Fear, Loss and Meaningful Play: Permadeath in DayZ

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Abstract

This article interrogates player experiences with permadeath in the massively multiplayer online first-person shooter *DayZ*. Through analysing the differences between 'good' and 'bad' instances of permadeath, we argue that meaningfulness – in accordance with Salen & Zimmerman's (2003) concept of meaningful play – is a critical requirement for positive experiences with permadeath. In doing so, this article suggests new ontologies for meaningfulness in play, and demonstrates how meaningfulness can be a useful lens through which to understand player experiences with negatively valanced play. We conclude by relating the appeal of permadeath to the *excitation transfer effect* (Zillmann 1971), drawing parallels between the appeal of *DayZ* and fear-inducing horror games such as *Silent Hill* and gratuitously violent and gory games such as *Mortal Kombat*.

Keywords

DayZ, virtual worlds, meaningful play, player experience, excitation transfer, risk play

Introduction

> It's truly frightening, like not game-frightening, but oh my god I'm gonna die-frightening. Your hands starts shaking, your hands gets sweaty, your heart pounds, your mind is racing and you're a wreck when it's all over.

There are very few games that – by default – feature permadeath as significantly and totally as *DayZ* (Bohemia Interactive 2013). A new character in this massively multiplayer online first-person shooter (MMOFPS) begins with almost nothing, and must constantly scavenge from the harsh zombie-infested virtual world to survive. A persistent emotional tension accompanies the

requirement to constantly find food and water, and a player will celebrate the discovery of simple items like backpacks, guns and medical supplies. By accruing such gear, the player incrementally makes their character powerful and protected, opening new possibilities for play. In most cases achieving this takes hours of difficult play, because if you die in *DayZ*, your character is permanently removed from the game; and this 'character death' is not rare, but frequent and often sudden.

This article interrogates the widespread appeal of *DayZ* in the context of what might appear to be an unrewarding player experience. Its players are presented with no explicit goal and a never-ending struggle to scavenge supplies to survive, all the while risking the permanent loss of their character. This seemingly bleak form of gameplay has seen *DayZ* sell millions of copies, and has spawned a new genre of similarly harsh survival multiplayer games. Our analysis here is based on a player motivations and experiences survey consisting of 41 quantitative and 10 qualitative questions, which attracted 1704 responses. Our thematic analysis identifies that the experience of character death elicits extremely strong negative emotions in players, yet is viewed as a core positive feature by the overwhelming majority of players. We expand on our prior work (Allison et al. 2015) through further interrogating the ways that players make and take meaning from their deaths, exploring the factors that make the overall player experience of *DayZ* enjoyable in the context of permadeath, contrasted against the factors that can sour individual instances.

Our results show that *meaningfulness* is a critical requirement for players to perceive a permanent character death as a 'good' experience rather than 'bad', corresponding with Katie Salen and Eric Zimmerman's concept of *meaningful play* (2003). That is, the player must feel that their character's death was properly integrated into the game context, as well as having a discernible and appropriate cause, being congruent with the game's imaginary, the player's own narrativizing (within the 'story generation' of *DayZ* play). This contribution illuminates why deaths due to glitches and players who 'kill on sight' were considered antithetical to the enjoyment of *DayZ,* as they erode the player's sense of agency and the coherency of the game world. In doing so, this article suggests new ontologies for meaningfulness in play, and demonstrates how meaningfulness can be a useful lens through which to understand player experiences with negatively valanced play.

We conclude by discussing the way in which players' accounts suggest the psychological and aesthetic mechanisms by which permadeath contributes to their enjoyment. We relate its appeal to the *excitation transfer effect* (Zillmann 1971), which holds that negatively valenced arousal from emotions such as fear can intensify positive experiences such as survival and social interactions with other players, creating a more vivid and intense experience. In this way, we see how the appeal of the harshness of death in *DayZ* can be compared to both fear-inducing horror games such as *Silent Hill* and gratuitously violent and gory games such as *Mortal Kombat*, and indeed to horror and disturbing fiction in other media. Finally, we relate our findings to the attraction of risk in real-world play as a mode of practice and self-discovery.

