Understanding Player Experience
Finding a usable model for game classification

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ABSTRACT
Digital games receive an age restriction classification rating based on their depiction of harmful content and its presumed impact on players. While classification processes serve as predictors of the subsequent interactions between player and game text they remain largely inferential and an exercise in caution. Confounded by the medium's interactive nature, we argue that classification processes would benefit from research that provides empirical accounts of the interactive experience of games. This paper presents findings taken from a research project with the aim of operationalizing over a decade of Game Studies theorization on the distinct quality of games. The intention is to produce an empirically validated model of media 'usage,' capable of informing regulation processes and the classification of games (within a New Zealand context). Here we draw on findings achieved from one component of our mixed methodology research design [37] - A structured diary method that was employed to allow game players to chronicle different elements of their game-play experience with a single text as they progressed through it. The findings serve to highlight the applied value of Game Studies' theory and its capacity to account for the 'actual' *experience* of play and the ways game texts are activated under the agency of players once they enter everyday life and culture.

Categories and Subject Descriptors
K.5.2 Governmental Issues: Censorship/Regulation

General Terms
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Keywords
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1. INTRODUCTION
The discipline of Games Studies is a testament to the complexity and hybrid nature of the medium of games – Both at once a 'text' that can be read, and an activity that demands players participate in the construction of its structure. Despite its advancement of knowledge on the structural characteristics of games, Game Studies has yet to make a significant impact on the social perception or political treatment of games. This consequently means that the protection of individuals from harmful media content remains counselled by social science 'media effects theory.' Although this research paradigm has produced an abundance of works that argues both for [4, 5, 16] and against [13, 14] the 'digital games are poison theorem,' it has done so without a developed understanding of games either as *texts* or *processes* [26]. Alone, Game Studies theory and experimental effects research fail to adequately account for the experience of game-play. To remedy this we propose a mixed methodological approach located at an intersection between humanities, social sciences and computer sciences. In an attempt to overcome existing paradigmatic barriers and report on the way games function as textual and structural objects that carry cognitive, affective, and social implications, several methodologies are being employed concurrently- including screen-extracted game-metric data, bio-metric storyboards [31] and eye-tracking. Following game-play sessions, participants return to complete retrospective player commentaries over footage of their game play. Beyond the lab setting, participants complete diary entries that capture their accounts of their game-play experiences between lab sessions.

2. PLAYER ACCOUNTS
This paper focuses on the project's first substantial application of the diary method which was conducted with the game *Dead Island* (Deep Silver, 2011). This method allows to take heed of Garnham's warning against confusing, or equating 'use' with a simplified notion of an 'active' audience [15]. Diaries seek to chronicle the 'lived' experience of gameplay that is otherwise stored, like all other lived experience, in the player's memory, in which certain episodes leave a stronger imprint than others (e.g. overcoming seemingly impossible odds, subversions or comic instances in multiplayer games, etc.). Diaries also enable the experience of game-play to be assessed longitudinally and away from the presence of both the researchers and the artificial and lab-like conditions demanded by the other methodology techniques employed in the project.

A combination of university students and employees (all male) participated in the study for a period of seven weeks. Diary entries were completed using a semi-structured online diary tool constructed specifically for the study. This tool allowed participants to write and submit individual diary entries online upon completion of each game-play session. Both play and diary entries were structured by 1) occasionally determining the save point where players should play up to in a particular session and 2) suggesting discussion topics for participants consideration based upon the research teams' own experience playing *Dead Island*. In doing so, participants roughly moved through the game at a similar pace and reflected on specific aspects relevant to the specificities of *Dead Island*. By administering the diaries online it was possible to post follow-up questions in direct response to participants' entries. The experience of game-play was thus assessed longitudinally from the comfort of the participants' own homes.

In addition to responding to the demands of the game, we were interested in examining the relevance of six types of player involvements conceptualised by Calleja [7]. By playing and analysing *Dead Island* in advance of the study, we were able to form an opinion as to how the game prioritizes or implies different frames of involvement. While participants were free to highlight significant experiences and features of the game that stood out for them, we were also interested in examining how identifiable, significant and consistent different frames of involvement appeared to them. These frames included; kinaesthetic, spatial, shared, narrative, affective and ludic involvement. Additionally, all these forms of involvement can be experienced at both a macro and micro level, extending to anticipatory thinking prior to 'actual' in-game experience. Typically, the 'magic circle' [20] describes the physical or social spaces inhabited by players during play that produces an 'act apart' or 'new reality' [34]. We instead conceptualize a circle of meaning capable of incorporating anticipation and post-session reflections.

