tychsen et al [31] concluded that players engage with a wide spectrum of character profiles, and can manage complex character profiles. They also found that merely having an interesting character is not enough - players engage with and utilize character components such as personality, background and statistics when these are activated by the game design, e.g. via plotlines or co-players. The more these are activated, the better the engagement. This type of character activation is seen in e.g. the *Mass Effect* and *Dragon Age* series, Bioware games that have been positively critiqued for deep character immersion. Mallon & Webb [13] noted that while players did not mind an initial non-interactive introduction to their characters, they prefer building up relationships with the player character in a gradual and managed manner. The pace and style of this process likely varies from player to player. Player characters are important to the interaction with a game, to the designers and to the players.

The centrality of the player character to the game play in many games has led to consideration of the relationship between the player and the player character. Some authors have examined the way in which players identify with their characters, for example Murphy [15], who says, "Gamer identification fuses – or to borrow a term from film theory – sutures the gamer to the game" (p. 235). Despite this research the nature of the interaction between player and player character, and the effects upon it, are far from fully understood. Shaw [27], based on an empirical study, concluded that "Players do not automatically take on the role of character/avatars" (p. 2). Other authors have assumed that the type of game affects the player's reaction to it. While not concerned solely with the relationship between player and player character, Schneider et al [26] start from the assumption that differing amounts of narrative in a game will affect the players "motivational, psychological, and physiological experience" (p. 361). Many studies of identification in games rely on textual analyses; the interested reader may consult Shaw [27] for an extensive list. While some empirical research into the relationship between player and character have taken place, including some, such as Turkle [30] quite early in the history of videogame studies, they are relatively few. What we lack is a wide range of empirical analyses, or even a solid basis for such studies.

Most contributions to understanding the relationship between player and character, as discussed below, either take a purely theoretical, textual approach to the issue of player identification or base their results on surveys or interviews with players which explicitly address questions of identification. For example, in [26] players were asked whether they identify with the player character, and the extent to which they do. Gathering responses in this way is prone to bias as it automatically gives the player an opportunity to reflect upon the question before providing an answer. The answers are filtered through the conscious decision making process of any such experimental subject. The responses may then be coloured by whether or not the subject *wants* to identify with the player character, or perhaps even wants to be seen as identifying with the player character.

In this study a different approach was taken. Rather than directly asking players whether they identified with the player character, interviews were conducted with the players where they were invited to discuss various events and actions in the games played. Analysis of the interview transcripts was based not on their semantic content, but simply on the subjects' use of first, second or third person pronouns in discussing the player characters and their activities in the games. Pronoun usage has been a subject of study in other disciplines for some time, for example the work of Conrad and Conrad [4], published in 1956. That variation in pronoun usage reflects variation in attitudes and beliefs has long been accepted in linguistics, as will be discussed below (for example the work of Winer [33], published in 1971). It could then be contended that variation in pronoun usage may indicate variation in identification between player and character.

It is clear from the results that the experimental subjects showed distinct trends in their pronoun usage. The variation was not based upon the games themselves, but between groups within the experimental population. This implies that generalisations about all players should be avoided and that any discussion of the relationship between player and player character should pay careful attention to the individual, differing, characteristics of players.

2. LITERATURE REVIEW

Personal pronouns are very common features of speech. Linguistic studies have long recognised that pronoun usage is significant in understanding the view of the speaker. For ex ample, Conrad and Conrad [4] stated that "the individual's pronoun choices express something about his orientation toward persons, ideas, feelings, and objects." (p.277) Pronoun usage has been studied in psychology, where, for example, it has been used as an index of egocentrism [32], in examination of narcissism [21, 18] and in the relation to deception and honesty, where it was found that fewer first person singular pronouns were a characteristic of short deceptive communications [19].

In communication and discourse studies pronoun usage has been seen as indicating the taking of responsibility by speakers [3]. It has also been used to measure the differentiation of the individual from the family [33]. According to Redman and Fawns [22] pronoun grammar analysis "supports a researcher to identify the relationship a speaker has with the topic, object or artefact at hand" (p.167). The gender usage of pronouns has been studied, with a review of 30 empirical studies reporting that "I" references (ie, first person pronouns) was a noticeable feature of male language use when compared to female language use [14]. The importance of pronouns in speech has been summarised by Yates and Hiles [34] "Pronouns serve not only as referents to people but also have illocutionary and perlocutionary effects in terms of locating agency, moral responsibility, duties, rights, points-of-view, and so on" (p.537). Yates and Hiles also refer to the scale proposed by Rees [23] which denotes the 'distance from the self' by the use of different pronouns, where the ordering of first person (I), second person (you) and third person (he/she) represents an increasing distance from the self.

