This is a repository copy of *'The game doesn't judge you' : game designers' perspectives on implementing failure in video games*.

White Rose Research Online URL for this paper:
https://eprints.whiterose.ac.uk/192938/

Version: Accepted Version

"The game doesn't judge you": game designers' perspectives on implementing failure in video games..

Charline Foch

University of York, charline.foch@york.ac.uk

Ben Kirman

University of York, ben.kirman@york.ac.uk

Failure constitutes a key mechanic in video games, playing into player experience jointly with questions of challenge and difficulty. While research has started to investigate the effect of failure on the player's experience, it has so far overlooked the design intents and decisions behind its implementation. We interviewed 13 game designers who shared their experiences of reflecting upon and designing failure in a range of commercial titles. Their insights point towards two-sided considerations: the constraints around which designers must design experiences of failure, imposed by a game's production context and industry expectations, and the creative decisions made to work into, or around, those constraints. We find that our participants suggest a re-evaluation of the role of failure in video games, in the player's experience, and in the gaming culture. Our findings raise questions about the underlying values games may communicate through the mechanic and experience of failure, the role of narrative design in resolving possible dissonances, and the communication pipeline between game designers and players; and point towards future avenues for games research to further support game designers.

CCS CONCEPTS • Applied Computing • Computing in other domains • Personal Computers and PC applications • Computer Games.

Additional Keywords and Phrases: Video games, Game design, Failure, Design practice.

1 INTRODUCTION

Failure in video games can, at times, be a contentious topic of discussion for players and game designers alike, especially when coupled with the question of difficulty in games [47]. Video games have drastically evolved over the past couple of decades, giving rise to new modes of play that stray away from the modes of failure we may be familiar with: where many players may have played games where failing to complete an objective means to die and re-try playing through the same section, some games, such as hypercasual games, may have no possibility of failure at all. Others may include the possibility of failure, but let the story continue regardless, forcing the player to face the consequences of failure head on. As video games evolve, so do design strategies around the mechanic of failure. Recent research has started to investigate those shifting modes of failure, through the lens of player experience [1][35][5]; however, little to no academic research has been dedicated to investigating design approaches from the perspective of game designers. This perspective is the selected focus of this paper. In order to address these questions, we interviewed 13 game designers from the indie games

industry, who have a track record of working on games that made an innovative or otherwise notable use of failure, and sought to address the following questions:

RQ 1: How did these video game designers conceptualise failure in their design approach to the games discussed during our interviews?

RQ 2: What issues surrounding the design and implementation of failure did these game designers identify through their work?

RQ 3: What solutions have they implemented in their work?

Our work provides an in-depth overview of the high-level considerations game designers have had to reflect upon when implementing experiences of failure into their games, and of the low-level design decisions they made to resolve arising conflicts between their design vision and the effect of failure on the intended player experience. This work explores how these game designers understand and conceptualise failure, the solutions they imagined and their thought process behind them, in games that explicitly make use of failure mechanics (or lack thereof) to affect the player's experience of the gameplay and/or the narrative; providing invaluable areas of reflection for other game designers, as well as new areas of potential investigation for games researchers seeking to understand and support game design.

2 RELATED WORK

Research on failure has remained marginal in video games studies, being tangentially connected to questions of challenge, difficulty and conflict, rather than being treated as a possible object of focus. Recent research has initiated a shift towards paying closer attention to failure as a mechanic, and its possible effects on player experience; but has largely omitted research into actual industry practices in relation to failure.

2.1 Failure in games

Research in games has already explored the question of failure in a number of ways, most significantly at a systemic level, examining its place as a mechanic within game loops and desired outcomes. One of the main loops and associated outcomes investigated with regards to failure has been learning: 'learning by failing' is a prevalent strategy in learning loops implemented in video games, with failure serving as a signal for the player that they are not performing certain actions the game intends them to, and allowing them to adjust their strategy until they reach the desired skill level or learn the appropriate way of solving a given puzzle: Gee highlights the importance of feedback in a 'pleasantly frustrating' gameplay loop, allowing players to evaluate their progress against and despite failure [28], and Linehan examined three commercially successful puzzle games in a bid to break down their structure and analyse how the gameplay loop teaches the player how to solve the game's puzzles [43]. A crucial part of this gameplay loop is providing the player with a chance to test their newly acquired skill against various challenges, until the new skill is fully mastered and can be used alongside other skills previously acquired in the game. Other recent research by Anderson focusing on gameplay sessions points towards failure (not just challenge) effectively supporting learning, although it is not the only factor at play [3], and Iacovides, Cox et al highlight players' use of a trial-and-error strategy, whereby players try actions to 'see what happens', and correct course should the action fail [31]. While this research heavily focuses on failure as a mechanic in a system, other research seeks to complement this focus by investigating players themselves, rather than the system they engage with. Anderson et al suggest that players who are more mastery-oriented may be more likely to seek out challenge, and therefore run the risk of encountering failure [2]; while Juul and Belanger respectively point out that for some players,

feeling responsible for the failure at stake is part of the desired experience, as it gives them a sense of agency and control over their own play experience [35][7]. These different approaches, system-centric and player-centric, already point towards failure being a highly nuanced and complex phenomenon, wherein the same mechanic may provide different outcomes and experiences to different people.

Relatedly, failure has been associated with questions of difficulty (although not all difficult games have failure states, and not all games with failure states are difficult) [4], challenge [2], and player retention [50]. Notably, Csikszentmihalyi's theory of flow, when applied to video games, argues that games should neither be too difficult nor too easy, but instead put the player in a state of 'flow' by maintaining an adequate and consistent level of challenge matching the skill of the player [33][34] (the application of which is disputed among games academics [44]). This theory would suggest that failure, especially hard-coded failure (game over screens, player character death and respawn, etc) interrupts the desired state of flow in the gameplay experience - but this theory also doesn't account for games that are successful despite their notorious difficulty and high failure rates (Dark Souls being a prime example), and flow alone does not account for all the factors involved in a game experience. Finally, video games, as a medium, are ever-changing, as are the ways we have to fail at any given game, making it necessary for researchers to re-consider how we situate failure and fail states in other debates – for instance when measuring difficulty [36].

The aforementioned research focuses on various topics surrounding video games, with failure being tangentially or implicitly related to them. In recent years, research has been more specifically paying attention to failure as a mechanic in and of itself, rather than an inevitable consequence of other game design decisions geared towards teaching the player how to play; and has started identifying areas of interest beyond failure as a learning mechanic. The influential book The Art of Failure by Juul explores the paradox wherein video game players dedicate time to a form of entertainment that inevitably triggers sentiments of frustration and inadequacy by making them, in many cases, fail [37]. In 2013, Harrer investigated the expressive potential of failure in games, with a specific focus on loss in different titles, thus highlighting failure and loss as themes and highly expressive devices, rather than a system mechanic [29]. More recently, Aytemiz and Smith investigated the position of failure at a mechanical, systemic level within game loops and in relation to player input/game output, mapping out where and when in a gameplay loop the player can fail and how these possible failure may be intentional or unintentional on part of the design team [5], and current research investigates the connection between failure and challenge, as well as levels of player engagement with games that include the possibility of failure [1][35]. Research has also started to investigate the qualitative, more subjective experiences of players encountering failure in video games [1][26] and allowing players to voice out how they conceptualise, experience, and understand it. Finally, research into emotions in games, and triggering emotional responses through gameplay has started to investigate the place of failure in empathetic moments of play: Bopp et al explore the paradox of difficult and painful emotional challenges leading to pleasurable experiences for players, pointing towards the deep narrative affordances failure can entail, notably through player agency and complicity [9][10], while Farber and Schrier identified forced failure as a game element worthy of further investigation when addressing games dealing with difficult, 'beyond control' situations and themes [24]. This research points towards various possible experiences and consequences of failure, in gameplay loops, narrative, and outside of the gameplay experience, that warrant further investigation.

Despite the existing research conducted into game design and the focus research has placed on industry insight, no research so far has been conducted in an attempt to understand how game designers approach the design and

implementation of failure: the current project offers to build upon the existing research on failure in games by using an approach that has proved efficient to investigate other aspects of game design, as outlined above.

