

The Quest for Ludonarrative:

**Designing a Ludonarrative Analytical Framework for
analysis and design of ludonarrative in games through
analysed case studies; *Hollow Knight*, *Celeste*, and *Brothers:
A Tale of Two Sons***

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Statement of Authentication

The work Presented in this thesis is, to the best of my knowledge and belief, original except
as acknowledged in the text.

I hereby declare that I have not submitted this material, either in full or in part, for a degree
at this or any other institution.

A large black rectangular box redacting the signature of the author.

Alexander Donoghue

26 November 2021

Dedications

Both this thesis and my year of Master's coursework were conducted during the COVID-19 pandemic. During that time, I have been indescribably fortunate to receive constant support, kindness, and mentorship from numerous people. From my colleagues in the 21C project for their patience, assistance, and understanding as I prioritized my thesis. To Dr. Tai Peseta for likely being the best boss I will ever have who has a wonderful mentor in coming to understand the university and how it works. To Dr. Alexie Papanicolaou for throwing more opportunities my way than I honestly knew what to do with and for your honest and pragmatic guidance as I become a young academic. To Kate Richards, my supervisor, for being an unwavering guide, a kind, thoughtful, and incredibly supportive person who kept me grounded and on track, from the bottom of my heart: thank you. To Chris, for keeping me sane, reminding me why I love games, for getting irrationally mad with me in every game we lost, for listening to me whine and complain, for every gif you sent telling me to "NEVER GIVE UP," thank you. To the old man, words cannot describe the magnitude of what I owe you, I doubt I would be here, nor be half the person I am, without you, thank you for being a great dad. And, finally, Erin. I will at long last admit, in irrevocable writing, you are the funniest person I know. You have been a constant support, and you have made me a better man, person, and partner. Thank you for believing in me and never doubting me when all I could do was doubt myself. Love you.

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Abstract

As games have grown into the largest entertainment media in the world, significant research into the social, economic, and cultural impact of games has been conducted. However, investigation into the aesthetic and sense-making capacity of games is less well represented. Specifically, the intersection and synthesis of game narrative and gameplay, known as ludonarrative, is under theorised. This thesis addresses this gap by developing a framework for analysing and designing ludonarrative in games and testing it against three case studies; Hollow Knight, Celeste, and Brothers: A Tale of Two Sons. The thesis includes an extensive literature review which identifies theories and frameworks to construct the Ludonarrative Analytic Framework (LAF), with close playing providing the data for case study analysis. In addition to the LAF, this thesis contributes analysis of the artistic value of the three case studies and furthers the conversation about games' capacity and methods for storytelling.

Introduction

For years the discipline of game studies harboured a long-standing divide between scholars focused on gameplay – ludologists – and those scholars prioritising storytelling, i.e. narratologists. As outlined in the following literature review, this divide culminated in the ludology vs narratology debate of the early 2000s. While that divide has since been somewhat bridged, there remains under-explored tensions, problems, and potential in the integral relationships between the ludic and narrative deployments of interactivity design, aesthetic treatments, and audience registers. This thesis investigates games’¹ capacity and capabilities for deeply engaging audiences through their successful integration of gameplay and narrative. The thesis takes up the term ‘ludonarrative harmony’ to describe this successful integration, with ludonarrative a portmanteau of the terms ludic and narrative, denoting the intersection and interrelationship of those two modes.

In 2007 Clint Hocking wrote a blog post on *Bioshock*² dedicated to what he labelled ‘ludonarrative dissonance’ a negative term for games whose gameplay and narrative are out of alignment. Since then, game critics have often brandished the term as a heavy-handed criticism, yet there has been little academic investigation into determining how we could understand, analyse, and apply ludonarrative strategies and aesthetics for best possible audience engagement.

This thesis seeks to investigate ludonarrative harmony by refocusing on the positive accomplishments of innovative game designers and posing these questions: what interaction design, aesthetic strategies, and audience engagement do games designers deploy to achieve ludonarrative harmony? How do we synthesise and embody gameplay with storytelling applying user experience and interaction design to achieve affectively charged and story laden gameplay?