These studies were not in the context of videogames, where the player character exists as a kind of alter ego to the player. Instead they considered actions and attitudes of the speaker in the real

world, such as family relationships and moral responsibility. However, the identification between player and player character can be considered to fall under the general description of "identify the relationship a speaker has with the topic, object or artefact at hand" [22, p.167]. It appears, then, to be a reasonable conjecture from the work just discussed that the use of pronouns can indicate the identification of a speaker with the topic spoken about. When the speaker is a player and the topic is the player, character identification might then be inferred from pronoun usage.

Questions of identity and the identification between player and player character is not a new topic for videogames research. In her analysis of Lara Croft, from the *Tomb Raider*-series of action/adventure games, Kennedy [11] approaches the question of identification with the player character from a gender perspective, assuming the nature of that identification must vary with the gender and sexuality of the player. Her conclusions about the differing relationship of players with Lara Croft based on gender are underpinned by an acceptance of "the fusion of player and game character". De Mul [6] applies narrative theory, particularly extending those of Ricoeur, to discuss the interplay of games and player identity. Murphy [15], for example, takes it as a given that there is an identification between player and player character and that this depends upon "Control within a game and the controllers used to play a game" (p. 230). Her conclusions are drawn from an auto-ethnographic approach and a small number of interviews with other players. Tronstadt [28] discusses two different types of identification, "On the one hand, identification with one's character may be understood as the player entering a state where he or she has an experience of 'being' the character. On the other hand, identification may be understood as experiencing what the character experiences, but without the feeling of being identical to it" (p. 251). Eladhari [8], also examining MMORPGs, asks "Can one talk about characterization at all if it is not a performed identity, or role, but instead a real identity expressed within a fictional setting?" (p. 171). Whatever the answer may be, the question assumes a very particular type of relationship between player and player character. Newman [16] posits that identification depends more upon the capabilities of the character rather than its representation, "the degree to which the player considers themselves to "be" the character – is not contingent upon representation. On-Line, "character" is conceived as capacity – as a set of characteristics." Filiciak [9] goes so far as to advocate the need for an identification between real and virtual identities, which he terms 'hyperidentity'. "Construction of a new paradigm that obliterates the boundary between the inner and outer is essential to creating the kinds of thinking needed for the new conditions of our existence. ... differentiation between the artificial and real or between outside and inside will be blurred." (p. 98). Whether one agrees with this position or not, it is obviously underpinned by an assumption of identification between the virtual and the real. Rehak [24] does not see matters as quite so straight forward "we should not presume the subjectivity produced by video games or other implementations of VR to transparently correspond to, and thus substitute for, the player's own" (p. 104). Common to these studies is that they are based on textual analysis, not empirical approaches. Most ([24] being a counter-example) are confident in making assumptions about the existence and nature of identification between player and player character.

There have been empirical studies in the area of identity and identification in videogames. Turkle's work on player identity in Multi-User Dungeons (MUDs) (for example, [30]) involved extensive interviews with players. This approach was reflected in the much more recent work of Shaw [27] involving the use of surveys and interviews. These interviews explicitly asked the subjects to reflect on their identification with their characters and found that that taking on the character's identity was not automatic. Without criticising this approach, we submit that there is value in approaches that are less direct and instead attempt to obtain more unmediated responses from the experimental subjects. Shaw herself calls for more empirical work in this area. Schneider et al [26] address a number of topics, including player/player character identification, player experience and presence, examining "how the addition of a storyline to a first-person shooter video game changes the motivational, psychological and physiological experience of the game player" (p. 361). They found that identification was greater in games with a significantly greater story.

From the above it can be seen that most studies of player to player character identification fall into two broad categories. First are the primarily textual analysis works. While such approaches have important contributions to make they still leave room for empirical research, as noted by Shaw. Secondly are a lesser number of empirical studies. However by far the majority of these studies use approaches, whether based on surveys or interviews or both, that require the experimental subjects to answer questions that explicitly raise the issue of identification. This means that the results may be filtered partly through subject reflection, rather than a direct measure of what the subjects actually experienced. There appears, from the design of these experiments, little in the way of safeguard as to whether the responses were genuine or, knowingly or unknowingly on the participants' behalf, what they wanted to say rather than what they actually experienced. Based on the call for further experimental work, and as a contrast to previous studies, the study reported here attempts to detect identification by implicit means. The design is discussed in detail below but, briefly, the participants were interviewed after playing each of four first person shooter games, without it being made clear as to the purpose of the interview. Analysis was then made of the use of pronouns, based on the linguistic literature referred to above.