2.2 Design and research

Comparatively, while there has been research on failure in video games, this research has so far not included the perspective of industry experts, focusing on player experience and systems instead. Capturing the opinions and approaches taken by industry experts is an invaluable tool for games researchers to understand the games and game mechanics they are studying, the designers' intent behind design visions and decisions, and allows a much more comprehensive understanding of the underlying connections between industry, creator, game, and player experience. Games research has made use of resources produced by game designers and methods developed by industry experts, such as game developer Raph Koster's influential A Theory of Fun for Game Design [38], Salen and Zimmerman's use of industry veterans interviews in Rules of Play [52], or Jesse Schell's game design support tool, the Book of Lenses [53], to gain a better understanding of game design frameworks, or to blend different approaches to game design to explore further possibilities of research-based design frameworks [22]. Alternatively, researchers have sought industry experts' insights to gain a deeper understanding of design processes, design intents and experiences, as did Denisova et al to investigate design strategies around emotionally charged game experiences [20], or of specific games by conducting production-centered research in partnership with specific studios [21]. Industry experts insights constitute invaluable tools for researchers to help bridge the gap between industry and academia, be it by way of design documentation being made available to researchers [21] or by way of qualitative interview [20][18], the latter having become a long-standing norm in games research, allowing for direct insight into design intent and industry-focused perspectives. Understanding why games are made the way they are through industry experts allows us to gain a more hands-on and direct perspective on the video games industry and the games we elect as our objects of study; moreover, qualitative research has now been established as a valuable resource for HCI-oriented research [17][23], allowing for more nuanced insights into design processes or user experience.

3 METHODS

To answer our research question, we turned to industry professionals, with the goal of gathering detailed, in-depth data regarding the design and implementation of failure mechanics in games. In order to gather data that would provide detailed input and specific examples of game design strategies rooted in experience on part of the game designer, we opted for a qualitative, semi-structured interview-based approach, and applied reflexive thematic analysis to identify themes and patterns of meaning across the dataset [11].

3.1 Participants and recruitment

Failure in single-player games and multiplayer games have some differences, with team dynamics adding another, different layer to the experience of failure in the overall game experience. We therefore focused on single-player games so as to narrow the scope of this research project. We also deliberately focused on game titles where experiences of failure, and mechanics associated with failure, sought to stray away from the die-and-retry model, and to experiment with its possible impact on gameplay and narrative, so as to collect in-depth reflections across a broad range of possible and innovative experiences that current research may not have previously touched upon. The lead researcher drafted a list of titles that would make for relevant case studies, based on their own experience of playing and researching the games in

question [11][12]. We then identified one or several individuals having worked on those games, and made contact via email or via Twitter's messaging system. Three criteria were applied to select our participants. We contacted industry experts working in small to medium-sized studios, as smaller development teams allow for the members to have a more comprehensive overview of the project (as opposed to much larger teams where roles may be more specialised and pigeon-holed). The participants must have personally worked on the game the researchers of this project were interested in investigating; and they must have worked on it in a game or narrative design capacity, two areas of design where failure can be implemented (artists or community managers were not considered for this study).

Out of our 13 participants, 11 were recruited directly by the researcher. One participant, Ben Kerslake, was referred to the researcher by another participant. Luna Javier, was recruited after the researcher posted an ad for the research project on the Facebook group for the non-profit organisation 'Women in Games', in a bid to broaden the project's perspectives and welcome insights outside of the researcher's immediate knowledge.

Given the richness of the collected data, we decided to stop recruiting after 13 completed interviews [13]. All participants agreed to be individually named in this paper alongside the studio they were part of at the time of production, except for one individual who preferred to be referred to as 'team representative' so as to further highlight that their insights come from the collective efforts of the design teams of the games they have worked on, rather than out of a preference for anonymity.

Table 1: participants

Name	Game discussed	Role	Interview format
Team representative	Surgeon Simulator, I Am Bread (Bossa Studio), Orwell's Animal Farm (Nerial)	//	Video
Alexander Swords	Totem Teller (in development), Anytown (in development), All Walls Must Fall (inbetweengames)	Writer, narrative designer	Video
Ben Kerslake	Totem Teller (in development), Alice: Madness Returns (Spicy Horse Games)	Creative director	Video
Claire Morwood	Before I Forget (3-fold Games)	Developer	Video
Greg Kasavin	Hades, Pyre (Supergiant Games)	Creative director	Video
Jörg Friedrich	Through The Darkest of Times (Paintbucket).	Creative director	Video
Luna Javier	Run Run Super V, Dream Defense (Altitude Games)	Game designer	Video
Lucas Pope	Papers, Please, Return of the Obra Dinn	Game designer, developer	Video
Marta Fijak	Frostpunk (11-bit Studio)	Senior game designer	Video
Olivia Wood	Fallen London, Sunless Sea, Sunless Skies (Failbetter Games)	Narrative designer, writer	Video

Name	Game discussed	Role	Interview format
Jon Ingold	Overboard! (Inkle Studios)	Creative director	Email
Jordi de Paco	Gods Will Be Watching, The Red Strings Club (Deconstructeam)	Creative director, writer, designer, programmer	Email
Maddalena Grattarola	Bird of Passage (SpaceBackyard)	Game designer	Email

3.2 Data collection

Recruitment and data collection, running co-jointly, were conducted from June 2021 to November 2021, and yielded 13 interviews.

All interviews were conducted remotely. For accessibility reasons and to accommodate for participants' comfort and preferences, we offered participants the option to choose between doing the interview on camera, or via email/instant messaging. 10 interviews were conducted and recorded via video conferencing software. 3 interviews were conducted via email, in written form, as per the participants' preference.

The researchers drafted a list of questions to be discussed during the interview, serving as an interview guide and general guideline for the semi-structured interview. Participants were offered a chance to look at the questions, and given a consent form prior to the interview.

The interviews started with a short brief about the research project, and a couple of minutes dedicated to going over the consent form and clarifying any questions the participants may have had. Generally, each interview started with questions and discussions surrounding the participant's experience of designing failure mechanics on a specific game, before progressing towards broader considerations around failure in games. The questions sent to the participants can be found in Appendix A. The flow of the conversation at times dictated to adjust some of the questions to allow each participant to share their experience without being restricted to general questions, or to prompt them to go into more detail about a specific point of discussion.

Interviews on video conferencing software lasted 30-40 minutes on average and approximately 44 000 words worth of interview content were collected.

3.3 Data analysis

The data was analysed using reflexive thematic analysis, as outlined by Braun and Clarke [11][12]. Reflexive thematic analysis is a qualitative method used to identify themes and patterns of meaning within a dataset, using the researcher's expertise and perspective to construct an in-depth, informed interpretation of the data [14]. It is particularly well-suited for interview studies, where the researcher's expertise supports the shaping of the interpretation of very rich data, and in establishing clear patterns between the dataset and the research question.

The recorded interviews were transcribed, and all the transcripts were coded using MAXQDA. Following Braun and Clarke's approach, the first author was the only analyst involved in coding the data [11][12]; the second author supported the analysis by providing feedback on the codes constructed throughout the coding and analysis process. The first author familiarized themselves by reading the dataset multiple times, making initial notes and comments in a series of memos (handwritten and on MAXQDA). They then proceeded to code the entire dataset, first by focusing on semantic content (i.e: in the words of the participant), then by focusing on latent content (i.e: implied meaning underlying the semantic

content). This process resulted in 922 individual codes: this is because the semantic content was coded 'in Vivo' (i.e: the codes are the participants' words exactly), and many of those codes were the same ideas expressed with slight variations from one participant to the other. The first author then grouped together such duplicates, collated the cleaned- up codes, and proceeded into analysis to identify relationships between the codes and potential themes.

Those potential themes were drafted on a thematic map with an initial 11 potential themes and 83 sub-themes. The thematic map was systematically reviewed against the data and edited, eliminating weak candidate themes (not supported by the data or working better as supporting commentary) and creating new themes by grouping together candidate themes offering connected meaning. This re-evaluation process was repeated until the first and second author agreed that the final candidate themes appropriately represented the data. Our reflexive thematic analysis resulted in two final overarching themes, and six themes: 'High level considerations when designing failure: constraints and issues' ('the restrictive dogma of failure'; 'the impact of design vision and production conditions'; 'going beyond failure') and 'Low level decisions when designing failure: solutions and innovations' ('using narrative to frame failure into context'; 'creating meaningful experiences of failure'; 'communicating about failure with the player: clarity and purpose').