2.1 Anticipatory Involvement

Poels et al. [32] note that while players' opinions and dispositions towards games are strongly influenced by the thoughts, plans, feelings, and expectations held prior to game-play, this is rarely expressed or focused-on in player experience research. In line with this, the research process began with an exploration of participants' expectations prior to play, which was stimulated by the audio-visual trailer used by developers to publicize the game in advance of its release. In watching the game trailer, participants' attention was triggered, sparking a concentration of mental recourses on the experience that *Dead Island* might offer. The *Dead Island* trailer is beautifully poignant and cinematic in its styling, depicting parents' futile attempts to save their daughter (and themselves) from a zombie attack. As a dramatic event, it does not utilize or depict game-play, but is a skilfully animated narrateme [8] that omits the tropes of a game that disturb the coherency and consistency of the game's fiction [24] – such as scoreboards, healthbars, direction arrows, button prompts, etc. As a prelude to the experience of the game, the trailer only really serves to showcase the graphical and animation skills of the developers leaving participants forming an impression of the game based on prior gaming experience and genre. Participants speculated on the behavioural demands of configurative activity, both physically (actions) and mentally (strategy). For example:

> I expect to be re-killing a lot of zombies, mostly with melee weapons that are scavenged from the environment. The trailer shows a few types of zombies so I am expecting there to be several different classes of zombie with differing attacks and weaknesses. I expect to be exploring quite a vast game world (Example 1).

Many participants predicted the nature of their engagement with zombies to be close melee combat, using 'make shift' weaponry (items from the environment), but anticipated with pleasure their exploration of the environment ("I hope the game world is detailed and varied"). Similarly, 'character commitment' was approached, with what Lindley and Sennersten call the "competitive, rule constrained form of a game" [28] or 'ludic involvement' [7] in mind. Character selection in *Dead Island* was highly consistent with participants making selections based on:

> his stats appeared to be higher than the other characters. His melee speciality appealed more than the other male character that specialised in throwing (Example 2).

> I chose Sam B mostly because of his extra health and his abilities (Example 3).

> I felt like taking a gun person in a melee game was a bit cheating (Example 4).

Characters deployed in games are often recognisable archetypes that function as compositional, or structural elements acting within a game space, utilising abilities that can largely be extracted from the visual motives employed in their design ("character background … did not affect my decision" versus "I have a strong affinity to dexterity/agility based melee fighters"). As the story of *Dead Island* advanced (and earlier ambiguities were explained), participants were directly questioned (around level 9)on 'narrative involvement' and the general appeal of the story-line, only to respond with the view that it remained "peripheral to the game". This was in part attributable to the manner in which: "Most of the characters are quite stereotypical and so I don't feel for many of them." Furthermore, NPCs situated in the game world were perceived as "little more than quest givers."

2.2 Ergodicity

The diary entries displayed in Section 2.1 clearly show what Aarseth has termed the ergodic quality of games [1]. Games require non trivial player input even prior to play or during moments of apparent inactivity because ergodicity is also apparent in a disposition, or readiness to act [7]. This is illustrated by the fact that game characters are perceived or approached as vehicles possessing certain attributes that fall under the player's control [30]. Consistently, diary entries uncovered a continued preference for interpreting the game and game environment from a configurative perspective. Environments were perceived as a place for action or a place that requires a specific type of strategy. This is very different from the way that we would look at (and assess) an environment in other non-interactive media. For example:

> I quite enjoyed the sewer environment (...). The groups of zombies were smaller and because of the narrow tunnels they could only attack a couple at a time. (...) It provided multiple paths and had many nooks and crannies to explore in my search for better loot. (...).They [the environments] have been designed in such a way, and rewards have been placed frequently enough, that I want to explore everything the environments have to offer (...) (Example 5).

These examples of active orientation may prove significant from a classification perspective, as a configurative approach appears to exist at the forefront of players thought processes during moments of violent combat. In doing so, it restricts the assumed relevance and significance of the aesthetic or representational qualities of that same conflict. While a common assertion by Game Studies scholars that game-play is a different kind of mediated activity, compared to other forms of media reception, media classification systems still hold a tendency to reinforce the notion that games are 'experiential equivalents' to film. This is reflected in how the 'impact' of games is largely attributed to the image on-screen as a principal communicative form that the player interprets (not configures). The rating process thus characterises the audio visual representation of (violent) content, leaving the role of interactivity and the way that content is encountered and processed by players severely under articulated in their certification.