Table 1: The eight play orders

Order 1	Bioshock	Prey	Doom 3	Undying
Order 2	Bioshock	Prey	Undying	Doom 3
Order 3	Doom 3	Undying	Bioshock	Prey
Order 4	Doom 3	Undying	Prey	Bioshock
Order 5	Prey	Bioshock	Doom 3	Undying
Order 6	Prey	Bioshock	Undying	Doom 3
Order 7	Undying	Doom 3	Bioshock	Prey
Order 8	Undying	Doom 3	Prey	Bioshock

3. METHOD

The study was conducted as a 2 (story) X 2 (character) within-subjects factorial design. As well as testing for variation between subsets of the subject group the intention was to test for the effect of variation in responses caused by differences in the games played. Subjects played each of the four first person shooter

games for 45 minutes. Each subject was interviewed after each forty five minute session about the game that they had just played. In total the study took approximately five hours for each participant. The games were presented in eight different orders, as shown in Table 1. Each order was used by five out of the 40 participants.

Previous research, such as Schneider et al [26] has typically had players play for much shorter periods (in that case eight minutes per game). Schneider et al justified this length by saying "Eight minutes was selected because it was long enough for experienced game players to make significant progress in these games" (p. 366). That study, like the current one, used first person shooters. We would contend that eight minutes is not long enough for even experienced players to experience much of the game, especially its story. First person shooters typically last 20 hours or more. For example, in one of the games used in the current study, Doom III, eight minutes is barely long enough to reach the first combat sequence. Schneider et al's justification also makes no allowance for inexperienced players, who first have to become comfortable with the game controls. Not being comfortable with using a game´s controls potentially impacts on the ability of the player to experience the player character. Forty-five minutes, as used in the current study, allowed most players to experience a significant portion of the game, gaining more than a cursory introduction to the story and its characters. The games were played from the beginning to ensure players received any introduction to the character that the games provide, and to ensure as similar as possible play segments across the players (with obvious variance with how fast players progressed through the game). While longer would be better, and for example empirical research in film studies may ask subjects to view an entire film, play of all four games could still be achieved in one morning or afternoon session, and avoided the problem of participant fatigue. The time length used here is similar to that in [20], where subjects played for forty minutes. However, in that study only two games were used and each subject only played one game.

The four games used in the current study were *Doom 3*, *Prey, Bioshock* and *Clive Barker's Undying*. All four games are first person shooters (FPS). This means they share the common set up of single-player FPS games, that is a viewpoint shared with the player character and game play that centres on navigation through a three-dimensional world and combat with hostile computer controlled enemies. The combat is primarily firearms-based. A mix of genres, rather than four games from a single genre, could have been used. For a number of reasons a single genre was chosen. First person shooters typically share a basic control system. The same inputs are used for movement and weapon aiming and firing. This means inexperienced players do not have to learn the control system (or at least its basics) four times within the experimental setup. Having multiple genres would have introduced an additional independent variable, complicating the analysis. The approach chosen allows the effect of story and character on identification to be investigated independent of genre considerations, and adds strength to results compared to a single-game setup. Finally this setup reflects that of Schneider et al [26] and allows direct comparison of the results presented here to theirs in that four games were also used, two story light, *Doom 2 Quake 2*, and two story heavy, *Half-Life* and *Outlaws*.

All four games used in the present study are well regarded by critics. According to www.metacritic.com, one of the most widely used aggregate review websites, they received aggregate ratings (out of 100) of *Doom 3* - 87, *Prey* – 83, *Bioshock* – 96, *Clive Barker's Undying* – 85. This limits the chance that the results are affected by differences in the quality of the games. *Bioshock* and *Clive Barker's Undying* both contain relatively intricate stories for a FPS. Bioshock has a "complex exploration of free-will, individualist ideologies and the dangers of unfettered science" [29, p.28]. *Clive Barker's Undying* has as its story a horror tale where the player character is asked to aid an old friend. The complex background to that story, and the relationship between the character and his friend, is clearly laid out in the early part of the game. Conversely, *Doom 3* and *Prey* have much simpler stories, both focusing on extra-terrestrial threats (aliens in *Prey*, demons in *Doom 3*), a simple staple of the genre. *Clive Barker's Undying* and *Prey* give detailed backgrounds for the central character. In *Clive Barker's Undying* the player character is Patrick Galloway, a World War I veteran. In *Prey* the player character is Domasi "Tommy" Tawodi, a North American Indian and military veteran. For both these characters their background and relationships with other characters in the game are clearly explained in the early part of the game and would have been encountered by all subjects in the experiment. This serves to give these player characters recognisable personalities. *Doom 3*, in common with other games in the series, has a nameless player character. While his background as a marine is known, the game reveals nothing else, including his name. In *Bioshock* the player character is called Jack, but very little of his background and nothing of his personality is revealed until much later in the game than the subjects would have reached. The resulting matrix of game elements is shown in Table 2.