4 RESULTS

This section breaks down the themes and sub-themes that were constructed from the interviews we conducted with our participants. Our two overarching themes highlight a design approach to failure that encompasses high-level and low- level considerations: constraints our participants highlighted as necessary to account for when they approached failure in their design decisions, and the decisions they decided to turn to, to address or resolve issues arising from wider contexts, such as gaming conventions and the games industry.

4.1 High level considerations when designing failure: constraints and issues

4.1.1 The restrictive dogma of failure.

Our participants highlight a certain 'dogma' of failure permeating the games industry and audiences, inherited from earlier games, informing our understanding of current games, and shaping our expectations for games to come. Their own experience with conventions surrounding failure in games, while very high level and more abstract, is something that has informed their design reflection, as well as, in some instances, the reception of games they have worked on, when they did not make use of 'traditional' fail states.

Games, as an entertainment medium, set themselves apart from film, literature or music, in that they entail the possibility for the user to fail. Barring interactive film such as Netflix's Bandersnatch or pick-your-own-adventure books, a measurable outcome possibly resulting in failure through the player's own input is something that is unique to games, and has come to be a distinctive mark of the medium; but at times, it can also be a restrictive expectation. When asked about their understanding of failure in games, our participants reflected upon failure as a mechanic deeply ingrained in the very nature, or definition, of video games. For some participants, "that's how [they were] taught and trained as a game designer, you know, without frustration, without challenge, then you don't have a game. Like, the difficulty, like, fighting against difficulty and conquering difficulty. That's where fun comes from" (Javier). Some participants think in terms of a 'traditional' definition of failure: "I think in the traditional… when we think of a video game kind of by default and we think of like, a Super Mario game, or something like that, they have levels, you know, you can die. You have… I think

the, the modern technique is, you know, you die and you go back to your last checkpoint and you try again, you try again until you finally, you know, overcome whatever section of gameplay was stumping you" (Kasavin) and point towards a normalized, standardized definition and design of failure, wherein it is "normal to find oneself repeatedly playing through the same sequences as you try to overcome a particular challenge." (Ingold). Through their own experiences of playing games and working in the games industry, some of our participants explain that they have internalized a certain constrictive definition of failure, centered around die-and-revive cycles, win and lose conditions, and have found that suppressing such notions from their games prompted a questioning of their works as games:

"There's certain stereotypes and assumptions about what a game is and needs in order to be… One thing that I've had a lot with some of the smaller games I've made and Before I Forget [note: which does not include a game over state, and only includes one forced failure] as well, is people being like, oh, it's not really a game though, is it?" (Morwood).

Assuming that failure, in particular 'hard' failures resulting in game over screens and resets, is an inevitable part of video games, can be harmful to game design innovation. Some of our participants pointed out that video games have evolved significantly over the past few decades, and that 'traditional' fail states may be unsuited for certain genres that have gained traction in recent years:

"Fail states are (in my opinion) a significant drawback when about immersion, should you not design it to be part of the ongoing narrative. I believe that the concept of Game Over is obsolete for modern game design, an inheritance of the arcade era, and it only makes sense if you are making arcade games" (De Paco).

Conversely, other participants reported experiencing this disconnect very directly, when working on, and showcasing games that did not have traditional fail states in their gameplay. Bird of Passage does not include hard failure states or resets, instead playing dialogue lines on loop to guide the player through the narrative. When showcasing the game, the developers noticed that "most players asked us whether the game featured an ending. This is again interesting to me: not only the repetition of dialogue lines is perceived as failure, but the complete absence of a clear fail state was perceived as an absence of an ending" (Grattarola). Similarly, in the walking simulator Before I Forget, the player, who plays as a woman suffering with dementia, plays through a scene where they have to urgently find the bathroom. Upon playing the game, the first author of this paper went through the scene expecting to be able to 'complete' this objective, or to fail it, only to find out that the game is not designed to let the player succeed and that the scene leads to a forced failure instead; an experience apparently shared by other players when the game was showcased:

"It's really interesting because that's a really common response that we've had […] So people would often be like, 'oh, could I have made it?', like you said, and which we weren't expecting, because, I guess we always knew that you couldn't make it. So that was… and then I think it's exactly what you're saying that people expect. If there's something that's seen as, like, a challenge, it almost seems like you have to do the same thing over and over again. So in traditional games, you know, it's like, 'you're not doing it right'" (Morwood).

4.1.2The impact of design vision and production conditions.

In light of these considerations around the place of failure within the video games industry and culture, our participants reflected upon how they approached the design and implementation of failure in their own games, with their specific contexts and demands. These demands are manifold and span across a number of considerations that go well above the idea of fun or solely maintaining player engagement.

Some participants highlighted the economic model their games fit into, and how failure mechanically allows those models to work: for instance, mobile games have very short play sessions, and game designers "usually attach monetization point to the failure. So for example, you watch an ad to revive, or you use gems to revive, things like that" (Javier), a tactic also embraced by free-to-play games like Fallen London, where game mechanics can be used to sustain the game's and studio's economic model: "players get a limited number of actions, and if they don't succeed all the time, they have to replay a branch, and that uses up an action and it sometimes motivates buying actions. It doesn't always, but it's one of the many kind of tools of monetization; not a big one, but it's just there" (Wood).

For many of our participants, however, when working on the games discussed throughout this paper, traditional fail states proved to directly contradict their design intentions, thus requiring a re-framing of thinking to understand how best to implement (or not implement) a given failure mechanic. Some of our participants, including Jon Ingold from Inkle Studios (a studio specialising in heavily narrative-driven games) pointed out that in his experience, fail states and narrative often have difficulty co-existing in video games:

"Failure in a narrative context is probably the most difficult problem of all, since the usual model of die-repeat is highly destructive to the player's enjoyment of a narrative. […] Our games tend to revolve around medium to long term consequences so the problem of failure is really serious: if you've been playing for an hour, and then die, how far back do you have to go to be able to continue safely? How much content will you have to repeat?" (Ingold).

Similarly, a game's genre can inform the design vision of a game, as a certain genre can lead players to expect certain mechanics to be guaranteed to be there. Roguelike games come with a set of expectations, two of which being difficulty and permanent death [30]. When developing Hades, Supergiant Games reflected upon these expectations, and the disconnect between these expectations and the wider, non-hardcore, narrative-focused audience they were also hoping to target:

"And what can we do to, to make a game like this, be more open to more players? At the risk of not being like a 'hardcore game', as it were, whatever, like, we didn't set out to make, you know, the most brutally difficult roguelike game. It was more the thing of, you know, hopefully players who enjoy games like this in general will be able to enjoy this one, but let's also just make it more… just easier to get into for, for more types of players, who might be drawn to the world or whatever, and don't necessarily see the brutal difficulty as something that is like an exciting… that's not why they're going to go and play this game necessarily" (Kasavin).

Relatedly, some of our participants explained that they designed experiences of failure that they felt would fit the overall message, or theme, of the game. In Frostpunk, a survival-themed city builder set in a catastrophic ice age, failure feeds into the player's learning process and learning curve by way of trial and error, but is also aligned with an aesthetic purpose: "in terms of a game that is based on extremely harsh conditions, it is also a means to show that, if your survival is ensured without a fail state, then you wouldn't feel the stakes, so, you know, you've got that prospect." (Fijak). Paintbucket Games

encountered the opposite situation: Through The Darkest of Times is a game where the player is put in the shoes of a resistance group in World War 2 Berlin. The gameplay alternates between text-based narrative choices, and resource management. For this game, the developers had to navigate the nature of video games and player expectations, with regards to how resource management games communicate failure (or need to include it), but also the sensitive nature of its topics and setting:

"That is [a question] that was among the hardest to solve in the game because we have been asking ourselves all the time, how do we want to implement this? Because it's a game, right? There needs to be some kind of failed state. And there needs to be something like a measurable result. And we were wondering how we can align this with the message of the game, or the content of the game in an appropriate manner. Because we wondered: if we say 'you play the game and you bring your, your resistance group to 1936 and you helped a hundred people on the way, but then your group dissolves because the motivation is stolen, morale is down'. We'd be kind of, 'we give you the game over, telling you like, okay, you played it wrong and I'll play it again'. Can you say this? Like, does that mean you did resist the Nazis in the wrong way, and to now do it in a different way? That's the message we didn't want to send. And we were worried that the game would send this kind of message, if we installed a traditional game over" (Friedrich)

Some participants decided to take a more experimental approach from the start, as part of their overall design process, priorities, and preferences:

"As a designer, that just… I don't think in those terms, when I think about designing something. So, for Papers Please, I knew that as a player, I would want to try different things, and I didn't want to get kind of lost in a tree, a narrative tree, somewhere in some branch off to the side, and not be able to get back to where I started experimenting, basically. So I felt like I don't want a high penalty for failure. If you ran out of resources, I don't want to make you replay half the game, just because that's not what Id' want to do when I play the game, so I don't want to inflict that on the players either" (Pope).