The thesis then provides a framework for analysing and mapping ludonarrative and uses three case studies to demonstrate how we can evaluate which games accomplish a

¹ While a select number of video games are the artefacts under investigation for this study the findings and conclusions are equally applicable to games more broadly, this will be touched on in the conclusion under further research.

² Clint Hocking, “Ludonarrative Dissonance in Bioshock,” accessed November 11, 2021.
https://clicknothing.typepad.com/click_nothing/2007/10/ludonarrative-d.html.

harmonious interdependence between ludic elements and narrative elements. Specifically, this thesis has three key aims. Firstly, to review the theories and frameworks that are applicable to the analysis of ludonarrative in games. This includes a review of the history of the ludic/narrative divide, a review of the terminologies of ludonarrative, and the identification of theories and frameworks for ludonarrative analysis. The literature also identifies 'close playing' as a method for games analysis, being a game studies variation of literature's close reading of a text.

Secondly, the research aims to establish a ludonarrative analytical framework (LAF) for determining where and how ludonarrative occurs throughout a game. The identified ludonarrative theories and frameworks are mapped into gameplay and narrative categories. Each category can be scaled, according to its ludic and/or narrative quality, with the results visually displayed as an overall ludonarrative scale.

The third aim is the analysis of three game case studies using the LAF and ludonarrative scale with the method of close playing. This includes the objective to test the capacities of the LAF and ludonarrative scale as tools for understanding ludonarrative. The LAF and scale are also iteratively developed throughout the period of close playing. Another objective is to confirm if the case studies are best practice exemplars of ludonarrative design.

The thesis addresses each of the three aims in separate chapters, with a conclusion. The first chapter is dedicated to the literature review. The second chapter details the methodology; the iterative design of the ludonarrative analytical framework; the process of close playing; and the selection process of the games as case studies. The third chapter comprises the case studies being *Hollow Knight*, *Celeste*, and *Brothers: A Tale of Two Sons* respectively. The thesis concludes by providing a summary of the research, highlighting the contributions to the fields of ludonarrative theory and practice including that of the ludonarrative analytic framework, ludonarrative scale and games analysis, and indicating future areas of study.

Chapter 1 Literature review

This literature review will briefly outline the relevant historical turns in game studies before narrowing in on the ludology vs narratology debate. This provides an understanding of what led to game studies' current literature on game's capacity for sense making. Then it conducts a review of the term ludonarrative, and its associated qualifiers (harmonious, dissonant, and so on). The chapter scopes academic literature dedicated to ludonarrative and draws more widely on games studies theories and frameworks to argue for the development of a ludonarrative framework for analysis and design (as detailed in Chapter 2). The review will conclude by briefly examining the method of close playing in literature.

It is important to highlight game studies' often under-recognised beginnings. Mary Ann Buckles' 1985 thesis on *Adventure*,³ one of the earliest and most popular text-based adventure games, is arguably the first academic work on the semiotic value and capacity of games. Buckles' thesis can be identified as a key historic milestone for games studies, with seminal work in the following three decades broadly laying the foundations of the discipline. This foundational, games studies literature also drew on historical concepts of play (specifically ludus as rule-based play and paidia as more poetic, open play forms), and on the social roles and values of play. Another recurring theme is the concept of the magic circle⁴ the bounded, rule-bound space into which players enter when engaging with a game.

In the period from 1985 – 2000 initial investigations undertook broader theorisation, and explorations, of the possibilities provided by games. Key seminal works informed game studies and digital and interactive media, with scholars such as Janet Murray and Marie-Laure Ryan making bold steps in imagining the possibilities of games and their potential as subjects of academic scholarship. Attempts were made to establish game studies as a field with its own scholarship and thinking,⁵ while also drawing on more established disciplinary knowledge and methods from other fields, such as literary studies, sociology, and

³ Mary Ann Buckles. *Interactive Fiction: The Computer Storygame "Adventure."* (Ph.D Thesis. University of California, 1985).

⁴ Johan Huizinga, *Homo Ludens: A Study of the Play-Element in Culture* (Brooklyn: Angelico Press, 2016); Salen and Zimmerman, *Rules of Play* (Cambridge: MIT Press, 2004); Jaakko Stenros. "In Defence of a Magic Circle: The Social, Mental and Cultural Boundaries of Play," *Transactions of the Digital Games Research Association* 1, no. 2 (2014). <http://todigra.org/index.php/todigra/article/view/10/26>.