Prior Work

As this special issue has identified, there is limited prior work on permadeath in games due to its rarity in commercial games until recent years. Death in games more broadly is similarly understudied, with notable exceptions being Emily Flynn-Jones' in-depth analysis of in-game death (Jones 2015) and Lisbeth Klastrup's discussion of death and dying in *World of Warcraft* (2008). In this, Klastrup notes that 'in most game worlds, dying is an activity similar to a number of other repeatable activities that occur as part of the everyday life in the world […] a risk-free endeavour' (2008: 144). Klastrup draws a distinction between the fact of avatar death in itself and the penalty the player pays for dying. She points out that the latter is what truly informs the experience, and cautions game designers to ensure character death is not so harsh that it might discourage novice players. This has certainly been an increasingly orthodox view in game design. Emily Flynn-Jones notes that it is overwhelmingly common in digital game design to incorporate the death of an avatar as part of 'the most effective way of finishing the game' (2015: 50), as the character is killed repeatedly in a process of failure and repetition. In his review of Klastrup's (2008) chapter, Richard Bartle similarly notes that 'the word death is merely the label that has, for historical reasons, become attached to the condition of "mini-game over" […] their version of "death" has none of the anguish or gravitas that accompanies real-world death' (Bartle 2010). Without suggesting that permadeath brings game-death close to real death in any way, existing work has firmly established that permadeath can be accompanied by significant anguish.

In our prior work, we have discussed different elements of death in *DayZ*. Based on an analysis of online communities and interviews with players (Carter, Gibbs & Wadley 2013), we concluded that permadeath increases a players' sense of personal investment in their character, but focused on the way that *DayZ* play uniquely invokes moral dilemmas for players due to the consequential nature of their decisions, which subsequently intensifies social interactions and turns them into a space for play. Expanding on this, we have more recently examined the dimensions of 'feeling bad' due to killing in *DayZ* as evidence of players' moral anguish, concern, and guilt around killing others in the game. We attribute this to players recognizing how unpleasant the experience of dying is to *DayZ*, and their inability to always adhere to personal and community norms around killing (Carter & Allison 2016). In a personal reflection of a permadeath playthrough of Minecraft, Brendan Keogh echoes the conclusion in Carter et al. (2013) that permadeath has a sustained effect on the player's sense of personal investment and the weight of their decisions: 'the true effect of perma-death is not simply in the character's death, but in how it drastically alters the player's lived experience of the character's life' (2013: 2). In this sense, a feature that may in fact never come into play (Keogh retired from his Minecraft playthrough without his character dying) can nevertheless radically alter the tenor of the game.

Ultimately the key contribution of this article is the dual interrogation of both 'good' and 'bad' experiences of permadeath within the same title. To do this we draw principally on Katie Salen and Eric Zimmerman's (2003) concept of meaningful play, defined as occurring 'when the relationship between actions and outcomes in a game are both discernable and integrated into the larger context of the game' (2005: 34).

DayZ

DayZ was first a 'mod' of the first-person shooter game *ARMA II* (2009), developed by Bohemia Interactive. *ARMA II* is often referred to as a military simulator as it is substantially more realistic than other games in the FPS genre, depicting day-night cycles, changing weather, realistic projectile trajectories, and consequently more accurate avatar injuries. This point of difference is somewhat due to *ARMA II* using the *Real Virtuality* game engine - also developed by Bohemia Interactive – which is designed for military use in training simulators. In consequence, *DayZ* imports many of these unusual game design patterns.

First released in 2012, *DayZ* was an immediate success. It quickly propelled the aged *ARMA II* (which was required to play *DayZ*) to the top 10 bestselling games on the digital distribution platform Steam for months, and gaming media became saturated with accounts of unique emergent experiences that came out of this 'story simulator'. At the time, PC Gamer referred to *DayZ* as 'one of the most important things to happen in gaming this year' (Lahti 2012), and Kotaku celebrated it for 'giving PC gamers an experience they weren't getting elsewhere, but which they were clearly hanging out for' (Plunkett 2012). A standalone version was released as an early alpha in December 2013, which has since sold 3 million copies.

Life, in *DayZ*, is precarious. A player's character constantly requires food and water to survive, and can become sick from illness (such as eating rotten foods), bleed to death from an otherwise minor wound, fall off a ledge and break their legs, or be killed in an instant by a distant sniper. Play begins with few items (currently only a torch and rags) and limited capacity to carry anything scavenged from the virtual farmhouses, villages, and cities of the virtual world. Scavenging must be done quietly, and with care, as roaming zombies can quickly injure a surprised player. Surviving at this stage is tough, with play tense, and it can often take several hours of scavenging for the player to reach a stage of security in the game world.