Table 2: Relevant characteristics of the selected games

	Story Heavy	Story Light
Extensive player character detail	Clive Barker's Undying	Prey
Limited player character detail	Bioshock	Doom 3

The subjects for the experiment were forty university students of Macquarie University aged 18 to 31 years (although only four were older than 24 years). All were volunteers and received a minimal payment for their participation. There were ten female and thirty male participants. Game playing experience of the participants varied as will be discussed below.

Participants took part in the experiments in groups of between four and six. On arrival at the experimental site all participants in the current group were given an Information and Consent form and requested to read and sign it. The signed copies were then collected. A basic outline of how the experiment was being conducted was given to the participants. After this the participants were given a background survey asking about gender, age and videogame playing experience (e.g., number of videogames played, how many years spent playing videogames, frequency of playing videogames). Participants were then seated at a computer. After being given forty-five minutes to play their current game participants were asked to exit the game. Each participant was then interviewed about the game they had just played. Participants were interviewed sequentially, in a separate room, so that they could not overhear the interviews of other participants. The next game was then played. This procedure was repeated until all participants in the group had played, and been interviewed about,

all four games. Participants in each group played the games in varying orders (randomized). After the last individual interview a group interview was held. Participants were then thanked, given their payment and left.

The individual interviews themselves consisted of some basic questions (such as "Please give an outline of what had to be done in the portion of the game just played" and "Please give some examples of interaction (besides combat) with other characters in the game"). As the phrasing of the answers, and not their content, was the focus, follow-up questions were aimed at keeping the participant talking not at eliciting particular information. Interviews were short, typically lasting two to three minutes.

The interviews were transcribed and then analysed for pronoun usage. The analysis was done using Nvivo. Statistical analysis was undertaken in SPSS. Pronoun usage by the participant which was unrelated to the game play was not included in the pronoun usage totals. Examples of these include talking about their own life history and obvious figures of speech (such as "I guess"). The pronoun usage for each of the first, second and third person pronouns was cast as a percentage of overall pronoun usage for each participant in talking about each game. Percentages were used to give equal weight to each participant's data because some participants were more "chatty" and/or they used more pronouns than others. Using raw numbers of pronouns would have given more weight to some participant's contributions and less to others. Useful results were obtained from all participants, so in the results discussed below *n* is consistently 40.

4. HYPOTHESES

As noted by Shaw [27] there is still considerable empirical work to do in the area of player identification with player character. The experiment described here was structured to enable the testing of the effects of various influences on this identification. Identification with characters has been studied in fields beyond videogames. Bettelheim [2], for example, looked at the psychological effects of the identification of children with heroes in stories. Various authors have looked at the interaction of television viewing and identification (see Schneider et al [26] for a good summary). In these studies elements of the story and the characters in it were seen as affecting the level and nature of identification. These elements were focussed upon in the work of Schneider et al. In line with that work we arrive at our first hypothesis:

H1 Video game players will make more use of the first person pronoun when talking about their experience in FPSs with a more complex story when compared to games with a less complex story.

As discussed earlier the player character is a central feature of first person shooters. This is true of many genres, take, for example, the earlier quote from Eiji Aonuma. Given that the player character is so important it can be asked whether the nature of the player character has an effect on the identification between player and player character. This leads to our second hypothesis:

H2 Video game players will make more use of the first person pronoun when talking about their experience in FPSs with a more detailed player character when compared to FPSs with a less detailed player character.

Schneider et al [26] focussed on the role of story. Our first hypothesis will enable us to compare our findings to theirs. However, it is by no means certain that the degree of identification depends solely upon the videogame material itself. It is just as possible that the degree of identification is also affected by characteristics of player as it is by characteristics of the games.

Unfortunately our sample is too homogeneous in age and education level to test whether those particular characteristics affect identification. However, we have a sufficient gender split to allow for our third hypothesis.

H3 Gender will affect the usage of the first person pronoun when players talk about their experience in FPSs.

The effects of repeated exposure to a media have been extensively debated. For example, Huesmann and Millwe [10] studied the effects of repeated exposure to media violence in children and Malamuth [12] studied the effects of repeated exposure to pornography. These are only two studies amongst many examining these and other issues in the effects of repeated media viewings. Given that the possibility that repeated exposure does have an effect it is possible that the extent of a participant's videogame playing would have an effect on their identification with the player characters. While this issue was tangentially addressed by Shaw [27] in that part of her method was an interview exploring her participants' experience of video games, she reports little in the way of results affected by this factor. Given the paucity of work in this area it was decided to examine this issue from a number of aspects, such as, length of time (in years) playing videogames, frequency of playing, number of videogames played and experience with online play. This gives our remaining hypotheses:

H4 The number of years players have played videogames will affect the usage of the first person pronoun when players talk about their experience in FPSs.