Multi-modality theory is a branch of social semiotics [21] that has fruitfully been applied to textual analysis of games (e.g. [36]) precisely because it acknowledges how the communicative strata of games extend beyond representation. What is watchable as screen-output in games, forms part of the orientational function of the text that will often point to a game's imperative mood, the need to act. This player activity does not always require conscious attentional focus. As Calleja argues, "most interactions with an environment are possible because we have an internalized knowledge of how various aspects of that environment work" [7]. This could support the claim that games allow us to freely explore violent or immoral desires undisturbed by a conscious activation of procedural knowledge. However, it is when a player is faced with experiences they cannot readily interpret, that "our mode of being becomes more critically removed and we must actively think about what we are doing" [7]. Thus, on the one hand participants constantly articulated their experience and approach to *Dead Island* in relation to 'prior learnt experiences' that made the development of strategies and adapting to the game a more educated process, for example:

> I spent a few moments looking through the menus, specifically the skill tree, and familiarized myself with them. Upon looking at the skill tree I knew what the game was going to be like, in terms of skill progression (Example 6).

or

> Years and years of FPS gaming, including RtCW & Enemy Territory has taught me that head shots are supreme. Even if there are other options available, it is hard to retrain the mind and muscle memory out of this habit (Example 7).

On the other hand, there existed a continuing need to consciously attend to the designed nature of the game environment as the game progressed. As participants discovered upon beginning Chapter 5 (first chapter in the second act of the game), difficulty levels increased exponentially, with prior strategies becoming redundant and ineffective. For example:

> … the game suddenly became much more difficult. My tried and true method no longer works … This is good as it provides more of a challenge, but I find this somewhat distracts from my immersion (Example 8).
> It was almost like a whole new game … The learning curve is quite steep … It was about this time in the game where I was starting to feel comfortable with the UI and how the mechanics of the game worked (Example 9).

As the former quotation (above) stresses, strategic involvements overrides any extensive construction of, or attunement to the representational facade of the game. Indeed, diary entries reinforced a preoccupation with 'ludic involvement', articulated as actualization of tactics through a process of exploration of the perceived available options and their perceived consequences. For example:

> I always tend to test boundaries to see what the character and environment are capable of. Knowing your limits may aid you in combat later on at any point (Example 10).
> I've tested falling, running, swimming, drowning, stealth, hiding in shadows. Also tried to damage most surfaces and items in case things break away that are useful (Example 11).

2.2.1 The Pleasures of Interactivity

In his analysis *Dead Rising*, a digital game homage to George A. Romero's (1978) *Dawn of the Dead*, Schott argues that players are strongly motivated by the possibilities of variety and form in zombie deaths. Zombie deaths in films are commonly described by film producers as 'gags' of the kind that invoke the "harmless facsimiles of disgusting objects (e.g. fake vomit or excrement) or terrifying states (e.g. arrow through head) available for practical jokers" [35]. Jamie Russell, author of *Book of the Dead*, also argues that 'comedy exaggerates the horror by making us even more aware of just how ridiculously vulnerable the flesh is' [33]. This aspect of game-play, within a zombie-genre, was also evident with *Dead Island* in which participants noted how they found it "rather ammusing (sic.) that they [the zombies] can drown". However, in games, this pleasure is (again) mostly related to the player's agency. Which was illustrated by how the creativity in assigning weapon potential to discarded objects was articulated as a motivational aspect of the play experience. For example:

> I have also been using the vehicles as weapons and running them down as well as pushing them into things (Example 12).

Yet, as Jesper Juul was quick to point out that the pleasures of interactivity in games does not reside in a complete freedom to act. Games 'contain a built-in contradiction', in the way we take the interactivity of videogames to mean 'free-form' play devoid of constraints. In playing videogames we 'choose to limit our options by playing … with fixed rules' [23]. Participants playing *Dead Island* were quick to recognize this, for example:

> The stamina aspect is something that I soon realized is the limiting factor for my character in terms of how many creatures I can attack at once – If I take on more than about three or four, I frequently found myself watching the zombies biting me as I waited for my stamina to recover enough to hit back (Example 13).

Despite the constriction it places on the player it was acknowledged as an encouragement for players to develop more nuanced and appropriate strategies. For example:

> I think the stamina mechanic is excellent, and the tuning is perfect because you must time your attacks and pick your targets carefully instead of simply spamming buttons. You do get a nice feeling when you outwit the game and execute your plan properly (Example 14).

An example of this in the earlier sections of the game, could be found in players learning the value of the 'kick' - An action that "can stop a charging zombie, doesn't drain fatigue does a fair amount of damage, knocks down zombies and is fast. Utilizing the kick is an effective way of preserving your weapons and preventing damage to your character."

3. A MODEL OF PLAYER EXPERIENCE

For the field of Game Studies to have a real impact on the social and political attitudes and beliefs about the medium of digital games, it needs experimental validation of its theoretical explorations. This means that Game Studies theory needs to be operationalized to structure the play experience and provide a model that is usable beyond its own academic community. Essential dichotomies that have emerged within Game Studies theorization, such as story versus game [2], rules versus fiction [24], simulation versus representation [12], and interpretation versus configuration [11], proved to be fundamental in shaping such a working model that articulates game-play experience. To that effect, we propose that play is an activity that falls between interpretation and configuration and involves meaning attribution between the game and the fiction. Enclosed within these continuums are complex cognitive processes of meaning construction, cognitive task performance and extra-noematic activity [1], accompanied with different emotional states that are both effects of- and motivators for the perceptual and behavioural activities of the player.