Slowly, a player will find items that improve the chances of their character's survival. Backpacks allow players to carry more items and stock up on supplies. Knives allow players to open cans of food without spilling the contents; bottles let players carry water with them rather than constantly seeking out water sources; bandages heal wounds more effectively; antibiotics cure sickness; and matches and stoves allow players to cook meat hunted in the wild. In military bases, police stations and barns, players can find weapons (rarely with ammunition) that significantly improve their ability to defend themselves. This security opens up access to new kinds of play in the game: hunting or helping other players, restoring vehicles, and a huge variety of personal goals beyond surviving.

To die is to lose all this advancement. Death is sudden, impactful, and harsh. The dead character's corpse remains where it drops, available to be looted by other players (and likely, the killer who caused the death). The player respawns as a new character, with none of their former advancement, and must begin again in the harsh environment. If quick enough, the player can

find their previous corpse and collect their dropped items, but the vast 225km^2 virtual world makes this typically unfeasible without organised support.[1]

Method

To study the appeal and experience of this dramatic reconfiguration of the death mechanic in the first-person shooter, we deployed a survey replicating and updating Yee's (2006) template to suit the affordances and player practices of *DayZ*. Our final questionnaire included 41 questions addressing the player's enjoyment of or behaviour towards game elements and situations, each asked on a five-point Likert scale. Further, 10 open-response questions were included that asked players to elaborate on favoured and disfavoured aspects of *DayZ*, and to describe player interactions that they had experienced. We found respondents to be surprisingly generous in the detail of their responses.

The survey received 1,704 completions from 64 countries. The average age was 23.3 years (SD=6.4), with 28.8% of participants selecting '18' as their age; the lowest option available in the survey, which was intended and advertised for players over the age of 18 due to human-research ethics requirements. We expect that many of these players were actually under 18. Less than 30% of the sample was over 25 years old. Of these, 98.4% were male, which is the highest gender bias we are aware of in a games studies survey. While previously we have speculated that this is a result of advertising the survey in the *DayZ* gamer community (on Twitter, Reddit and the *DayZ* forums) (Allison, Carter & Gibbs 2015), a recent comprehensive gamer motivation survey released by Nick Yee from games consumer research company Quantic Foundry (based on 270,000 responses) estimates only 4% of the players of tactical shooters like *DayZ* are women (Yee 2017).

For this article, we conducted a thematic analysis of the open responses to questions that related to dying in *DayZ*. Our analysis focused on qualitative responses to the question 'How do you think the increased consequence of death affects your experience playing the DayZ standalone?', with reference to the user's quantitative response to the question 'When you play *DayZ*, how

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[1] Unlike many online multiplayer games, *DayZ* does not assign players into explicit teams. Players can choose to team up, but there is no in-game mechanism that reflects or enforces these arrangements. Forming persistent groups often requires coordination through online forums outside of the game world, and so is the exception rather than the norm.

enjoyable do you find the consequential nature of death?' Salen and Zimmerman's concept of *meaningfulness* emerged through this process as a suitable sensitising concept (a way of seeing, organising and understanding experience in theory development, Bowen 2006) . Consequently, we adopted Salen and Zimmerman's two key concepts of *integration* and *discernability* as core themes in our analysis of the survey responses.

Results

The quantitative responses to the question 'When you play DayZ, how enjoyable do you find the consequential nature of death?' clearly demonstrate the substantial contribution of permadeath to *DayZ*'s appeal. Results to this and several other questions show that players overwhelmingly viewed character death in *DayZ* as an enjoyable part of the game, despite the negative emotional experiences players provided accounts of. Over half of respondents rated the consequential nature of death 'very enjoyable', and it was one of the most positively rated features of *DayZ*'s design. Of note, even many of those who rated their enjoyment of character death at a 1 out of 5 ('Not enjoyable at all') still described it as a positive feature of the game; not enjoyable, but positive.
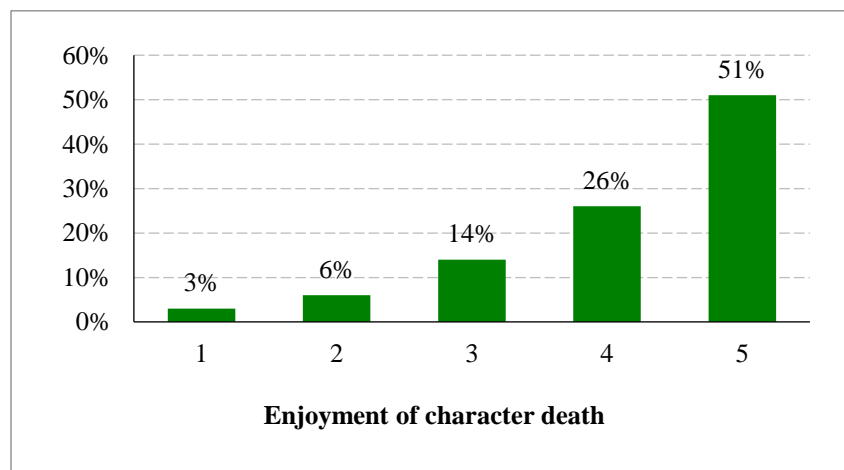