H5 The frequency with which players play videogames will affect the usage of the first person pronoun when players talk about their experience in FPSs.

H6 The more videogames of any type players have played will affect the usage of the first person pronoun when players talk about their experience in FPSs.

H7 A player's experience with online play will affect the usage of the first person pronoun when players talk about their experience in FPSs.

A final hypothesis is used to test for experimental affects:

H8 The order in which the participants played the games will affect the usage of the first person pronoun when players talk about their experience in FPSs.

The hypotheses could have been written as "identification with the player character" rather than the form "usage of the first person pronoun". From the work discussed above we contend that the former can be inferred from the latter. However, we have framed the hypotheses to directly reflect what was measured, rather than what we infer. Also note that we have limited our hypotheses to first person shooters, as that is the experimental vehicle employed. Generalising from these results to identification in other genres, especially ones with less explicitly human player characters, is perhaps speculative (see discussion below).

5. RESULTS

The first two hypotheses dealt with the effect of story and character on the use of first person pronouns when players discuss their game experience. The percentage of pronoun use was calculated for each participant. Pronoun usage was calculated for first, second and third personal pronouns in four categories: story light games, story heavy games, games with extensive character detail, games with little character detail. The results for each pronoun were then tested for correlation across the opposing game categories. That is, usage in story heavy games was tested against usage in story light games and usage in games with extensive character detail was tested against games with little character detail. The results are shown in Table 3.

All six combinations produced highly significant positive correlations ($p<0.001$). From this we conclude that the first two hypotheses are not supported. Game type did not have a significant impact on the pronoun usage of the participants. Figures 1 to 6 show the scatter plots of these results. It should be noted that the 0/0 and 100/100 points represent more than one participant. A visual examination of the datapoint distribution in the scatter plots lends support to the conclusion that neither of these hypotheses (H1 or H2) are supported.

Table 3: Correlation results for pronoun usage across game categories. Note: all results significant at $p<0.001$

Dependent Variables	Pearson's r
% of first person pronoun usage for story heavy games % of first person pronoun usage for story light games	.766
% of second person pronoun usage for story heavy games % of second person pronoun usage for story light games	.752
% of third person pronoun usage for story heavy games % of third person pronoun usage for story light games	.703
% of first person pronoun usage for games with extensive character detail % of first person pronoun usage for games with little character detail	.740
% of second person pronoun usage for games with extensive character detail % of second person pronoun usage for games with little character detail	.808
% of third person pronoun usage for games with extensive character detail % of third person pronoun usage for games with little character detail	.629

Table 4: Descriptive Statistics for Hypothesis 4, first person pronoun usage

	years spent	Mean	Std.	N
% of utterances overall in 1st person	10 years +	17.0996	15.77859	25
	5-10 years	23.7729	36.30339	7
	1-5 years	43.7960	31.62668	5
	Less than 1 year	58.0650	59.30505	2
	Never played	83.8700	.	1
	Total	25.3220	27.91303	40

Table 5: Descriptive Statistics for Hypothesis 6, 1st and 2nd person pronoun usage

	Total number of videogames played	Mean	Std. Deviation	N
% of utterances overall in 1st person	41+ games played	18.9547	24.36907	19
	21-40 games played	10.5012	12.31883	8
	11-20 games played	36.0025	26.12638	4
	1-10 games played	42.6063	33.34949	8
	None	83.8700	.	1
	Total	25.3220	27.91303	40
% of utterances overall in 2nd person	41+ games played	55.6889	30.37749	19
	21-40 games played	62.5438	36.03864	8
	11-20 games played	18.7400	16.91652	4
	1-10 games played	20.7638	27.53943	8
	None	.0000	.	1
	Total	44.9878	34.33798	40

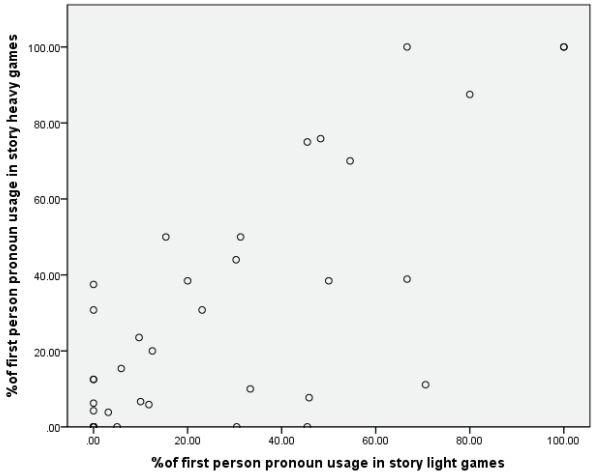

Figure 1: Scatterplot of first person pronoun usage across story category (story light vs. story heavy).