These situations exemplify concerns and issues surrounding failure that go beyond the gameplay itself: they are connected to studio-wide concerns such as monetisation or branding, target player audiences, and the artistic vision and direction the teams intended for their games.

4.1.3Going beyond failure.

The cases outlined above exemplify our participants' willingness to question the purpose of failure in their games, on a case-by-case basis, to address and resolve game design considerations; but our participants also expressed a keenness in expanding this work of reflection to game design beyond these explicitly named examples, and to explore expressive spaces that do not necessitate failure at all. When is failure necessary? Are there alternatives worth exploring? One participant states that "in terms of general fail states in games, I find it fascinating, the role of it, and the necessity of it. This is something that – I'm currently even struggling with a new project, asking 'how needed is this?'" (Fijak). Another notes a broader evolution in the games industry, citing the emergence of hypercasual games, that directly challenges previous experiences and assumptions: "so for me, a lose condition is required for it to be a game. But now I'm playing these games where there, there are no lose conditions, it's just winning or nothing!" (Javier). Questioning the framing, function, presentation, and even necessity of failure in games, raises questions about our understanding of how games work as

systems and forms of entertainment. As per the examples of Through the Darkest of Times, Frostpunk, Before I Forget or Bird of Passage, failure and fail states can entail an expressive power for the themes and messages of a game. Conversely, the choice to not have fail states in a game can be as expressive a decision:

"And I'm looking forward to video games that then might not be called games anymore, but I don't care, that go more into a direction where, where it's about this… yeah, this dogma of 'every game needs to have a measurable result […] Of course, I don't think these games need to go, but I think it's just, I think there's more that can be expressed through video games. And I think we should explore that space further" (Friedrich).

Other participants, reflecting on the games industry and discourses surrounding the use of failure in video games, reflect on possible broader issues surrounding an industry-wide discomfort around, or limited understanding of, failure. At an industry level, it is possible that failure has reached a sort of taboo status – a mechanic that has to be there in many cases, but that is difficult to grapple with, as per this designer's experience when working on projects with their teams:

"I think that the problem is, and what we struggled with, is that the word 'failure', by definition, has a negative meaning. And oftentimes when you use that, it discourages game design discussion, because it feels like failure is a sort of punishment, which it isn't! It is literally a fundamental building block of any gaming, you know? And so, what we found is: it's very difficult to talk about it because from a game design point of view, it almost feels like a sort of punishment" (Anonymous).

Relatedly, another participant noted that the games industry's current approaches and conceptions of failure may stem from a form of cultural homogeneity pervading how we think about the very nature of storytelling and conflict in games, that dictates the alleged inevitability of failure in the medium. A shift of cultural lens may open up new ways of conceptualizing failure altogether:

"Part of the problem with that kind of advocating is usually, it comes from conflict, by storytelling where there has to be two opposing forces, and one of them has to win. And so, the choice has to be either one wins or the other one wins. But there are so many cultures in the world who, yeah, don't engage with that. They prefer some kind of aesthetic outcome, or just understand that it should be more complicated than that" (Swords).

4.2 Low level decisions when designing failure: solutions and innovation

Taking the high-level considerations outlined above into account when designing their games led our participants to seek creative solutions to resolve the apparent tensions and questions arising from considerations around failure. Those design-level strategies are very context-specific, and reflect their experiences working on unique titles – however, we were able to identify commonalities in their approaches and train of thought, mapping shared concerns and interests when designing experiences of failure in their games.

4.2.1Using narrative to frame failure into context.

A shared denominator between most of our participants, is how their teams had to reflect upon the role of narrative design and storytelling when deciding how to implement fail states, or experiences of failure, into their games. Notably, some of the participants identified a fundamental dissonance between the 'dogma' of failure previously discussed, inferring that failure and video games are almost inseparable, and the heroic stories often told in video games, highlighting that "there's a real design problem here – that most big games are in fictional genres where protagonists never fail. […] These genres of heroic action have no room for failure in them; they're always about wins and big wins" (Ingold). While failure may be omnipresent in video games as a mechanic, thematically, the die-and-reset model often conveniently erases the event from the storyline, making for very inconsequential failures within the game world. Many of our participants have sought to address this disconnect between mechanic and narrative, in a bid to re-establish failure as an acceptable outcome both on a mechanical and a narrative level. Hades leaned fully into story continuity to mechanically and narratively reflect the experience of the player, with the story, situated in the Underworld and thematically embracing concepts of death and failure, continuing even after the player dies, making "the player aware that they didn't do anything wrong" and taking "the sting out of the sense of failure in this game, knowing that the sense of failure would be prevalent" (Kasavin). Similarly, Pyre maintained the possibility of failure, but removed the possibility of death and reset, by designing a non-violent gameplay akin to sports games. As a result, both the player and the characters have to live with the consequences of their failures, which unfold in the story itself after each failed Rite: "And we wanted, we felt that that in a way makes the stakes even higher, because in, you know, in a lot of modern media where characters kind of kill each other to settle their differences, well, once you're dead, you don't have problems anymore" (Kasavin). In Pyre as in Hades, the player has a chance to bounce back from a failure, but cannot escape its narrative consequences, or pretend it did not happen in the game world.

Integrating failure into the story can make for compelling content, intended to turn failure itself into a valuable and rewarding experience. In Sunless Skies, failed actions can result in the player character losing their sanity, and veering towards death, unlocking narrative content as the player is thrown into catastrophic failure:

 "There are several different kinds of ways you can go mad, when your nightmares get too high. And they're just really powerful writing. And so there's an incentive for players to deliberately fail, and it might be annoying if they're going for really high ambition, they progressed all the way through and they've got loads of stuff and they lose half of it and they have to continue their legacy. But for a lot of people, it's something tempting them to risk death. And I think that's also quite a useful thing that failure is. If failure is in itself kind of tempting, it makes the decisions in the game and the things you try a lot more interesting" (Wood).

Other participants, on the other hand, determined that the best way to account for failure in their games, was to discard the mechanic of failure entirely. Following the release of the challenging Gods Will Be Watching and its difficulty modes, Deconstructeam released The Red Strings Club, in which "there are no traditional fail states. You can only "fail forward," most times it is not even about an outcome being worse than others; they're just different. If the player does not perform optimally in a scene, some character will suffer, you won't get to know some piece of information, or things will get a bit more complicated in the future" (De Paco). In Sunless Skies and The Red Strings Club, the narrative outcomes of failure equate those of success, and are treated as alternatives, rather than one being more desirable than the other, and failure leading to the game ending. The story continues, whether the player 'wins' or 'loses', and both possibilities are equally

valid narrative experiences. Similarly, Bird of Passage embraces a story and a gameplay without traditional fail states, to encourage the player to focus on the emotional journey and storytelling rather than mastering the game mechanics.

"Bird of Passage was born as an homage to Japan and its taxi drivers. […] We have never designed a fail state for this game, at any stage. The main character is a ghost, or a spirit, haunted by his own inability to piece his memories together and understand what happened to his body. The conflict is internal, the character is dead, the fail state (as commonly defined) has already happened even before the game starts, we are not interested in exploring that, we want the player to understand the main protagonist's story, and possibly to uncover something about themselves in the process" (Grattarola).

All the games aforementioned made a deliberate attempt at blending narrative and mechanics to resolve conflicts surrounding the possibilities and setbacks offered by failure; it should be noted that our participants also highlighted that in order to do so, the narrative team should not get involved only at the final stages of production: "one of the advantages of being micro on Totem Teller is just that I can properly collaborate with the people that I'm working with. And I'm not, like, taking a thing that's already baked to them and saying, 'just put icing on it'. It's like, I want them as involved as they care to be in, in sort of influencing things and, and not just be like, you know, pigeonhole their work into the gaps between systems and stuff like that" (Kerslake). All our participants, regardless of the focus of their job, reported working on these reconciliations from the very beginning of production.