Table 1. Likert responses to the question, 'When you play *DayZ*, how enjoyable do you find the consequential nature of death?'

The Experience of Permadeath in DayZ

What is immediately clear from the responses is that permadeath provides players with intense emotional experiences. Pervasively, players described feelings not usually described in leisurely game play: anxiousness, fear, tension, adrenaline, paranoia, devastation. For example:

> the constant threat of perma-death makes for a sweaty-palmed gaming experience. Anxious, tense, freaking out at the smallest noises/movements. It's frickin' awesome.

Throughout, players referred to the *fear* of death as what 'makes the game exciting', citing 'the adrenaline when actually fighting' as a profoundly different and unique experience not found in other games. This experience can be so significantly negative and emotionally draining, that several players said they 'quit for the day' or 'stop playing for a couple weeks' after it occurred. The effect was often characterised by a strong sensation of immersion, or feeling like the game situation was more real than most games.

> It [permadeath] adds to the adrenaline response to combat/stressful situations, it really tricks your brain into thinking situations are real and brings you away from the screen and into the game world.

This *emotional immersion* brings a player's emotional experience closer to the imagined emotional experience of their character in the game world. This is somewhat similar to the experience of horror games, which put the character in a frightening situation in order to scare the player, although *DayZ* achieves the effect using the real consequences of permadeath rather than the aesthetic scares of a typical horror game. This brings into contrast the emotional dissonance of most military FPS games, in which players instruct their characters to unrealistically act without fear or cowardice, reducing the coherence of the game's imaginary. In *DayZ*, the (real) fear of the player and the (imagined) fear of the character align:

> When your character is in danger you feel in danger. Your heart races and you get an adrenaline rush.

We note though that not all players felt this way. Literacy about the *DayZ* world - where items spawn; how to avoid zombies; how to repair wounds - reduced the consequences of dying in the game. As such, for some, permadeath had little influence on the game:

I have played the mod a lot, so death just means 15 mins to get back to were i was basicly.

This is because when you die, your body drops to the ground where it can be looted by other players. This means that when you respawn, if you run directly to the location of your death, you can find your corpse and collect any remaining items (as killing players often have duplicates of items like backpacks and water bottles). Other players similarly reduce the negative experience of dying by playing in a team, so that – assuming at least some of the team remains alive at the end of a conflict – a single death means only a long and mundane walk, rather than a repeat of hours and hours of play.

Beyond providing extremely emotion-laden experiences, we found that permadeath meant that many players engaged in a role-play like activity. As we have argued elsewhere (Carter, Gibbs & Wadley 2012) permadeath in *DayZ* is a form of character death, which creates a clear demarcation between each life. Players use this opportunity to create different backstories for their character, play in different styles, and follow clear trajectories of play. Players pervasively referred to each life as a unique and separate story or journey, due to the clear demarcation provided by permadeath.

every new start is a completly new story that you live through.

Afterall every death is a beginning of a new journey

This has the effect of providing a trajectory for play: the initial tense experience when resources are scarce, a growing command over the environment and others, before inevitable death. The lack of end-game in *DayZ* means that players could in theory just 'gear up' and hide in the forest, indefinitely. Instead, many players described a process by which they grow bored when fully geared, at which point they begin risking it all, which one likened to gambling:

Its like gambling with money(witch i dont do). Its makes it more intene you lose something you worked for. Most of the times positively, because the game is endless.