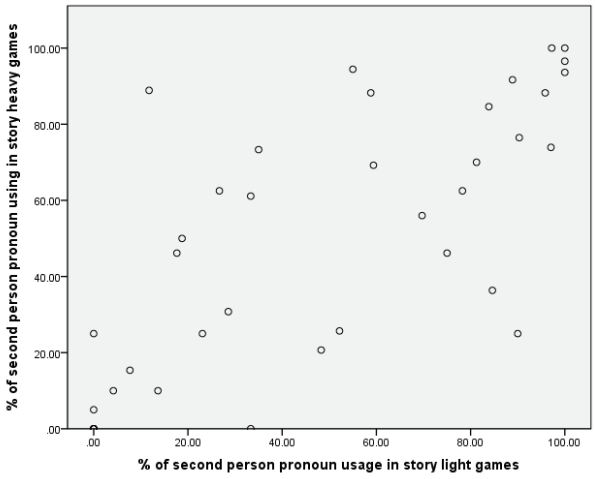

Figure 2: Scatterplot of second person pronoun usage across story category (story light vs. story heavy).

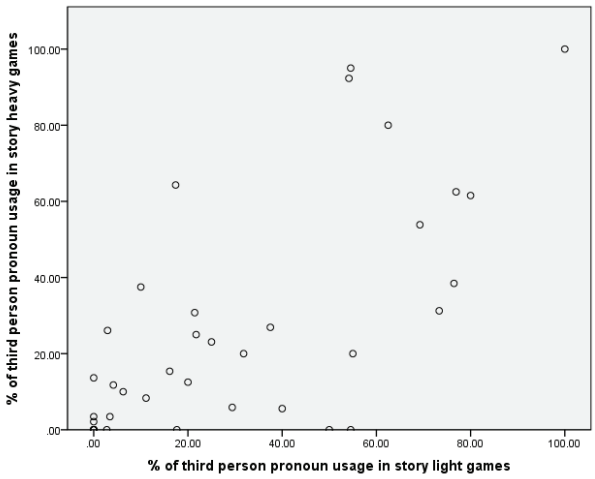

Figure 3: Scatterplot of third person pronoun usage across story category (story light vs. story heavy).

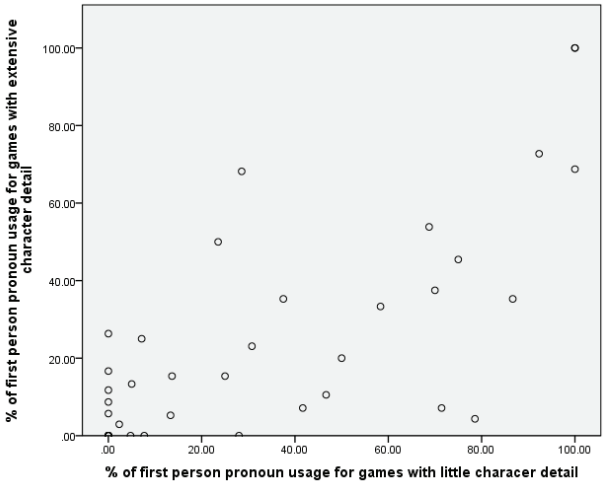

Figure 4: Scatterplot of first person pronoun usage across character category (extensive vs. little character detail).

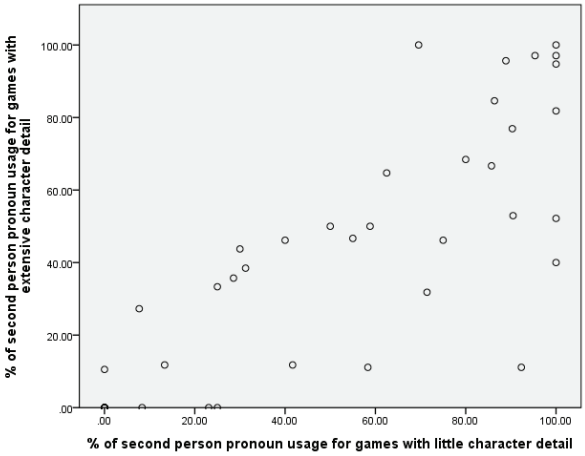

Figure 5: Scatterplot of second person pronoun usage across character category (extensive vs. little character detail).