We propose that player interactions with game systems function as a feedback loop that incorporates both the perceptual and behavioural activity of the player and the way that meaning is constructed through the use of certain clusters of knowledge (schemata). Drawing on the constructivist work of Holland player activity involves three essential elements: a perceptual element, a behavioural element, and an internal construct that functions as a standard for comparing our perception and guiding our behaviour (the schema) [22].

3.1 Interpretation Versus Configuration

In the game-play feedback loop the perceptual end of the loop is considered to be the ***interpretative activity*** of the player. This is the activity of attending to the stimuli and comparing it to appropriate schemata in our brains. The interpretation also encompasses the construction of hypotheses that are put out there to be tested. The behavioural end of the feedback loop is represented by the ***configurative activity*** of the player. This is where we act on the input both physically (pushing buttons) and mentally (constructing a strategy). Other than scanning the screen (as when we are watching films), we also perform nontrivial activity [1] to control what happens on that screen. As Holland states, the behaviour generally controls the perception [22], a viewpoint echoed in our data (see Figure 1.) and Eskelinen's theoretical assertion that configuration is the dominant user function of games [11]. However, because perception also guides behaviour and because the feedback loop always exists as a whole (there is no start or finish), we wish to argue that the dominant player activity is where the player's attentional focus lies at a particular point in the game. This means configuration and interpretation can be viewed as two extremes of a continuum that a player moves between while playing.

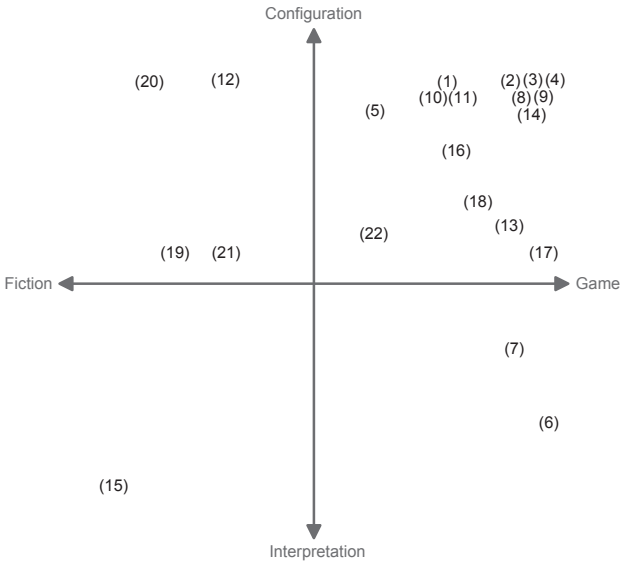

Figure 1. Diary Entries in the Model of Player Experience

When the player articulations of their experiences (numbered verbatim quotes contain in this paper) are represented along an axis that moves from configuration to interpretation (see Figure 1) the importance of the player's configurative activity becomes evident. This is not to say that games do not also allow for a more interpretative appreciation of its elements, as one of the other participants demonstrated:

> I was actually really impressed with this environment. The lighting was amazing. I had to stop myself from staring at the tree canopy. It was quite stunning (Example 15).

However, as this example shows, the interpretative appreciation of the game does not involve recall of violent imagery. Players' capacity to reflect on the wider characteristics of the virtual world highlighted factors that rarely feature in classification judgments. In fact, in general the diary answers reflected a move away from interpreting the violent images such as corpses or the killing of zombies to a focus on the interpretation of other elements of the game external to conflict. Of course we also acknowledge that the interpretative and configurative activity can always take place simultaneously, since, as Klevjer has already argued, the events in games are communicative as they are being performed [25]. However, we are exploring whether the player's attentional focus is likely to put forward one dominant player activity during a specific game event that may considerably change the player's experience of that event.

3.2 Game Versus Fiction

The third element of the feedback loop consists of the schemata or the mental images which function as a standard or reference to compare perceived stimuli. We have schemata for many things (ourselves, others, objects, events, social constructs etc.) that exist at different levels of abstraction (see [19] for an interesting distinction). Schemata help us make sense of what we perceive and guide our attention, expectations and behaviour. During media usage they may help us make assumptions and inferences about characters and their emotional states, they may help us create a story from a plot by applying cause and effect logic, and they may have us craft hypotheses about what will happen next thereby triggering suspense or curiosity [6].