Once I have the gear I like, I feel comfortable with 'Retiring' a character by getting into gunfights with other geared survivors. If there was little to no consequence for death, I wouldn't feel it necessary to be stealthy or to play intelligently.

When players respawn, permadeath means that they are excited about finding out what this next story will be. Indeed, *DayZ* is often referred to in the gaming press as a story 'generator' (Caldwell 2014), and several respondents stated that the core appeal of *DayZ* is that 'you create your own stories'.

> I get to think "what will be the life of this character?". "Will he die of starvation again, or being beaten to death by zombies? Or will he or she be executed in a field, by some lonely shed?"

Others more explicitly roleplay, deciding a back-story when they begin and attempting to play that life accordingly: as an altruistic healer; or sadistic Joker-esque character.

It is thus not simply the configuration of a high penalty for dying that constitutes the experience of permadeath in *DayZ*, but a confluence of factors. Death is ever-present in *DayZ*; players are always on the brink of dying, either through starvation, sickness, or combat. No matter how well-prepared or well-geared a player, permadeath is always potentially immediate. The particular disjuncture between each *DayZ* character creates a clear identity split which encourages new forms of roleplay and story generation, atypical for the genre, while the sandbox nature of play provides insufficient long-term appeal for survival, paradoxically pushing players towards their inevitable permadeath – and the end of their current story.

Permadeath is (Meaningfully) Integrated with Play

Salen and Zimmerman's concept of meaningful play suggests that the relationship between action and outcome has to be integrated into the broader context of play in order to be meaningful. An example they provide is how moves in Chess at the outset of a game have an influence on the way the entire game unfolds (2003: 35). While their examples each fit highly formalised games with clear win-states or levels – which is not the case for the sandbox *DayZ* – our results indicate that permadeath in *DayZ* is clearly integrated within the larger context of play. As noted by Keogh, 'the true effect of perma-death is not simply in the character's death, but in how it drastically alters the player's lived experience of the character's life' (2013: 2).

The clearest example of this is the way that players described how permadeath altered their approach to playing and navigating about the game world:

> makes me more safer not guns blazing I wouldn't play it otherwise.

> Where you would normally sprint around without a care in the world, you might now carefully creep from cover to cover, constantly on the lookout for another person.

> It makes me always think through my decisions and be constantly evaluating the risk I'm taking and the potential rewards

The way in which permadeath affects *DayZ* play by making players more cautious and less violent alters, and is integrated with, the culture of the game. Whereas a player in a strictly competitive online shooter such as *Halo* will typically run directly and brazenly towards combat, a *DayZ* player may lie prone for minutes waiting to see if the coast is clear. As well as offering players a different way of experiencing movement about the virtual world, many players reported feeling that it created a more realistic simulation of a zombie apocalypse:

> The effect is that players tend to become more serious in playing and fits well to the survival genre of gameplay

> It makes DayZ feel more realistic like a actual zombie apocalypse … it makes me a more cautious player

Thus, permadeath is not just integrated with the way that people play *DayZ*, but it reflects and reinforces the apocalyptic survival imaginary, imbuing further meaning. The ways in which permadeath facilitates players' creation of roles within this narrative (explored earlier) similarly integrates play and creates meaning. Players refer to a *DayZ* life as a unique 'playthrough'. Death is the end of a story played out over hours of play; dying in *DayZ* is, as one player put it, just 'time to start a new story'.

The integration of permadeath was also clear in the way it 'gives items of value much more value'. A plastic water bottle becomes meaningful to a *DayZ* player because of the way it makes them more self-sufficient, requiring fewer trips to (dangerous) wells and ensuring they remain healthy and can restore health. Players celebrated finding good items thanks to the stress that they could relieve: 'anger from death make the moments of glee like finding a nice gun all the sweeter.' In this way, where permadeath creates highly negatively valenced emotions (such as anxiousness and fear, discussed above), its integration with the broader gameplay also creates

new positive experiences. Finding loot isn't just more valuable, 'finding gear is the fun part of the game'. The threat of dying is scary, but equally, 'Surviving a fight makes me feel awesome.'

In several responses, players referred to the desperate situation of thirst and starvation in *DayZ*; often players will die not from other players, but from being unable to scavenge enough food, weapons or water. Permadeath gives players 'more of an appreciation for the small things', such as finding food or water, which would normally be considered a mundane part of the 'grind' in the game. When players survive a long time, they often recognise a more significant attachment to their characters ('It makes me play much more carefully and truly appreciate an advanced character, even have some kind of connection with it').