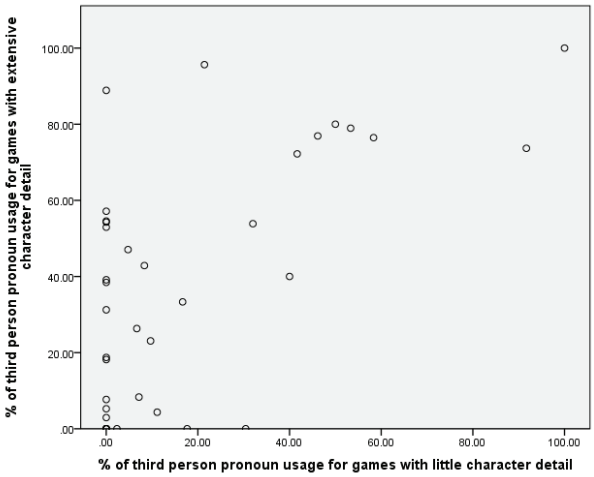

Figure 6: Scatterplot of third person pronoun usage across character category (extensive vs. little character detail).

Hypotheses H3 to H7 were investigated by use of a one-way between-groups multivariate analysis of variance (MANOVA). The categories of pronoun usage were used as dependent variables. The independent variable was chosen as appropriate to each hypothesis. Preliminary assumption testing was conducted to check for normality, linearity, homogeneity of variance-covariance matrices and multicollinearity, with no serious violations noted. The results for each are given below.

5.1 Gender – H3

There was a statistically significant difference between genders for the combined variables, $F(3,40) = 4.31$, $p = .011$; Wilk's lambda = .74; partial eta squared = .26. When the results for dependent variables were considered separately, the only difference to reach statistical significance, using a Bonferroni adjusted alpha level of .017, was first person pronoun usage, $F(1,40) = 13.16$, $p = .001$, partial eta squared = .26. The mean scores show that females used a significantly higher proportion of first person pronouns ($M = 49.53$, $SD = 40.47$) than males ($M = 17.25$, $SD = 16.43$). From this we conclude that H3 is supported.

5.2 Years played - H4

There was no statistically significant difference based on years of playing for the combined variables, $F(3,40) = 1.58$, $p = .085$; Wilk's lambda = .58; partial eta squared = .17. When the results for dependent variables were considered separately, the only difference to reach statistical significance, using a Bonferroni adjusted alpha level of .017, was first person pronoun usage, $F(1,40) = 3.67$, $p = .013$, partial eta squared = .30. The descriptive statistics are given in Table 4. We conclude that H4 is supported.

5.3 Frequency of playing - H5

There was no statistically significant difference based on frequency of game playing for the combined variables, $F(3,40) = 1.26$, $p = .258$; Wilk's lambda = .66; partial eta squared = .13. When the results for dependent variables were considered separately, no differences reached statistical significance, using a Bonferroni adjusted alpha level of .017. From this we conclude that H5 is not supported.

5.4 Number of Videogames played - H6

There was no statistically significant difference based on the number of games played for the combined variables, $F(3,40) = 1.68$, $p = .085$; Wilk's lambda = .58; partial eta squared = .17. When the results for dependent variables were considered separately, two differences reached statistical significance, using a Bonferroni adjusted alpha level of .017. The first was First person pronoun usage, $F(1,40) = 3.57$, $p = .015$, partial eta squared = .29. The other was second person pronoun usage, $F(1,40) = 3.88$, $p = .010$, partial eta squared = .31. The descriptive statistics are given in Table 5. From this we conclude that H6 is supported.

5.5 Experience with online play - H7

There was no statistically significant difference based on experience with online play for the combined variables, $F(3,40) = .432$, $p = .732$; Wilk's lambda = .965; partial eta squared = .221. When the results for dependent variables were considered separately, no differences reached statistical significance, using a Bonferroni adjusted alpha level of .017. From this we conclude that H7 is not supported.

5.6 Experimental play order - H8

There was no statistically significant difference based on experimental play order for the combined variables, $F(3,40) = 1.23$, $p = .248$; Wilk's lambda = .473; partial eta squared = .04. When the results for dependent variables were considered separately, no differences reached statistical significance, using a Bonferroni adjusted alpha level of .017. From this we conclude that H8 is not supported. Note that the interviews were held after the playing of each game, so interview and play order are the same and is also covered by this hypothesis.

6. DISCUSSION

The video game industry is like any other industry, it needs to sell its product to survive. Story and character are some of the design elements employed in many games, including blockbuster titles such as Mass Effect 3. "[T]his game is driven by story and characters" goes one of its reviews [17]. Improvements in high budget video games are shown by improvements in areas such as graphics, realism, narrative and character design. In some sense all videogames seek to immerse their players in the virtual worlds they present. Stories offer context and motive for the action of a game, characters offer the personalities, hopefully believable within the game context, with whom players can identify. This study examined the influences of story, character and a range of player attributes on one possible measure of identification, the use of personal pronouns.