⁵ Espen Aarseth, "Computer Game Studies, Year One," *Game Studies* 1, no.1 (2001). <http://www.gamestudies.org/0101/editorial.html>.

anthropology.⁶ These latter attempts at integrating other fields would partially contribute to an emerging intellectual schism in the following decade.

From 2001-2009 the 'first wave' of game studies saw some of the largest and most contested debates of game studies' history, namely the ludology vs. narratology debate (the definitions and context of this debate will be outlined further in the next section, but broadly speaking ludology is representative of the gameplay of games, and narratology is aligned with the narrative capacity of games). In this period, a great deal of foundational taxonomical work was done, including a continuation of the integration of other disciplines into games studies.⁷

The period of 2010 to the present, has focused on dedicated textual analysis of individual games rather than the earlier, more generalised theorisation of games. This period has also seen greater investigation into the social good and cultural values of games, with the

⁶ Espen Aarseth, *Cybertext: Perspectives on Ergodic Literature* (Baltimore: JHU Press, 1997); Mary Ann Buckles, *Interactive Fiction: The Computer Storygame "Adventure"*; Janet Murray, *Hamlet on the holodeck: The future of narrative in cyberspace*, (New York: Free Press, 2016); Marie-Laure Ryan, James Ruppert, and John W. Bernet, *Narrative Across Media: The Languages of Storytelling*, (Nebraska: University of Nebraska Press, 2004).

⁷ Barry Atkins, *More than a game: The computer game as fictional form*. (Manchester: Manchester University Press, 2003); Jim Bizzocchi, "Games and Narrative: An Analytical Framework," *Loading* 1, no. 1 (2007): 1-10, <http://journals.sfu.ca/loading/index.php/loading/article/view/1>; Janet Murray, "The Last Word on Ludology v Narratology in Games Studies," Presentation at the DiGRA conference, Vancouver, June 2005; Grant Tavinor, "Videogames and Interactive Fiction," *Philosophy and Literature* 29, no.1 (2005): 24-40.

development of fields such as queer game studies.⁸ There is also now an increased focus on the economic,⁹ educational,¹⁰ health,¹¹ and political¹² values of games.

1.1 Nomenclature

Across the three decades of games studies outlined above, definitions, nomenclature, and competing taxonomies have been hotly debated. To advance the field, this thesis specifically takes up the concept of ludonarrative and analyses case studies in terms of the efficacy and nuance of their application of ludonarrativity in a harmonic way.

Rather than providing a glossary of games studies' terms I aim to deploy Jonne Arjoranta's approach based in a hermeneutic and Wittgensteinian understanding of language, that is honest and pragmatic: the definitions in this study will consider the definitions used in previous academic literature, while being clear about their contextual use within this work.¹³ In other words, the goal of the language and taxonomy used within this research is

⁸ Bonnie Ruberg and Adrienne Shaw, *Queer Game Studies*. (Minnesota, University of Minnesota Press: 2017).

⁹ Australia Unlimited, *Digital Games*, Sydney, NSW: Australian Government Department Trade and Investment Commission, 2017; FinancesOnline, "Number of Gamers Worldwide 2021/2022: Demographics, Statistics, and Predictions," Accessed November 11, 2021. <https://financesonline.com/number-of-gamers-worldwide/>; Matthew Johnson, "Building the character: Imagined consciousness in roleplaying videogames," *Text* 49 (2018).

¹⁰ Matthew Barr, "Video Games can develop graduate skills in Higher Education students: A randomised trial," *Computers and Education*, 113 (2017): 86-97. <https://doi.org/10.1016/j.compedu.2017.05.016>; Jeffery E. Brand, et al., *Digital Australia 2020*, Eveleigh, NSW: IGEA, 2019; Marcus Carter, et al., "EVE is Real: How Conceptions of the 'Real' Affect and Reflect an Online Game Community," *Well Played* 5, no.2 (2016): 5-33; Marcus Carter, et al., "Children's perspectives and attitudes towards Fortnite 'addiction,'" *Media International Australia* 176, no.1 (2020): 138-151. <https://doi.org/10.1177%2F1329878X20921568>; Viviane Kovess-Masfety, et al., "Is Time Spent Playing Video Games Associated with Mental Health, Cognitive and Social Skills in Young Children?" *Social Psychiatry and Psychiatric Epidemiology* 51, no. 3 (2016): 349-357. <https://doi.org/10.1007/s00127-016-1179-6>; Michael F. Young, et al., "Our Princess is in Another Castle: A Review of Trends in Serious Gaming for Education," *Review of Educational Research* 82, no.1 (2012): 61-89. <https://doi.org/10.3102%2F0034654312436980>.