Permadeath in *DayZ* satisfies the requirement of meaningful play to be integrated with the game system and outcomes, because the possibility of permadeath impacts every other element of playing *DayZ.* Every action, from navigating the map to discovering loot, entering a building to engaging in a firefight, is weighed in the context of permadeath. As Salen and Zimmerman put it, integrated play like permadeath is 'woven into the larger fabric of the overall game experience: This is how the play of a game becomes truly meaningful.' (2003: 35)

Meaningful Permadeath is Discernable

These examples demonstrate how permadeath creates meaning not only upon dying, but also by being integrated throughout the entire gameplay experience. This has been crucial for grounding the appeal of permadeath in the theoretical concept of meaningful play. However, the second criteria Salen and Zimmerman establish for play to be meaningful - that it is *discernable* – provides an excellent lens through which to understand why some permadeath is 'bad' and some is 'good' in the view of players.

Examples of deaths ascribed as being 'good' in *DayZ* were those in which players died in discernable ways. Despite the incredibly negative emotions brought on by permadeath, for players 'it's cool dying by zombies, hunger or illness'. Zombies are weak, but fighting them can be risky, as the wounds they inflict can become infected, and such a loss of health can be the difference between life and death. However, zombies are also slow and predictable; their movements and aggression clearly recognisable. Hunger and illness in *DayZ* are similarly

discernable to players, where actions (not eating food) have discernable outcomes (starvation, leading to death) - although a lack of player literacy (see Carter 2015) can make features like these frustrating for players.

While for some, 'every death is enjoyable', players often referred to certain specific ways of being killed by other players as 'good'. The notion of a 'fair fight' was often invoked to qualify player deaths as 'good', as well as similar references to 'epic battles'. Discernability is an integral component of a fair fight, as a fair fight is one the player knows they are in. This similarly explains one player's positive account of being 'hunted through buildings for 10 minutes' before being killed, which they described as one of their most memorable gaming experiences. Social experiences that ended in death were also consistently viewed as 'good' permadeath, such as when players were kidnapped or even 'tortured' by other players, as the unique story generated by these interactions provided the player with discernable narrative context for their death, as well as an unusual story to tell.

Overwhelmingly, the main kinds of 'bad deaths' were those in which players were either 'sniped' (being killed, generally in one shot, by a distant player with a sniper rifle), killed due to game crashes or bugs, or (to a lesser extent), when 'killed on sight' by other players who had no intention of interacting socially ('KOS players'). These deaths were variously referred to as 'pointless', 'stupid', 'unfair' and 'meaningless'. Some players who were new to the game and had limited literacy about how to play (such as where food can easily be found) also referred with frustration to deaths they attributed to their own 'incompetence'; wanting to 'play more to get better to the point that the deaths that happen will be really memorable in epic battles.'

Bugs due to glitches are a clear example of play that is not discernable. Examples of glitches mentioned in the survey responses included characters dying or breaking legs when climbing a ladder, the game crashing and a character consequently disappearing, and characters falling off a ledge 'because the movement mechanic is still a bit weird'. In each of these examples, the connection between the player's action (climbing a ladder) and the systems' response (killing the character) is not discernable, or consistent, which makes the action seem meaningless. 'Meaningless' glitches like these threaten to make all *DayZ* play meaningless, as they open the possibility that any action the player takes may result in death for no discernable reason. It is

perhaps for this reason that the occurrence of glitches in *DayZ* – which was released as an alpha (incomplete) game – were so heavily criticised for reducing the coherency of the game world.

Sniping and 'kill-on-sight' behaviour is less clearly problematic, and indeed for some, the possibility of being killed on sight 'anywhere' by a sniper was part of what made permadeath give *DayZ*'s play meaning. However, both featured heavily in responses to the question 'What do you like least about the DayZ standalone?', being cited over 200 times. Ultimately, what both of these types of behaviours do is erode a player's sense of agency: their ability to discern what will happen if they run across a field or approach a player. The interactions with the system (being shot) have discernable outcomes (dying), but it is the lack of agency that players have with *other* players that can make some types of dying by other players be experienced as bad, while others are experienced as good. In the examples given by players of KOS and sniping deaths that they find least favourable many of them draw attention to the location in which it happens:

> The only place that I KOS is in Elektro [a large city]. People go there to PVP on high pop servers, so fair game. ANYWHERE else? Never

> KOS on the east coast since that's not even being a bandit because people don't have any gear there.