In the game-play feedback loop we propose a division of schemata into two realms that cover the most essential properties of the game-play experience. Lindley and Sennersten already proposed a hierarchical, time structured organization of schema structures in games. On the lower level (the smallest scale of time units) they speak of game-play schemata that are used for guiding and making sense of player's selection of game moves. On the higher level (larger pre-designed time structures) they speak of story schemata, used for comprehension of story structure, and game structure schemata, used for comprehension of thematic changes or the changes in difficulty [28]. Although this organization of schemata makes sense at first glance, the hierarchical division of player activity (lower level) and story or game genre comprehension (higher level) is unsatisfactory. As we have seen, players continuously borrow from 'lower-level' direct audio-visual clues and 'higher-level' genre conventions, cause and effect correlations, and game conventions for both action and comprehension.

We therefore propose to discard the hierarchical organization of schemata and instead propose a model that organizes the schemata into two coexisting realms that are more exclusive to game-play. Lindley and Sennersten already hint upon this with their explanation of game structure schemata and story schemata and the way that a player's activity can be interpreted from different perspectives [28]. The two coexisting realms are distilled from the idea that games combine elements of both classical games and stories or fictional worlds. Game-play is attributed meaning between playing in the actual (game) world, and acting in a fictional world.

Several theorists have emphasized these two realms especially in early efforts to explore and define players engagement with games. McMahan has for instance emphasized the player's diegetic ('immersion') and non-diegetic ('engagement') involvement in the game [29]. Similarly Ermi and Mäyrä identified an imaginative and challenge based immersion [10] and also Adams and Rollings divide immersion into narrative (imaginative) immersion and tactical and strategic (challenge based) immersion [3]. Perhaps most notably though, this distinction was made apparent by Juul who explains game-play as an experience that involves playing with real rules in fictional worlds [24].

We are interested in the use of two different sets of schemata during play. One set makes sense of, and guides the perceived and executed actions as part of a coherent fictional world. We call these the *fiction schemata*. The other set makes sense of, and guides the perceived and executed actions or *game schemata*. During game-play we tap into both these sets to guide and explain different elements of the game. In referring to Juul's example of *Donkey Kong* (1981), we may tap into our fiction schemata to comprehend Donkey Kong kidnapping Mario's girlfriend, but at the same time we may tap into our game schemata to comprehend why Mario has three lives [24]. Sometimes one set of schemata may be more prominently used than the other but most recent digital games will at least require the use of both these schema sets during game-play. Just as the configurative and interpretative activities, the fiction and game schemata can be viewed as two extremes of a continuum. Considering the different ways that game content can be attributed meaning with the use of different schemata is essential when classifying games. When players for instance dominantly understand and guide their violent killing behaviour through the use of game schemata, they are likely to recognize that they are playing, not killing. Studying the dominant use of schemata per age group may then lead us to propose very concrete recommendations for the classification of games. Further and more focused research is required on our part to back up these recommendations with more decisive results.

Diary entries revealed the use of these different schemata by participants. In one example, a participant commented on a moral dilemma encountered during play. Besides blood thirsty zombies, *Dead Island* also presents the player with human enemies which the player has to kill in order to progress in the game. The comprehension of this event with the use of fiction schemata clearly produced a dilemma. However, since the player is *forced* to kill these human characters, the player finally complies and contextualizes the event with game schemata that tell him the game put these opponents in the way of his objective and therefore have to be killed.

> I felt bad about shooting the policemen, and during this section I thought that I was on the wrong side ... I tried to sneak around the policemen at one point, to avoid killing them, but they have an uncanny knack of spotting the player. After this I decided to simply shoot them. Even though I felt a bit bad about it, it seemed as if the game wanted me to kill them so I did ... I don't recall the game supplying a good reason why I should kill the policemen either, other than that they were in the way of my objective. By this point I had come to dislike my character and had disassociated myself from him (Example 16).

This example clearly shows the shift from the use of fiction schemata to game schemata. In the end the player does not make use of fiction schemata anymore to create a coherent and emotionally involving fictional world. He understands there is no fictional function to the characters individually, their hostility is indicative only of the mechanics of the game. There is nothing to be gained from trying to connect to these hostile characters. He therefore decides to understand the killing of these characters as simply overcoming another challenge that the game puts in front of him, similar to the way that other games do. It does not matter if those opponents are humans, zombies or something else.

By accounting for both the interpretative/configurative activity of the players and the game/fiction schemata that they use to comprehend and guide their activity, we are able to get a better understanding of the distinctive elements that make up the game-play experience. Again, by simply turning these two continuums into an ordinate system (see Figure 1), we can pinpoint the players' experiences along two axes. As shown, some game sequences may then require players to tap more into game schemata than others. Some sequences may involve the player much more in the activity of configuration than others. And some groups of players (perhaps under a certain age) may prove to make more use of fiction schemata than other groups of players.