4.2.2 Creating meaningful experiences of failure.

Beyond a desire to reconcile the mechanic and theme of failure with gameplay, participants also specifically reported an intent of creating meaningful experiences of failure for their players: ensuring that the presence of failure in their games felt justified, and adding an extra layer of meaning for the player to interpret or experience. In All Walls Must Fall: "we could add context to it, that every time the player died, there was an opportunity to add some context and meaning to that failure" (Swords). In Anytown, Swords explains that the design was intended to reconcile the game's theme (coming of age) and failure (relevant to the theme) in order to prompt an introspective experience for the player: "The failure should be represented in a player character story, not just in the player's experience. And so, that way we're using it as a way of basically spring boarding towards some kind of interrogation of fame or life lesson, or… it was something like that" (Swords). Finding the right approach to incorporate failure into the game design in a meaningful way, appropriate for the theme and story of the game, was, for some of our participants a moment where the possible disconnects between failure and design intent came to light, as exemplified with Through The Darkest of Times:

"First we tried different things. For a while, we had actually classical goals in it. So basically the game told you, you must reach 100 supporters until July 1933, or you fail, and we'll not get into the next chapter. And that worked very well on the gameplay side […]. Yet, it had side effects that we didn't like, and that we felt like were inappropriate with the theme. For example, when people saw at a certain point that they couldn't reach the 100 supporters anymore, they would just give up and, and let it go. So they were playing the mechanics, basically, they were just looking at the number". (Friedrich)

To make failure more meaningful and align it with the theme of the game, they "came up with this decreasing morale as a constant pressure. So rather than going for a goal, you would try to go to avoid reaching zero. So we had to fill up the

meter, which was still playing the numbers, but it would be more appropriate with the theme. And it would basically force you to do resistance actions as well, because if you don't do that, eventually the game ends, but it's up to you, right. It's your choice, how you do it" (Friedrich).

Similarly, in Before I Forget, the developers were keen on ensuring that the player could experience a degree of empathy and identification with Sunita, the player character. Muddying the waters between player failure and narrative failure, through the forced failure of the bathroom scene, supported this design goal, where designers felt it was "really important for people to have that kind of confusion and uncertainty in order to really put them in the shoes of the character" (Morwood).

In those instances, failure mechanically and narratively feeds into a reflexive process, an additional layer of meaning informing the player's overall understanding of the game and its intended design, as well as key themes, messages, and lessons carrying beyond the experience of the game itself.

Conversely, the absence of 'traditional' fail states or player death can have a similar effect. In Pyre, where the player is trapped in a prison underworld and, along with a group of characters, undergoes a series of trials before setting a character free from their prison, the absence of traditional failure was meant to allow players to spend more time with the characters, which "has the effect where you can really get to know these characters", immersing the player in each character's narrative and development, before offering "these climactic moments where you have that choice of who, you know, who can finally go free. And those were really important moments to us in development, but they were really hard to, to prototype because, you know, it was more than just creating a right where at the end of it, you know, you pick a character and they're gone, or at the beginning, I guess you pick a character and they're gone" (Kasavin). The choice to part from a character the player has come to relate to is meant to be all the more emotional, and meaningful, because there have been no fail states derailing the bonding process between player and character.

Beyond the fate of a given character, choice is a powerful tool to grant players agency over their game experience. Having failure, or the threat of failure, limit, guide, or threaten player agency, can enable players to entirely change the shape of their gameplay. In Frostpunk, "you can finish the game with something that we call the golden path, and this is something, from our European-centric point of view, a 'moral' way to finish it" (Fijak). The 'golden path' refers to an excellent management of resources, leading the player to survive throughout the game without having to turn to a mechanic called 'the Book of Law', through which the player can enact morally questionable laws, acting as 'tools' that make the gameplay easier; "and if you are very good on the side of economics, you can do the golden path. If not, then here are the tools! But the tools are coming with a price" (Fijak). In other words, the player is confronted with a dilemma: fixing their shortcomings and failures by compromising on their ethical values (for instance, sending children characters to near-certain death to fix a generator), or refusing this compromise, and renouncing the tools that would otherwise allow them to avoid further failures. Player failure becomes a very central part of the player's individual experience, on a mechanic, aesthetic, and moral level.

The absence of explicit fail state can also equate to an implication, or a suggestion of failure, which can make for a more internalized, player-dictated experience: "for [The Return of the] Obra Dinn, as well, there isn't really a fail state in Obra Dinn, you kind of just… there is no point where the game tells you 'you're done', you can kind of play it forever, and sort of internalise the fact that you can't solve the mystery, or can't figure out people's names, is kind of an internal disappointment, but the game itself doesn't judge you" (Pope).

4.2.3Communicating about failure with the player: clarity and purpose.

Lastly, how to communicate the failure state and the theme of failure to the player was a question our participants paid particular attention to. For the experience of failure to be meaningful and valuable, as per their game design intentions, participants highlighted a desire to ensure that their players would understand when they fail, how they fail, and why they fail, including whether the responsibility of failure lies with them, "because I think part of where players struggle sometimes is whether they, the failure is on them or whether it's actually part of the game design" (Swords). Integrating failure into the design of a game also necessitates an effort on part of the design team to make explicit the reason behind that design decision: "I think the failure, I think, has to relate to something important in the game for it to be valuable as well. And the further away it is from the central premise of the game, I think, then there's less value there. And then it just ends up being more frustrating for the player as well. So, I usually use the high concept for me to test that, I literally go, you know, does this failure have anything to do with the high concept formula [author's note: the high concept formula is, in Swords' Forest Paths Method for narrative design, the central premise of the game, summarizing the player's journey through it]? Yes. Okay. The player's is going to see value there" (Swords). Clarifying, through narrative, theme, or gameplay, the explanation behind any given fail state or experience of failure, creates a dialogue between designer and player, mediated by the game. From a designer's perspective, finding the right way of communicating the failure to players can be a tricky process, of which the result can be a key component of the overall design and experience. In Frostpunk, "you can get caught up in a snowball of systems" (Fijak): failures happen as a consequence of the player's resource management decisions, which are numerous and of varying scales, and create a domino effect in the way they impact each other, making it difficult for players to pinpoint the exact moment things started to go wrong. As a result, "the narration of the fail state itself evolved quite strongly, what we are communicating by the fail state, how it worked, but I think what was the biggest challenge, in terms of Frostpunk and fail states, was communicating the fail state, the right moment to communicate the fail state" (Fijak). To address the possible frustration experienced by players, the design team opted to embrace that snowball effect, leaning into making the failure more aggressive and quicker, while also offering "the player more tools to be able to grasp out of that almost fail, but not fail state, yet, state" (Fijak).

In the case of Papers, Please the issue was addressed through a play on timing and clarity:

"So if you make a mistake, you immediately get this printer sound, and this print-out appears that tells you what the mistake was, so you know, next time, to look out for that sort of thing. Um, but that ended up creating this sort of tick in the player where they wait – they make a judgement in the game, and then they wait a few seconds, very tense seconds, waiting for that printer sound to play, to tell them if they've made a mistake, or not, which ended up being really nice" (Pope).

While acknowledging that this immediate, unambiguous feedback clashes with the underlying narrative of the game, Pope emphasizes that the resulting effect worked out well for the overall experience of the game, "because the relief you feel when you don't hear it is almost as strong as the kind of disappointment you feel when you do hear it" (Pope). Immediate feedback on success and failure was intended to give players clarity on their performance, and the options available to them to adapt their gameplay, should they choose to do so, while the timing played into a sense of suspense and tension fitting for the theme of the game.

Participants also highlighted that they expect their players to play an active role in their understanding and handling of failure, and leaned into that dialogue established between developer and player by the game. Bossa Studio created Surgeon Simulator and I Am Bread, two games that heavily lean into the comedy of catastrophic failure by having players navigate an in-game world with very accurate controls, and very unpredictable environment physics, making for cartoony, ridiculous, and possibly infuriating experiences of failure. Both games gained a lot of traction online, and communities rallied around streamers showcasing the spectacle of these spectacular failure; but choosing such an approach was a gamble, "because the game does deliver a joke with a straight face. You know, we never have a sound goes 'HA-HAAA', that kind of clown noise. We've never done that. And it was very risky. And we had big debates about this! Even in I Am Bread, we were thinking, should we put a face on the bread to make a funny face when something happens? And the idea was that, no, we have to trust our players to get it" (Anonymous).