¹¹ Frederick Imbeault, Bruno Bouchard, and Abdenour Bouzouane, "Serious Games in Cognitive Training for Alzheimer's Patients," In *2011 IEEE 1st International Conference on Serious Games and Applications for Health (SeGAH)*. (Braga: Portugal, 2012). <https://doi.org/10.1109/SeGAH.2011.6165447>; Vasudevan Janarthanan, "Serious Video Games: Games for Education and Health," In *2012 Ninth International Conference on Information Technology – New Generations*. Las Vegas: IEEE, 2012. <https://doi.org/10.1109/ITNG.2012.79>; Christian M. Jones, et al., "Gaming Well: Links between Videogames and flourishing mental health," *Frontiers in Psychology* 5 (2014): 1-8. <https://doi.org/10.3389/fpsyg.2014.00260>; Simon McCallum, and Costas Boletsis, "A taxonomy of serious games for dementia," In *Games for Health: Proceedings of the 3rd European Conference on Gaming and Playful Interaction in Health Care*, ed Ben Schouten, et al., 219-232. (Wiesbaden: Springer Vieweg, 2013). <https://doi.org/10.1007/978-3-658-02897-8>; Carmen V. Russoniello, Kevin O'Brien and Jennifer M. Parks, "The Effectiveness of Casual Video Games in Improving Mood and Decreasing Stress," *Journal of Cyber Therapy and Rehabilitation* 2, no.1 (2009): 53-66; Yamaguchi, Y. Maki and K. Takahashi, "Rehabilitation for dementia using enjoyable video-sports games," *International Psychogeriatrics* 23, no.4 (2011): 674-676. <https://doi.org/10.1017/S1041610210001912>.

¹² Rene Glas, et al., *The Playful Citizen: Civic Engagement in a Mediatized Culture* (Amsterdam: Amsterdam University Press, 2019).

¹³ Jonne Arjoranta, "How to Define Games and Why We Need to," *The Computer Games Journal* 8 (2019): 114-115. <https://doi.org/10.1007/s40869-019-00080-6>; Jonne Arjoranta, "Game Definitions: A Wittgensteinian Approach," *Game Studies: The International Journal of Computer Game Research* 14, no. 1 (August 2014): 13, <http://gamestudies.org/1401/articles/arjoranta>.

to be as simple and as easily understood as possible within the context of the work itself. To that point, one of the most complex taxonomical projects in game studies is to describe firmly and satisfactorily, what is a game. This research project adopts Arjoranta's definition of games as exhibiting a "shared understanding of their 'gameness,' their network of shared family resemblances."¹⁴ In other words, games are understood as games on the basis that we collectively as humans can identify what is and is not a game by its gameness, which can be understood as complex multi-modal engagement (cognitive, affective, embodied, intertextual) affording immersive sensory experience through rule based play.

The concept of play is often tied to the term ludic in game studies. Derived from ludus (referring to rule-based play) ludic defines the rule-based elements of game systems and is associated with the broader definition of gameplay.¹⁵ Comprising the other half of ludonarrative, narratology as a concept was initially drawn from the literary structuralism of Barthes, Strauss, and Saussure, and is a term denoting specific methods and literary analysis.¹⁶ While this term has seen use historically in game studies, (see ludology vs narratology) it is commonly misconstrued to mean narrative studies/structures generally. Conflict over the taxonomy of the associated term narrative, with narrative being commonly generalised to the concept of a story, was a major source of disagreement and confusion within the ludology vs narratology debate. For the purposes of this study the term narrative will not refer to the structuralist notion of narrative, but the broader understanding of narrative being deployed by game studies narratologists.¹⁷

Ludonarrative is a portmanteau comprised of the terms ludology (the study of the ludic) and narrative, first coined in 2007.¹⁸ For Weimin, "A video game with ludonarrative resonance, where the narrative and gameplay concepts are combined successfully, immerses the player in the gameworld by allowing the player to interact with a story they want to believe in, in a

¹⁴ Jonne Arjoranta, "Real-Time Hermeneutics: Meaning-Making in Ludonarrative Digital Games," (Doctoral Dissertation. University of Jyväskylä. 2015): 56.