> All the times ive been killed by snipers camping near the coast. Where ppl spawn

These show the way that – in the absence of formally designated 'player versus player' zones – players draw on their location in the game in the pursuit of making the reasons for other players' actions more discernable. Along the coast of the game, where new characters begin, there is an expectation that players are not immediately hostile, as most players have only just entered the game and thus offer little value to another player if killed. However, deep in the interior of the game map, near the high-value weapon spawns such as the military base, these expectations change. Most players who have made it this far have good gear, can fight back, and are valuable targets. Death becomes a discernable outcome of their actions: by going to the military base (risk) they get killed (outcome). Players rely on their location in the game world to make player interactions more coherent, and increase their sense of agency. Where they cannot do this, such

as where a player is 'sniping new spawns on the coast', the permadeath mechanic becomes frustrating, and unenjoyable.

In this way, we see how deaths due to glitches and 'kill on sight' players (in certain locations) are antithetical to the enjoyment of *DayZ* as they erode the player's sense of agency and the coherency of the game world. They make play less discernable, and consequently, take away the meaningfulness of play. This is not to say that sniping or killing on sight should be disallowed in *DayZ*, as frustrating as deaths like these can be, the possibility of them is key to the way that permadeath is integrated with every aspect of gameplay. Rather, we draw attention to these 'bad' permadeaths to further highlight how permadeath mechanics are attractive to players as a form of meaningful play.

Discussion

In this article we have unpacked players' highly-charged experiences with permadeath in the zombie-survival MMOFPS. Through analysing player accounts of how *DayZ*'s permadeath affects their play, we have expanded upon our earlier work on permadeath in *DayZ* to show that permadeath is appealing because it is a form of what Salen and Zimmerman (2003) referred to as 'meaningful play'. *DayZ's* play becomes more meaningful when the intense emotional experience of dying is woven throughout the entirety of gameplay and is integrated with the game context. By contrasting 'good' and 'bad' permadeath for the first time, this article has demonstrated how meaningfulness can be a useful lens through which to understand player experiences with negatively valenced ('frustrating', 'annoying' or 'devastating') play, such as with permadeath. Furthermore, our results contribute an expansion of what contributes to being integrated and discernible in meaningful play, such as play needing not just being integrated with the broader play experience, but also the game's imaginary (where permadeath is congruent with a harsh zombie apocalypse) and their own narrativizing in a sandbox title (within the survivalist story-generation of DayZ roleplay).

However, while demonstrating that there is a link between death and broader gameplay, the concept of meaningful play does not account for why the intense negative emotions that permadeath elicits contributes so strongly to the appeal of the game. A clue to this lies in the way

players describe seeking out danger in *DayZ* to avoid boredom. To some extent, this is reminiscent of the theory of flow (Csikszentmihalyi 1990; Chen 2007), which holds that people seek out and enjoy tasks that are difficult enough to challenge their abilities, rather than easier tasks that provide little likelihood of failure. However, whereas flow primarily concerns a level of challenge, the more salient feature of permadeath in *DayZ* is a level of risk. This risk creates real fear, as described by a number of players:

> The death being so real, as far as it can be in virtual reality, makes the game seem more real, makes the fear real and the adrenaline real.

Of course, the attraction of media that is designed to elicit negative emotions such as fear and sorrow is an old question. Two and a half centuries ago, David Hume posed the paradox: 'It seems an unaccountable pleasure, which the spectators of a well-written tragedy receive from sorrow, terror, anxiety, and other passions, that are in themselves disagreeable and uneasy' (1758: 185). Noting that many experiences may be pleasant up to the point that they become painful, Hume posits that both positive and negative feelings are fuelled by the same underlying level of passion and excitement, and thus a positive experience 'acquires force from sentiments of uneasiness' (1758: 132).