Trusting that players would understand the design vision of the game and embrace it supposes an active participation of players into the construction of meaning and interpretation of the game, and supposes a willingness on part of the designers to relinquish control of the game experience to their audiences. Similarly, some participants are aware of the communities playing their games, and decided to use their players' independence and communities to inform design decisions pertaining to difficulty or failure: "You know, that the player, even if they were super stuck, would find a way, right? […] And then the second reason why you could make, you could design those PC adventure games has to be difficult, is because there was a huge community of gamers that made walk-throughs and had forums and would help each other out" (Javier).

5 DISCUSSION

5.1 Related work

Our research has highlighted two levels at which designers approach failure: a high level of consideration, encompassing several layers of constraints and questions ('the restrictive dogma of failure'; 'the impact of design vision and production conditions'; 'going beyond failure') and a low level of consideration, encompassing the solutions and design approaches taken to address those issues ('using narrative to frame failure into context'; 'creating meaningful experiences of failure'; 'communicating about failure with the player: clarity and purpose'). Our participants have all demonstrated taking a highly critical and reflexive approach to failure, and made attempts to use it as an expressive mechanic in the overall design of their games, even when (or especially when) it contradicted other design intentions. This self-conscious approach aligns with research pointing towards the expressive and persuasive power of video games [8][25][29], with our participants seeking to use failure to sometimes trigger eudaimonic experiences, e.g "experiences of deeper insight, meaning, and personal growth" [6] akin to a quest for meaningfulness [49], although failure has seldom been investigated under this particular angle as of yet. It should be highlighted that here, our participants equated 'meaningful' with 'purposeful', whereas research may assign a different definition to it - a distinction that may be of use for researchers in this particular area. Their approach and reflections also echo principles of transformative game design [19] and design approaches taken by designers focusing on serious games, in which design decisions are meant to explore, highlight, and relate to themes going beyond sole entertainment [42][45].

By experimenting with failure, our participants sought to inject some degree of ambiguity and uncertainty into their games, supporting player reflexivity and reflection [27][41]. Although this was the intended design for some of our participants, notably in Before I Forget and Through the Darkest of Times, it should be noted that the degree to which

players undergo long-lasting transformative processes as a result of such reflection is still a topic of academic investigation [46].

Questioning the place of failure in video games has enabled our participants to reflect upon the nature of the stories commonly told, and systems commonly implemented, in video games, in terms of narrative point of view, conflict, and underlying power structures. The way failure is implemented and presented in a game tells the player about such dynamics: who is in power, who is empowered, how this power and empowerment translate through the player experience. There is an important difference of rhetoric between a game depicting an action hero whose failures are never reflected or remembered in the story, and a game that reminds both player and character that the world is transformed by their action – including their less successful ones, as in Frostpunk and its never-ending cycle of struggle and grind against the cold – or even games taking a contemplative stance to a fail state that happened prior to the game, such as Bird of Passage and its looping dialogues in a limbo-like world [39][75]. If we did inherit our understanding of failure from arcade games and their specific material and financial constraints, as well as from conflict-based storytelling and their philosophies of heroism and productivity, then games, as our participants have sought to demonstrate and explore in their work, have evolved enough to allow us to reflect on the stories, rhetoric, and messages these constraints constructed, their cultural significance, and the possibilities that new stories, new modes of failure are already shaping in the gaming culture and industry, reaching into possible disruptions of our conceptions of games that queer theorists have already started advocating for. [51] Similarly, as Swords reflected in our interview, based on his own research into Japanese storytelling and First Nations storytelling, non-Western modes of storytelling may make different uses of 'failure', have a different conceptualisation of what failure is, and offer different narrative structures that have yet to be explored in games format, where conflict and failure may arise from very different sources - if they exist at all.

Throughout our discussions, some of our participants also raised important questions that are currently relevant to the games industry but have seldom been related directly to experiences of failure. Those discussions did not result in integral themes in our results, but we deem them worthy of being brought to attention for future discussions: we previously discussed Hades' use of narrative continuity to 'take the sting out of failure' and broaden the game's appeal to less 'hardcore' audiences, to draw in players who may usually not be attracted to the roguelike genre, but may be interested in the game's extensive lore and complex storytelling. By blending the roguelike genre with a very intricate narrative, Hades attempts not only to justify the presence of failure and difficulty in the game, but also to offer elements of gameplay that players who don't usually play roguelike games may find more palatable, and that may offer an entry point to this specific genre and its conventions. It seeks to facilitate access to audiences that may otherwise have felt, because of gaming culture and conventions (the reputation roguelike games have garnered as very difficult and frustrating games), that the game may not be for them.

Accessibility is a crucial dimension of game design, with complex discussions surrounding studio and design practices to make games more accessible for players with varying needs [40]. Difficulty has, recently, been at the heart of social media and industry discussions [16][48][55] thanks to the release of Elden Ring, a new game in the Soulsborne series (in the continuity of FromSoftware's Bloodborne and Dark Souls) franchise of notorious difficulty that has almost become its own genre, 'Souls-like' [32][54]. Difficulty has also been a preoccupation of researchers investigating questions of accessibility for players with various disabilities (physical, cognitive…) and game literacy [15]. Such debates raise the question of the difference, or relationship between difficulty and failure, and the part fail states in difficult games may play in the experience of players who, due to accessibility needs or by personal preference, may find such games less

approachable. This is an issue that Deconstructeam have faced during the development of Gods Will Be Watching. According to De Paco:

"[Gods Will Be Watching] had an online statistics system to track player choices, and it's because of that that we were able to discover that less than 10% of players got to the ending of the game. We are a studio that puts a lot of its focus on the "narrative experience", that a majority of people didn't witness the ending of a story means that we failed to communicate with the audience, even if they enjoyed the time spent in the game before quitting."

The team addressed this issue by releasing what they called the Mercy Update: a difficulty selection system allowing players to choose between the original, very difficult design, or a mode removing most or all difficulty from the game for those wishing to focus on the story, or a puzzle mode removing the factor of chance from the challenges faced by the player. Once this update was implemented, the team observed an improved game completion rate, meaning that this approach made the whole experience more accessible to players who, for any reason, may have previously or otherwise been excluded from it by the sheer difficulty and failure rate of it.

5.2 Limitations and further research

The games examined in this study are all produced by small to medium-sized studios. This approach was very informative in providing us with perspectives from generalists with an in-depth overview of the entire development process and overall vision of each game. The focused approach of this study means that it is not representative of the whole games industry, all game genres, or of all studio models. Further studies could focus on larger game studios where positions can be more specialized, and focus on various specialisations' perspectives (for instance implementing failure through level design), or on tangential, more focused dimensions of failure (for instance failure's role in a business model through monetization). Those games are also all single-player games: further research into multiplayer games, ranging from co-op games to MMOs, would yield valuable additional insights on related topics such as teamwork and competition. Lastly, those games were for the most part deliberately, to a degree, experimental in their design intent, including when approaching failure and its places within the game experience. Not all games or game designers take such a stance when designing for a game.

Interview studies are a way of gaining valuable, in-depth reflexive insight into design processes, and can be complemented by an array of further methods. Further research into designing and implementing failure in video games can be done with more design-oriented research methods, such as research by design, production studies complete with design documents, or direct collaboration with game studios and knowledge transfer opportunities. More humanities- based research may also yield insightful observation by analyzing individual games and using close-reading methods to investigate the underlying meanings and persuasive effects of failure, as a mechanic deployed within the context of a particular game.

Finally, researchers interested in player experience and user research may wish to investigate the player perspective of some of the topics discussed throughout this paper, as this project has solely focused on the designers' perspective and separated design intentions from actual player experience.

6 CONCLUSION

Failure is one mechanic that is part of a much wider system that constitutes the gameplay of a game. While research is investigating how it may affect player experience and how it intersects with other aspects of gameplay, little effort has been made towards gaining understanding of game design approaches and game designers' perspectives on the subject. Through an interview process and by applying reflexive thematic analysis, we sought to gain an in- depth insight into the thought process followed by 13 industry professionals and the decisions they made with regards to their own games, and the fail states and experiences of failure they feature. From the collected data, we constructed our results around two overarching themes, and the sub-themes they comprise: high level considerations when designing failure: constraints and issues (the restrictive dogma of failure; the impact of design vision and production conditions; going beyond failure) and low level decisions when designing failure: solutions and innovation (using narrative to frame failure into context; creating meaningful experiences of failure; communicating about failure with the player: clarity and purpose). Designers are aware of conventions and expectations inherited from their own and their audiences' games literacy and understanding of games, as well as the practical constraints that come with working in a game studio. In their own design practice, they identified clashes and contradictions between failure as a mechanic, and their design vision, and worked to find solutions to resolve those issues. We hope this work will provide valuable insight for researchers interested in investigating the expressive potential of failure in games, the practical considerations designers have to address when implementing failure in their games, and the potential avenues for further reflection that will help researchers find new angles from which to support game designers.