3.3 Undeniable and Deniable Content

As the last example in the previous section shows, the game sometimes require us to take certain (configurative) action or take notice of a specific element in the game because not taking that action or ignoring that element means automatic failure. Leino refers to these elements as *undeniable* which constitute the build in physics of the game that the player cannot deny without significantly decreasing his possibilities to act or progress in the game [27]. For example, the famously controversial *Call of Duty: Modern Warfare 2* (2009) mission *No Russian* requires the player to tag along on a terrorist attack in an airport that leads to the death of many innocent civilian characters. Although the player does not actively have to participate in the killing, he is also unable to try and prevent it, since turning against the terrorists immediately leads to a failed mission.

On the other hand, games may also present us with *deniable* elements that we can ignore without such consequences. In a RPG like *The Elders Scrolls V: Skyrim* (2011) for instance, the player can choose to pillage villages and kill innocent people and animals. However, the player does not have to do this in order to advance in the game. In fact, the game system punishes him for these acts by giving the player a bad reputation and turning the other characters against him. Similarly, in *Dead Island* one of our participants stumbled upon a hidden hut with some disturbing imagery. The fact that neither the other players, nor the research team had encountered this hut shows that this content is deniable since the other players were all able to finish the game without it.

Although game-play will ultimately remain a subjective experience, there are certainly triggers in the stimulus that guide our perception, behaviour and meaning attribution in a certain way. Taking notice of these deniable or undeniable triggers (during play) can also considerably aid the construction of a more exhaustive classification system. As Juul's *Donkey Kong* example shows, there are game elements that are more likely to be assimilated in game schemata such as the fact that Mario has three lives or Heads-Up Display elements such as Health level, or Score count [24]. For this reason we are currently analysing the player's gaze behaviour with eye-tracking equipment that helps us draw inferences about the player's focus during game-play. One player in our diary study for instance remarked how the stamina bar disrupts his game-play experience by making him aware of the artificiality of some game elements.

> The developer probably would have added this system to add a strategic element to fights, but in my experience it takes away from the game as it just makes me aware of the HUD (Example 17).

4. Discussion

It becomes apparent from these diary entries that the attentional focus of these players lays on their agency and the ludic elements of the game. This result helps to focus the agenda of the remainder of the study when several other methods are being employed in conjunction with these diaries. Taking the game schemata into consideration may then certainly lead to a re-evaluation of game sequences. It could for instance be argued that game schemata or 'elements that defy conventional [fiction] schemata' can disrupt a player's 'immersion in the text' or have him assume 'an extra-textual perspective' [9]. This means that because the player has to tap into game schemata to understand some elements of the text he is not as involved in the violent fictional representation onscreen as a film viewer who only uses fiction schemata. As one of our diary study participants says:

> It would seem strange to me that in a world overrun by zombies, people would be selling things, but money seems to be an easy game mechanic to utilize, even if it is unrealistic (Example 18).

However it could also be argued that the use of both these sets of schemata does not disturb an immersion in the fiction since they complement each other in the understanding of the text. In this case the additional level of game elements may even enhance immersive play since the player is required to have a higher level of attention. As one of our participants wrote about the use of a stamina bar in *Dead Island*:

> I believe these elements [the stamina mechanics] are added to give it [the game] that much more realism and to also increase your horror/stress/worry. It's all designed to heighten the urgency and fear you have, as a real human, fighting zombies (Example 19).

Our current use of eye tracking, game-play metrics, biometric data and game-play commentaries will help to further clarify what the player does, what his gaze attunes to, what his bodily responses are and how he makes sense of this experience. This will certainly help in testing these different hypotheses towards a further understanding of the game-play experience.

Similarly, by accounting for the configurative activity of the player together with the interpretative activity, the classification process can start to articulate a broader range of experiential elements. As Grodal for instance argues, the configurative activity of the player make his affective responses to games much more

dependent on his own active coping potential rather than on the passive appreciation of a character's coping potential (as in films). This may mean that possible 'aggressive game-induced arousal is (...) more closely linked to the player's own activity and less directed at hostile others than in films' [18]. This could make the game-play experience an exercise in 'playful mastery' where, instead of the representational content, the level of skill is related to the elicited arousal of the player.

Similarly, Goldstein explains that a player's (perceived) control over the events (such as violent images) can reduce the emotional or stressful effects of these events [17]. This is explained through the use of the arousal equilibrium theory that argues that we always seek out media (sequences) with the appropriate level of arousal to achieve an optimally arousing experience. As Grodal states: 'We [players] can seek out stimulating spaces when bored and take shelter in some other spaces when over-stimulated and in need of rest [18]. One player shows how he uses the environment to control the zombie attacks and therewith the amount of arousal he experiences.