¹⁵ Ludology is vaguely once considered to be the title for the academic study of games, now superseded by game studies, it is a term denoting the study of ludic systems, largely outdated.

¹⁶ Elizabeth Anne Reblin, *To Build the Impossible: Narratology and Ludology in the BioShock Trilogy*, (Master's thesis, The University of Texas. 2015), 6-7

¹⁷ However, there is an argument to be made that games contain narrators although in less traditional and recognisable forms, i.e. the player and systems themselves could be construed as narrators.

¹⁸ Hocking, "Ludonarrative Dissonance in Bioshock."

satisfying way.”¹⁹ Despain and Ash define ludonarrative implicitly between harmony and dissonance as the opposites of synchronicity and a consistent play experience.²⁰ That is, while they define what ludonarrative harmony and dissonance are, they do not offer a concrete definition of ludonarrative itself.

For this thesis ludonarrative is defined as the combined potential, and actual, synthesis of a game’s narrative and the gameplay, which can include the affective and cognitive experience of that gameplay.

Instances of ludonarrativity that see successful synthesis between narrative and the gameplay have what is known as ludonarrative harmony.²¹ Harmony is the common term for this synthesis; however, resonance²² and synchronicity²³ have also been used interchangeably with this term in scholarly literature. There are two key perspectives when considering ludonarrative harmony: top down and bottom up.²⁴ That is, we can understand ludonarrative harmony as a designed affordance of the text, derived through authorial intent and construction – top-down, or we can understand ludonarrative harmony as an affordance for player affect and engagement – bottom-up. These two differing structures of understanding ludonarrative can be seen in Despain and Ash’s²⁵ and Weimin’s²⁶ work respectively.

Instances of ludonarrativity that do not exhibit synthesis and integration between the narrative and gameplay’s narrative are considered to have (ludonarrative) dissonance.²⁷ Generally, ludonarrative dissonance is a well agreed upon term, and will be used as such in this study. Yet it is important to avoid an assumption that dissonance is a inherently negative attribute – the literature (and public view) could be extended to consider the

¹⁹ Toh Weimin, *A Multimodal Discourse Analysis of Video Games: A Ludonarrative Model* (Doctoral thesis. National University of Singapore, 2015): 241.

²⁰ Wendy Despain and Lauryn Ash, *Designing for Ludonarrative Harmony* (Master’s Thesis, Southern Methodist University, 2016): 1.

²¹ Despain and Ash, *Designing for Ludonarrative Harmony*, 1.

²² Reblin, *To Build the Impossible: Narratology and Ludology in the BioShock Trilogy*, 3; Although resonance can have a slightly differing meaning, a player’s experience of synchronous elements, for the purpose of this research such a subtle distinction is taxing.

²³ Reblin, *To Build the Impossible: Narratology and Ludology in the BioShock Trilogy*, 19.

²⁴ These terms were chosen due to the proximity to design and programming and the term’s usages in those fields map well onto this way of considering potential ludonarrative.

²⁵ Despain and Ash, *Designing for Ludonarrative Harmony*, 27.

²⁶ Weimin, *A Multimodal Discourse Analysis of Video Games: A Ludonarrative Model*, 213.

²⁷ Hocking, “Ludonarrative Dissonance in Bioshock;” Reblin, *To Build the Impossible: Narratology and Ludology in the BioShock Trilogy*, 11-15; Weimin, *A Multimodal Discourse Analysis of Video Games: A Ludonarrative Model*, 226-232; Despain, and Ash, *Designing for Ludonarrative Harmony*, 1.

possibilities of ludonarrative dissonance as a pro-active device for providing a dynamically textured choreography of user affects, or developing meaning through contradiction.²⁸

A less seen but still nuanced term is ludonarrative cohesion. “When the thematic elements of the game are *inherently tied to the player’s narrative use of those mechanics*,”²⁹ the game can be described as having ludonarrative cohesion.³⁰ Essentially this represents a sub-category of ludonarrative wherein the over-arching themes of a game are experienced by the player through the mechanics of the game. While this concept will be explored, specifically in the case study *Celeste*, the term adds confusion and complication, so, for simplicity’s sake it will be replaced with phases such as, ‘thematic exploration through ludonarrative.’