REFERENCES

[1] Craig G. Anderson. 2020. Hits, Quits and Retries: Player Response to Failure in a Challenging Video Game. In Proceedings of the International Conference on the Foundations of Digital Games (FDG '20), September 15–18, 2020, Bugibba, Malta. ACM, New York, NY, USA.

[2] Craig G. Anderson, Kathryn Campbell and Constance Steinkuehler. 2019. Building persistence through failure: the role of challenge in video games. In Proceedings of the 14th International Conference on the Foundations of Digital Games. August 2019, San Luis Obispo, California, USA.

[3] Craig G .Anderson, Jen Dalsen, Vishesh Kumar, Matthew Berland, Constance Steinkuehler. 2018. Failing up: How failure in a game environment promotes learning through discourse. Thinking Skills and Creativity, 30. Pages 135-144.

[4] Maria-Virginia Aponte, Guillaume Levieux and Stephane Natkin. 2011. Measuring the level of difficulty in single player video games. In Entertainment Computing, 2. Pages 205-213.

[5] Batu Aytemiz and Adam M. Smith. 2020. A Diagnostic Taxonomy of Failure in Videogames. In Proceedings of the International Conference on the Foundations of Digital Games (FDG '20), September 15–18, 2020, Bugibba, Malta. ACM, New York, NY, USA.

[6] Anne Bartsch and Tilo Hartmann. 2017. The Role of Cognitive and Affective Challenge in Entertainment Experience. In Communication Research, 44(1). 29 – 53.

[7] Jocelyn J. Bélanger. 2013. Driven by fear: The effect of success and failure information on passionate individuals' performance. In Journal of Personality and Social Psychology, 104(1), pages 180-195.

[8] Ian Bogost. 2010. Persuasive Games: the Expressive Power of Videogames. The MIT Press: Cambridge, Massachusetts, USA.

[9] Julia Ayumi Bopp and Elisa D. Mekler. 2016. Negative Emotion, Positive Experience?: Emotionally Moving Moments in Digital Games. In Proceedings of the 2016 CHI Conference on Human Factors in Computing Systems. San Jose, California, USA.

[10] Julia Ayumi Bopp, Klaus Opwis and Elisa D. Mekler. 2018. "An Odd Kind of Pleasure": Differentiating Emotional Challenge in Digital Games. In Proceedings of the 2018 CHI Conference on Human Factors in Computing Systems - CHI '18. Montreal, QC, Canada. 1 – 12.

[11] Virginia Braun and Victoria Clarke. 2020. Successful Qualitative Research: a Practical Guide for Beginners. SAGE Publications. London, UK.

[12] Virginia Braun and Victoria Clarke. 2021. Thematic Analysis: a Practical Guide. SAGE Publications. London, UK.

[13] Virginia Braun and Victoria Clarke. 2019. To saturate or not to saturate? Questioning data saturation as a useful concept for thematic analysis and sample-size rationales. In Qualitative Research in Sport, Exercise and Health (2019), 1–16.

[14] Virginia Braun and Victoria Clarke. 2020. One size fits all? What counts as quality practice in (reflexive) thematic analysis? In Qualitative Research in Psychology. 1 – 25.

[15] Mark Brown and Sky LaRell Anderson. 2020. Designing for Disability: Evaluating the State of Accessibility Design in Video Games. In Games and Culture, 16(6). 702 – 718.

[16] Geoffrey Bunting. 2022. Making Souls games accessible isn't the same as making them easy. On Rock Paper Shotgun. Retrieved on March 30th 2022 from https://www.rockpapershotgun.com/making-souls-games-accessible-isnt-the-same-as-making-them-easy

[17] Paul Cairns and Anna L. Cox. 2008. Research Methods for Human-Computer Interaction. Cambridge University Press. Cambridge, UK.

[18] Amanda Cote and Julia G. Raz. 2015. In-depth interviews for games research. In Games Research Methods: an Overview, ed. by : Petri Lankoski and Staffan Björk. ETC Press. 93 – 116.

[19] Sabrina Culyba. 2019. The Transformational Framework: A Process Tool for the Development of Transformational Games. ETC Press.

[20] Alena Denisova, Julia Ayumi Bopp, Thuy Duong Nguyen and Elisa D. Meckler. 2021. "Whatever the Emotional Experience, It's Up to Them": Insights from Designers of Emotionally Impactful Games. In Proceedings of the 2021 CHI Conference on Human Factors in Computing Systems. CHI '21: CHI Conference on Human Factors in Computing Systems. Yokohama, Japan. 1-9.

[21] Stephanie de Smale, Martijn J. L. Kors and Alyea M. Sandovar. 2019. The Case of This War of Mine: A Production Studies Perspective on Moral Game Design. In Games and Culture, 14(4). 387 – 409.

[22] Sebastian Deterding. 2015. The Lens of Intrinsic Skill Atoms: A Method for Gameful Design. In Human–Computer Interaction. 30(3-4). 294 – 335.

[23] Lina Eklund. 2015. Focus group interviews as a way to evaluate and understand game play experiences. In Games Research Methods: an Overview, ed. by : Petri Lankoski and Staffan Björk. ETC Press. 133 – 148.

[24] Matthew Farber and Karen Schrier. 2021. Beyond Winning: A Situational Analysis of Two Digital Autobiographical Games. In Game Studies. December 2021, 21(4).

[25] Mary Flanagan and Helen Nissenbaum. 2014. Values at Play in Digital Games. The MIT Press: Cambridge, Massachusetts, USA.

[26] Charline Foch and Ben Kirman. 2021. "Slow down and look": Desirable aspects of failure in video games, from the perspective of players. In The 16th International Conference on the Foundations of Digital Games (FDG) 2021 (FDG'21), August 03–06, 2021, Montreal, QC, Canada. ACM, New York, NY, USA. 1 – 10.

[27] William W. Gaver, Jacob Beaver and Steve Benford. 2003. Ambiguity as a Resource for Design. In Proceedings of the 2003 CHI Conference on Human Factors in Computing Systems. CHI '03: CHI Conference on Human Factors in Computing Systems. April 5–10, 2003, Ft. Lauderdale, Florida, USA. 233 – 240.

[28] James Paul Gee. 2005. Learning by Design: Good Video Games as Learning Machines. In E–Learning, 2, 1.

[29] Sabine Harrer. 2013. From Losing to Loss: Exploring the Expressive Capacities of Videogames Beyond Death as Failure. In Culture Unbound: Journal of Current Cultural Research. Linköping University Electronic Press (5). 607- 620.

[30] John Harris. 2021. Exploring Roguelike Games. CRC Press. Boca Raton, Florida, USA.

[31] Ioanna Iacovides, Anna L. Cox, Ara Avakian, and Thomas Knoll. 2014. Player strategies: achieving breakthroughs and progressing in single-player and cooperative games. In Proceedings of the first ACM SIGCHI annual symposium on Computer-human interaction in play (CHI PLAY '14). Association for Computing Machinery, New York, NY, USA, 131–140.

[32] IGN Staff. 2021. The Best Soulslike Games. On IGN. Retrieved on March 30th 2022 from https://www.ign.com/articles/the-best-soulslike-games

[33] Seung-A Annie Jin (2011) "I Feel Present. Therefore, I Experience Flow:" A Structural Equation Modeling Approach to Flow and Presence in Video Games In Journal of Broadcasting & Electronic Media, 55(1), pages 114-136.

[34] Seung-A Annie Jin (2012) "Toward Integrative Models of Flow": Effects of Performance, Skill, Challenge, Playfulness, and Presence on Flow in Video Games In Journal of Broadcasting & Electronic Media, 56(2), pages 169-186.

[35] Jesper Juul. 2009. Fear of Failing? The Many Meanings of Difficulty in Video Games. In The Video Game Theory Reader 2. Routledge. New York, USA, 237-252.

[36] Jesper Juul. 2010. In Search of Lost Time: On Game Goals and Failure Costs. In Proceedings of the International Conference on the Foundations of Digital Games (FDG '10). Monterey, CA, USA, 86-91.