> The first thing I do is scout the local terrain to determine if there is anything I can use (doorways for choke points), obstacles I can hide behind, pools I can kick zombies into. Then I see if there is an escape route before planning how to manage the zombies that are around. If there is more than one, I will try to pull them separately. If more than one comes I contemplate running away or manoeuvring to the best tactical position (Example 20).

The contrary can also be argued. The ability of the player to actively participate in a violent representation could induce aggressive behaviour because it might enhance social learning, the priming of violence related information nodes, or just generally arousal levels that can form the basis of violent acts [38]. One participant for instance showed his anger and lust for payback after a plot twist in the game that revealed that a befriended character was not that friendly after all.

> I definitely felt cheated and a bit angry after all I've been through in the game, bending over backwards risking life and limb to buy my characters passage off the island. I am really looking forward to some payback in the last chapter; I will be quite pissed off if I am to be denied that, but it looks like I will find out soon enough (Example 21).

It should be noted that this certainly does not mean that in-game aggressive behaviour is translated and repeated in 'real life'. In fact, one participant remarked that: "In the background is the feeling that you are playing a game". An indicative statement from one of the participants clearly echoed the relationship between narrative and game-play when he commented:

> I was a bit disappointed in the way the narrative ended, but I thought the final game-play was fine … I felt a sense of accomplishment as I had overcome the challenges that the game had set me (Example 22).

Finding the exact implications of the distinctive experiential properties of game-play in regard to the experience of violent content obviously requires more research. Research that we're currently conducting in New Zealand to support a more exhaustive classification process of game content. In fact, studying the demands that games put on their players needs on-going theorization and experimentation, since the continuous evolvement of games, game systems, players and context means that impact differs over generations. However, by highlighting and structuring those elements of game-play that are currently unaccounted for in the classification ratings, this model functions as an important step in finding the implications of violent game content. From here we aim to apply the model to 1) structure further accounts of actual, lived and directly reported experiences of play, 2) locate where current classification processes concentrate their assessments and value judgments, and 3) identify areas of research that will bridge the gap between abstract knowledge existent in the Game Studies community and more concrete legislative treatment of games in society.

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6. REFERENCES

[1] Aarseth, E. *Cybertext. Perspectives on Ergodic Literature*, London: The John Hopkins University Press, 1997.

[2] Aarseth. E. "Genre Trouble: Narrativism and the art of simulation," in N. Wardrip-Fruin and P. Harrigan (Eds.) *First Person: New Media as Story, Performance and Game*, Cambridge, MA: MIT Press, 2004.

[3] Adams, E., & Rollings, B. *Fundamentals of Game Design*. Upper Saddle River, New Jersey: Pearson, 2007.

[4] Anderson, C.A. "An update on the effects of playing violent video games*," Journal of Adolescence, 27* (2004), pp. 113-122.

[5] Anderson, C. A., & Bushman, B. J. "Effects of Violent Games on Aggressive Behaviour, Aggressive Cognition, Aggressive Affect, Physiological Arousal and Prosocial Behaviour: A meta-analytic review of the scientific literature," in *Psychological Science,*12 (2001), pp. 353-359.

[6] Bordwell, D. *Narration in the Fiction Film*, London: Routledge, 1985.

[7] Calleja, G. *In-Game: From immersion to incorporation*, Cambridge, MA: MIT Press, 2011.

[8] Cubitt, S. *The Cinema Effect*, Cambridge, MA: MIT Press, 2004.

[9] Douglas, J. Y. & Hargadon, A. "The Pleasures of Immersion and Engagement: schemas, scripts and the fith business," *Digital Creativity*, 12 (3) (2001), pp. 153-166.

[10] Ermi, L. & Mäyrä, F. "Fundamental Components of the Gameplay Experience: Analysing immersion," *Proceedings of DiGRA 2005 Conference: Changing Views – Worlds in Play*.

[11] Eskelinen, M. "The Gaming Situation," *Game Studies, 1(1)* (2001) www.gamestudies.org.

[12] Frasca, G. “Simulation versus Narrative: Introduction to ludology,” in J. P. Wolf & B. Perron (Eds.) *The Video Game Theory Reader*, New York: Routledge, 2003.

[13] Ferguson, C.J. “Evidence for Publication Bias in Video Game Violence Effect Literature: A meta-analytic review,” *Aggression and Violent Behaviour*, 12 (2007), pp. 470-482.

[14] Ferguson, C.J. “The School Shooting/Violent Video Game Link: Causal relationship or moral panic?” *Journal of Investigative Psychology and Offender Profiling*, 5 (2008), pp. 25-37.