What Hume describes is a rough encapsulation of the *excitation transfer effect*, first detailed in psychology by Dolf Zillmann (1971). Zillmann's effect concerns two dimensions of how we subjectively experience a stimulus: arousal and valence. Arousal describes our level of physiological excitement, which may be increased by various kinds of stimuli. Valence describes whether we are attracted (positive valence) or repelled (negative valence) by a stimulus. In excitation transfer, our arousal is increased by a stimulus with a negative valence, but becomes associated with a stimulus with a positive valence, resulting in an overall positive experience that borrows the intensity of a negative stimuli (or vice versa). On a roller coaster, for example, we draw our thrills from our intuitive perception of danger, but experience the thrill as positive due to our awareness that we are in fact safe.[2]

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[2] A later study by Zillmann et al. (1986), replicated by Sparks (1991), found that men's enjoyment of a horror film was positively correlated with their level of distress, as predicted by excitation transfer theory; but that this correlation was not apparent for women. This suggests that the skewed gender ratio among *DayZ* players may be in part because the excitation-transfer

This is consistent with the finding that players described permanent character death as not only compatible with their enjoyment, but a direct cause of it. As discussed, many players noted the feelings of 'adrenaline' and heightened reality that stemmed from their fear of permadeath as the primary reasons they enjoyed *DayZ* more than other games. While it was genuinely frustrating to lose progress, the anticipation of that negative experience meant *DayZ* evoked unusually intense physiological arousal for a digital game, which leant an equivalent intensity to positive experiences of escape, survival and cooperation.

The appeal of *DayZ* may consequently be compared to survival horror games, a genre typified by player experiences of anticipation and dread. In a list of frightening games, the game review website IGN praises *Amnesia: The Dark Descent* as 'a gauntlet of tension, panic and anxiety' (Legarie et al. 2016, p. 2) and commends *Silent Hill 2* for presenting 'real terror and its consequences' (Legarie et al. 2016, p. 2). These descriptions could equally be applied to *DayZ*, and their appeal is equally founded in their ability to elicit uncommonly strong negative emotions in the reassuringly safe context of a videogame. Similarly, hyperviolent games such as the *Mortal Kombat* series draw some of their appeal from depicting stomach-churning acts of gore, including characters being dismembered and flayed alive. As long as the player perceives this action to be unreal, they are able to transfer its heightened stimulation into heightened enjoyment. Notably, studies indicate that inexperienced players, who presumably have a less developed sense of the unreality and abstraction of in-game actions, experience more genuine distress after perpetrating violence in games (Gollwitzer and Melzer 2015; Hartmann et al. 2010).

There is a clear connection between the attraction of disturbing and frightening content in digital games and the popularity of horror fiction. Katerina Bantinaki (2012) advances an alternative explanation of the attraction of such fright-based entertainment: as a form of risk play. People, and in particular children, naturally seek out forms of play that carry a risk of personal injury,

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benefits of this type of media are not as strong for some female players. This is consistent with Juul's (2010) observation that casual games, which have a more female-skewed player base, feature more "emotionally positive fictions" (2010: 50), "excessive positive feedback" (2010: 50) and lenient punishments for player failure. That is, they are designed to elicit positively-valenced arousal and avoid the type of negatively-valenced arousal that defines the player experience of *DayZ*.

such as playground fighting, climbing heights and playing with high speeds (Sandseter 2007). This allows them to develop an understanding of risk and to practice confrontation in a relatively low-stakes environment (Brussoni et al. 2012). In this reading, frightening media such as *DayZ* are intuitively attractive to us as they allow us to test our own capacity for dealing with fear, uncertainty and distrust:

> Perhaps (against what the modern culture of fear instructs) we need the challenges that fear-eliciting situations provide, especially when we can experience them in small, controllable doses, so as to become more able to deal with fear when it matters most. (Bantinaki 2012: 390)

This situates fear-based entertainment as an inherently playful pastime, made only more so by its inclusion in an interactive virtual world such as *DayZ*. It also provides an explanation for Salen and Zimmerman's (2003) criteria for the occurrence of meaningful play: 'the relationship between actions and outcomes in a game are both discernable and integrated into the larger context of the game.' If the player's experiences are either not discernably related to their actions or not integrated into the context of the game, the game effectively ceases to function as risk play. In the former case, the ability to associate consequences with actions is lost, severing the feedback channel that would update the player's understanding of the initiating action. In the latter, the scope of gameplay that is relevant to the player's learning narrows to those aspects that are integrated with outcomes, leaving the rest of the game's elements as mere noise to the learning signal. Being repeatedly killed on sight by other players is an example of this, as it takes the potentially rich dimension of in-game social interactions and collapses its lesson to simply: kill before you are killed.

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