Ludonarrative (Ir)relevance³¹ is defined as the middle ground between the poles of harmony and dissonance. Largely construed as instances where design teams didn’t work in concert, and the narrative and gameplay were developed separately from one another.³²

1.2 Ludology vs Narratology

The ludology vs narratology debate of the early 2000s occurred between two ideological camps, ludology and narratology. This debate saw its fair share of articles published both during the years of debate, and in the following years as something of a post-mortem analysis.³³ It has since been concluded that the debate was the result of miscommunication, misunderstandings in taxonomy, disagreements about the introduction of theories and methodological approaches from other disciplines, and passionate theorists attempting

²⁸ Frédéric Searphine. “Ludonarrative Dissonance: Is Storytelling about Reaching Harmony?” (2016). Retrieved from https://www.researchgate.net/publication/307569310_Ludonarrative_Dissonance_Is_Storytelling_About_Reaching_Harmony.

²⁹ Despain and Ash, *Designing for Ludonarrative Harmony*, 3.

³⁰ Despain and Ash, *Designing for Ludonarrative Harmony*, 3.

³¹ Weimin, *A Multimodal Discourse Analysis of Video Games: A Ludonarrative Model*, 268.

³² NB: Weimin has constructed 25 sub-categories of ludonarrative within three hypernym’s (resonance, dissonance, (Ir)relevance). With the introduction of the ludonarrative scale some of these disparate sub-categories merge into a single sub-category across a single axis. While being a tremendous taxonomical effort, not all Weimin’s sub-categories are sufficiently defined to warrant examination within the scope of this thesis.

³³ Jim Bizzocchi, “Games and Narrative: An Analytical Framework,” *Loading* 1, no. 1 (2007): 1, <http://journals.sfu.ca/loading/index.php/loading/article/view/1>; Gonzalo Frasca, “Ludologists love stories, too: notes from a debate that never took place,” In *Proceedings of the 2003 DIGRA International Conference: Level Up 2* (2003). <http://www.digra.org/digital-library/publications/ludologists-love-stories-too-notes-from-a-debate-that-never-took-place/>; Michalis Kokonis, “Intermediality between games and fiction: The “ludoogy vs. narratology” debate in computer game studies: A response to Gonzalo Frasca,” *Acta Universitatis Sapientiae, Film and Media Studies* 9, no. 1 (2014).

their best to establish a field of study.³⁴ While a middle ground was largely met, summarised in Bizzocchi's article,³⁵ what remains is an unsatisfactory account for the intersection of narrative and gameplay in games. This could be due to the vehemence of the debate, and an unwillingness to re-enter that troubled space, which has left ludonarrative under-theorised. The wake of this debate saw the proliferation of player and designer perspectives that ultimately created larger debates within the public gaming community around the ideas of ludonarrative dissonance. Most notably a blog post by Hocking in 2007,³⁶ which sparked years of criticism surrounding the idea of ludonarrative dissonance. Inevitably, critics' focus on the negative associations of ludonarrative dissonance led to designer exhaustion of the term, and a subsequent fading of it from most critic's vocabulary in the mid-2010s.³⁷ This public discussion was less represented within academic scholarship, with a handful game studies scholars engaging with the discourse around ludonarrative in the wake of the ludology vs narratology debate.

In the early work done in game studies, theorists made great strides in attempting to explore new systems of understanding and interpreting games and games' approaches to meaning making. Murray initially began challenging the mutual distinction between ludology and narratology and attempted to understand the affordances of newer digital media in her seminal work, *Hamlet on the Holodeck*.³⁸ This willingness to creatively and conceptually meld interactivity and narrative has informed much of the ludonarrative literature since. In a similar vein, Ryan not only began understanding the ways digital texts (games and other) could build on and deviate from traditional literary theory, but also began theorising about the possible impacts of Virtual Reality (VR) on affective media.³⁹ This would heavily influence future researchers investigating VR in the recent years of its more accessible release.