[15] **Garnham, N.** *Emancipation, the Media, and Modernity: Arguments about the media and social theory*, New York: Oxford University Press, 2000.

[16] Gentile, D.A., Lynch, P. J., Linder, J. R., & Walsh, D. A. “The Effects of Violent Video Game Habits on Adolescent Aggressive Attitudes and Behaviours,” *Journal of Adolescence,* 27 (2004), pp. 5-22.

[17] Goldstein, J. “Immortal Kombat: War toys and violent video games,” in Goldstein, J.H. (ed.). Why we Watch: The attractions of violent entertainment, Oxfor University Press, 1998, pp. 53-68.

[18] Grodal, T. “Video Games and the Pleasures of Control,” in D. Zillmann & P. Vorderer (Eds.) *Media Entertainment: The Psychology of its Appeal*, Mahwah, New Jersey: Lawrence Erlbaum Associates, 2000, pp. 197-214.

[19] Hastie, R. “Schematic Principles in Human Memory,” in E. T. Higgins, C. P. Herman, & M. P. Zanna (Eds.) *Social Cognition: The Ontario Symposium*, 1 (1981), pp. 38-88.

[20] Huizinga, J. *Homo Ludens. A study of the play element in culture*. Boston: Beacon Press, 1955.

[21] Hodge, R. & Kress, G. (1988) *Social Semiotics*, Cambridge: Polity Press.

[22] Holland, N. N. The Brain of Robert Frost: A Cognitive Approach to Literature, New York: Routledge, 1988.

[23] Juul, J. “The Game, the Player, the World: Looking for a heart of gameness,” in M. Copier & J. Raessens (Eds.) Level Up: Digital Games Research Conference Proceedings, Utrecht: Utrecht University, 2003, pp. 30-45.

[24] Juul, J. Half Real: Video games between real rules and fictional worlds, Cambridge, MA, MIT Press, 2005.

[25] Klevjer, R. “In Defence of Cutscenes,” *Proceedings of Computer Games and Digital Culture Conference*, Tampere: Tampere University Press, 2002.

[26] Kontour, K. “Revisiting Violent Videogame Research: Game studies perspectives on aggression, violence, immersion, interaction, and textual analysis,” *Digital Culture & Education*, *1(1)* (2009), pp. 6-30.

[27] Leino, O.T. “Emotions about the Deniable/Undeniable: Sketch for a classification of game content as experienced,” *Situated Play, Proceedings of DiGRA 2007 Conference.*

[28] Lindley, C.A. and Sennersten, C.C. “A Cognitive Framework for the Analysis of Game Play: Tasks, Schemas and Attention Theory,” presented at the Workshop on the Cognitive Science of Games and Game Play, Cogsci 2006, Vancouver, Canada.

[29] McMahan, A. “Immersion, Engagement, and Presence: A method for analyzing 3-D video games,” in M. J. P. Wolf & B. Perron (Eds.) *The Video Game Theory Reader*, London: Routledge, 2003, pp. 67-86.

[30] Newman, J. The Myth of the Ergodic Videogame, *Game Studies,* 2(1), (2002). www.gamestudies.org.

[31] Pejman M. B. & McAllister, G. “Biometric Storyboards: Visualizing meaningful gameplay events,” *Workshop CHI 201. ACM.* Vancouver, Canada, 2011.

[32] Poels, K., IJsselsteijn, W.A., de Kort, Y.A.W., and Van Iersel, B. (2009). Digital Games, the Aftermath. Qualitative insights into Post Game Experiences. In R. Bernhaupt, R. (Ed.). *Evaluating User Experiences in Games*. Berlin: Springer. accepted/in press.

[33] Russell, J. (2006) Book of the Dead: The complete history of zombie cinema, Godalming, UK: FAB.

[34] Salen, K. & Zimmerman, E. *Rules of Play: Game design fundamentals*, Cambridge, MA: MIT Press, 2004.

[35] Schott, G. (2011) Digital Dead: Translating the visceral and satirical elements of George A. Romero’s *Dawn of the Dead* to videogames, in C.M. Moreman & C.J. Rushton (Eds.) *Zombies are Us: Essays on the humanity of the walking dead*, London: McFraland & Company, Inc., Publishers.

[36] Schott, G, & Burn, A. (2007) Fan Art as a Function of Agency in Oddworld Fan-Culture, in A. Clarke & G. Mitchell, *Videogames and Art*, London: Intellect.

[37] Schott, G. & Van Vught, J. “Replacing Preconceived Accounts of Digital Games with Experience of Play: When parents went native in GTA IV,” *Think Design Play. Proceedings of DiGRA 2011.*

[38] Sherry, J. L. “The Effects of Violent Video Games on Agression. A Meta-Analysis,” *Human Communication Research*, 27 (3), 2001, 409-431.