[37] Jesper Juul. 2013. The Art of Failure: an Essay on the Pain of Playing Video Games. The MIT Press. Cambridge, Massachusetts, USA.

[38] Raph Koster. 2013. A Theory of Fun for Game Design. O'Reilly Media, Inc, USA.

[39] William Kuechenberg. 2022. What Makes The 'Breath of the Wild' Story Good: Failure. On Cracked. Retrieved on March 22nd 2022 from https://www.cracked.com/article_32491_what-makes-the-breath-of-the-wild-story-good-failure.html

[40] Jozef Kulik, Jen Beeston and Paul Cairns. 2021. Grounded Theory of Accessible Game Development. In the 16th International Conference on the Foundations of Digital Games (FDG) 2021 (FDG'21). Association for Computing Machinery, New York, NY, USA, Article 28, 1–9.

[41] Shringi Kumari, Sebastian Deterding, and Jonathan Freeman. 2019. The Role of Uncertainty in Moment-to-Moment Player Motivation: A Grounded Theory. In Proceedings of the Annual Symposium on Computer-Human Interaction in Play (CHI PLAY '19). Association for Computing Machinery, New York, NY, USA, 351–363.

[42] Shuen-shing Lee. 2003. "I Lose, Therefore I Think": A Search for Contemplation amid Wars of Push-Button Glare. In Game Studies, 3(2).

[43] Conor Linehan, George Bellord, Ben Kirman and Zachary L. Morford. 2014. Learning curves: analysing pace and challenge in four successful puzzle games. In Proceedings of the first ACM SIGCHI annual symposium on Computer-human interaction in play - CHI PLAY '14. ACM Press, Toronto, Ontario, Canada. Pages 181-190.

[44] Helga S. Løvoll and Joar Vittersø. 2012. Can Balance be Boring? A Critique of the ''Challenges Should Match Skills'' Hypotheses in Flow Theory. In Social Indicators Research, 115(1). 117-136.

[45] Tim Marsh and Brigid Costello. 2013. Lingering Serious Experience as Trigger to Raise Awareness, Encourage Reflection and Change Behavior. In Persuasive Technology. Edited by David Hutchison et al. Springer Berlin Heidelberg. 116-124.

[46] Elisa D. Mekler, Ioanna Iacovides, and Julia Ayumi Bopp. 2018. "A Game that Makes You Question...": Exploring the Role of Reflection for the Player Experience. In Proceedings of the 2018 Annual Symposium on Computer-Human Interaction in Play (CHI PLAY '18). Association for Computing Machinery, New York, NY, USA, 315–327.

[47] Julie Muncy. 2016. It's Time for Videogames to Embrace the Power of Failure Again. On Wired. Retrieved on March 30th 2022 from https://www.wired.com/2016/10/videogames-need-failure/

[48] Ed Nightingale. 2022. What would an accessible Souls game look like? On Eurogamer. Retrieved on March 30th 2022 from https://www.eurogamer.net/articles/2022-02-24-what-would-an-accessible-souls-game-look-like

[49] Mary Beth Oliver, Arthur A. Raney. 2011. Entertainment as Pleasurable and Meaningful: Identifying Hedonic and Eudaimonic Motivations for Entertainment Consumption. In Journal of Communication, 61(5). 984–1004

[50] Kunwoo Park, Meeyoung Cha, Haewoon Kwak and Kuan-Ta Chen. 2017. Achievement and Friends: Key Factors of Player Retention Vary Across Player Levels in Online Multiplayer Games. In Proceedings of the 26th International Conference on World Wide Web Companion - WWW '17 Companion. ACM Press, Perth, Australia. Pages 445 - 453.

[51] Bonnie Ruberg. 2015. No Fun: The Queer Potential of Video Games that Annoy, Anger, Disappoint, Sadden, and Hurt. In QED: A Journal in GLBTQ Worldmaking, 2(2). 108 – 124.

[52] Katie Salen and Eric Zimmerman. 2004. Rules of Play: Game Design Fundamentals. The MIT Press, Cambridge, Massachusetts, USA.

[53] Jesse Schell. 2015. The Art of Game Design: A Book of Lenses. Carnegie Mellon University and Schell Games Pittsburgh, Pennsylvania, USA.

[54] Steam. Soulslike tag. Retrieved on March 30th from https://store.steampowered.com/tags/en/Souls-like

[55] Grant Stoner. 2022. Accessibility Isn't Easy: What 'Easy Mode' Debates Miss About Bringing Games to Everyone. On IGN. Retrieved on March 30th 2022 from https://www.ign.com/articles/video-game-difficulty-accessibility-easy-mode-debate

[56] 3-Fold Games. 2020. "Before I Forget". https://store.steampowered.com/app/1126600/Before_I_Forget/

[57] 11-bit Studios. 2018. "Frostpunk". https://www.frostpunkgame.com/

[58] Altitude Games. 2015. "Run Run Super V". https://www.altitude-games.com/games/run-run-super-v/

[59] Altitude Games. 2017. "Dream Defense". https://www.altitude-games.com/games/dream-defense/

[60] Binary Zero [in development]. "Anytown: Garage Sale Monsters". https://www.anytowngame.com/

[61] Ben Kerslake, Jerry Verhoeven and Alexander Swords [in development]. "Totem Teller". http://www.totemteller.com/

[62] Bossa Studios. 2013. "Surgeon Simulator". https://www.surgeonsim.com/

[63] Bossa Studios. 2015. "I Am Bread". http://www.iambreadgame.com/

[64] Deconstructeam. 2014. "Gods Will Be Watching". http://www.deconstructeam.com/games/gods-will-be-watching/

[65] Deconstructeam. 2018. "The Red Strings Club". https://www.devolverdigital.com/games/the-red-strings-club

[66] Failbetter Games. 2009. "Fallen London". https://www.fallenlondon.com/login

[67] Failbetter Games.2015. "Sunless Sea". https://www.failbettergames.com/games/sunless-sea

[68] Failbetter Games. 2019. "Sunless Skies". https://www.failbettergames.com/games/sunless-skies

[69] Inbetweengames. 2018. "All Walls Must Fall". https://store.steampowered.com/app/628290/All_Walls_Must_Fall_A_TechNoir_Tactics_Game/

[70] Inkle Studios. 2021. "Overboard!". https://www.inklestudios.com/overboard/

[71] Nerial. 2020. "Orwell's Animal Farm". https://store.steampowered.com/app/1398100/Orwells_Animal_Farm/

[72] Paintbucket Games. 2020. "Through the Darkest of Times". https://paintbucket.de/en/game/through-the-darkest-of-times

[73] Lucas Pope. 2013. "Papers, Please". https://papersplea.se/

[74] Lucas Pope. 2018. "Return of the Obra Dinn". https://obradinn.com/

[75] SpaceBackyard. 2019. "Bird of Passage". https://spacebackyard.itch.io/bird-of-passage

[76] Supergiant Games. 2017. "Pyre". https://www.supergiantgames.com/games/pyre

[77]   Supergiant Games. 2020. "Hades". https://www.supergiantgames.com/games/hades/

APPENDICES

Interview questions

Included in this document is a list of questions we used to lead the discussion during the interviews. As we were aiming for semi-structured interviews, and wanted to examine specific game titles, and the roles played by specific individuals in the process of making those games, each interview structure varied slightly based on what we would like to learn from each individual. The questions below served as the foundational guideline for the interviews; new questions sometimes arose during discussion to narrow down the focus on specific points of discussion.

Question 1: Please tell me about the possible failure states in your game. What do you, as a designer/writer/developer identify as a fail state in your game?

Question 2: What did you want your players to take away from their experiences of failure?

Question 3: As a designer/writer/developer, at what stage of the game's development did you start working on fail states and how to implement them? Could you talk me through the thought process behind them?

Question 4: After the release of the game, were there any surprises from players reacting to fail states in the game? Any reactions you were not expecting?

Additional possible questions, should the conversation allow for them:

(for writers and narrative designers) How did you cater for fail states in the narrative structure and story of the game?

(for all) A previous study I did showed at least three dimensions failure can take for players: a learning experience, a social experience, and/or an emotional experience. Very often, a mix of all. What do you think about this, as a designer/writer/developer?

As a designer/writer/developer, is there anything about failure in video games that you think is not discussed or addressed enough?