The results indicate that identification is subject to a complex interplay of factors. The variety in story and character level did not appear to have a significant impact on identification (as shown by the level of use of personal pronouns). This is in contrast to earlier studies, such as Schneider et al [26] which found the opposite. While both that study and the current study refer to "identification" it is possible that the experimental procedures did not measure exactly the same phenomenon. The current study focussed on an implicit measurement of personal distance. Our assumption is that the more use of first person pronoun, the less distance, the greater the ownership the participant sees in their relationship with the player character. Compare for example

"I had to go to my friend's house and there were monsters eating his servants and I had to go around and shoot them."

with

"in the game you just first get in a big house and then you explore the house to get the spell, new spell and some keys for you to get to open other doors"

Both are statements about *Clive Barker's Undying*, from different participants.

Schneider et al's [26] survey-based approach included items such as "I felt the characters in this game were interesting". This does not focus on the player character. Nor does "interesting" automatically equate to identification, merely a possible component of identification. The different lengths of play time in the two experiments may also have had an effect. The eight minutes play segments used by Schneider et al may not have been enough for players to feel part of the virtual world in games that did not forefront character and story, in that case two of the games used, *Doom 2* and *Quake 2*. The 45 minutes played in the current study may have given time for the effects to even out across the different types of games used here. It should also be noted that this study, like others, used games from a single genre, that of the FPS, although that is one of the major videogame genres in terms of sales. It could be that games from other genres would show

more significant effects (for example the Role Playing Game genre, which traditionally places heavy emphasis on player characters and their development).

In the current study the more significant effects were from player attributes, specifically gender and videogame playing experience. However, it should be noted that the population mix was not ideal, in that the female participants were relatively inexperienced compared to the male participants. Only two of the 30 male participants had been playing for less than five years, whereas only four of the ten female participants reported playing for more than five years. Similarly 25 out of the 30 male participants reported playing 20 or more games in total, while only two out of the ten female participants reported this much playing experience. Therefore the effect of one of these factors could be the sole cause of both results. Age is also an issue, with the female population having a mean each of 22.5 years and a standards deviation of 1.72, and the male population a mean age of 22.1 years and a standard deviation of 3.07. While these figures are not unusual with subjects drawn from university students they are a limiting factor to generalisation. A population where the participants were evenly mixed across gender and experience would provide a stronger basis for the conclusions.

Given that earlier work on pronoun usage showed that males are more likely to use the first person pronoun in general language usage, then we would have expected to find the same here if gender was having no effect on identification. We found the opposite, with females making more use of the first person pronoun. If gender is a determining factor here it would indicate that females are more likely to identify with their characters than males are. It should be remembered that the player characters in all four games are unmistakably male (although little attention is drawn to this fact in *Bioshock*), yet females still showed a higher level of identification. It could be, though, that the other factor, experience, was the actual cause. More experienced players demonstrated less identification. It is possible that, as players play more and more games, each character matters to them less and less. They become more a vehicle for the gameplay actions and less a character to be identified with. In the words of one subject of Shaw [27]: "He could be a bunny rabbit for all I care". As Shaw notes, this tapering of identification as gamers grow more experienced argues against the assumption that identification is an important part of the play experience. However, what the current study shows is a complex interaction in how players identify with their characters. While the scatterplots in Figures 1 to 6 do show recognisable trends, it can also be seen that there is significant variation in the results. It could be that identification, to the extent that it exists, depends upon a range of factors that may include both those examined in this study, such as gender and experience, and others which were not studied here, such as personality types.

7. CONCLUSION

This study has sought to understand the relationship between player and character, particularly to what extent the player identified with the player character in the game. This was achieved through an analysis of personal pronouns used by the player in debriefing interviews following sessions of play with four FPS games. What is clear is that identification with the player character varies across participants and is affected by attributes of the participants. More research is required to fully identify the contributing factors, for example user experience and personality. Such research will require participant groups that are evenly distributed across all possible axes. The experimental design must also recognise, as we have, the intrinsic nature of games, where participants must be given time to engage with their complex virtual worlds.

The results presented here are important not only for their research contribution, but also in terms of game design practice. They highlight that it is not the extensiveness of the character description or how well embedded that character is in the game´s fiction, that impact on how well players identify with them. Rather it is other factors - gender and gaming experience being two of them - that are most important in determining identification. These are attributes of the customers, and highlight the requirement of designing games for their users (players). For example, if designers wish to foster identification with their characters when developing for a hard-core, male audience, then the characteristics of that audience must be taken into account (including how much story and character detail the audience desires), as well as developing truly unique and novel characters that stand out from the crowd. Game designers such as Crawford [5] and Rouse [25] have made similar conclusions based on their professional experience, but the study presented here is, to the best knowledge of the authors, the first time these ideas have been empirically verified.

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