While Murray and Ryan represent the main actors in what would become the narratological camp in the next decade, no less important is the work contributed by the early ludologists,

³⁴ Bizzocchi, "Games and Narrative: An Analytical Framework," 1.

³⁵ Bizzocchi, "Games and Narrative: An Analytical Framework," 1.

³⁶ Hocking, "Ludonarrative Dissonance in Bioshock."

³⁷ Chris Plante, "The *Last of Us 2* epitomizes one of gaming's longest debates," *Polygon*. June 26, 2020. <https://www.polygon.com/2020/6/26/21304642/the-last-of-us-2-violence>.

³⁸ Janet Murray, *Hamlet on the holodeck: The future of narrative in cyberspace* (New York: Free Press, 2016).

³⁹ Marie-Laure Ryan, "Immersion vs. Interactivity: Virtual Reality and Literary Theory," *SubStance* 28, no.2 (1998): 110-137. <https://doi.org/10.2307/3685793>.

Aarseth and Juul. It is important to consider Aarseth's application of the statistical and mathematical idea of ergodic (where each possibility is equally representative of the whole) to games as a text, i.e. that a game's multiple possible endings, gamestates, characters, progression, playstyles, and ways of playing are all equally representative of the whole of the game, and as such should be considered when analysing a game.⁴⁰ That is not to say that a scholar should be versed in every possibility a game has to offer, such total mastery as Vella notes⁴¹, is nigh-on impossible within the confines of a human lifespan. What it does suggest is that scholars must be sensitive to the multitudes contained within the singular and consider the implications for their works, readings, analyses, and interpretations. Juul is well-known for having declared in his thesis in 1998 that games cannot contain narratives (a position that he has in later years decided was incorrect), instead proceeding from a ludology perspective to theorise about the nature of games, how players engage with them, and what they are as aesthetic objects.⁴²

1.3 Literature on Ludonarrative

The ludology vs narratology schism of the early 2000s allowed for many new and different forms of analysis, which led to the discourses through which ludonarrative as a concept would further develop. Building on these fractured foundations scholars began to establish a common ground upon which to interpret and create an understanding of ludonarrative. Pynenburg created a summary of ludological and narratological approaches to analysis during the 2000s, as well as highlighting the transition to hybrid forms of analysis.⁴³ While Pynenburg does indicate the formation of harmonic games, much has changed in the proceeding decade, in both academic and design spaces. In a similar approach, Reblin focused on analysing the ludonarrative synchronicity across the *Bioshock* series, and the lead designer's intention to not favour narratology or ludology but "meet in the middle ... to build the impossible."⁴⁴ Reblin importantly distinguishes between the artistic success made

⁴⁰ Aarseth, *Cybertext: Perspectives on Ergodic Literature*.

⁴¹ Daniel Vella, "No Mastery Without Mystery: Dark Souls and the Ludic Sublime," *Game Studies: The International Journal of Video Game Research* 15, no. 1 (July 2015), <http://gamestudies.org/1501/articles/vella>.

⁴² Jesper Juul, *A Clash between Game and Narrative: A thesis on computer games and interactive fiction*. (Master's Thesis. University of Copenhagen, 1999).

⁴³ Travis Pynenburg, *Games Worth a Thousand Words: Critical Approaches and Ludonarrative Harmony in Interactive Narrative* (Honours Thesis. University of New Hampshire, 2012), 19-23.

⁴⁴ Reblin, *To Build the Impossible: Narratology and Ludology in the BioShock Trilogy*, 97.

possible in the pursuit of ludonarrative and the financial success that is often desired for an entertainment product, concluding that it “isn’t what the majority of the market is looking for right now,”⁴⁵ but recognises that the market will change in time.⁴⁶ Reblin’s ludonarrative analysis focuses on the concepts of themes, level design, and immersion.⁴⁷ However, with more recent investigation into ludonarrative Reblin’s analysis lacks reference and engagement with the broader discourse on ludonarrative, (for instance while it is more broadly referred to as ludonarrative harmony/resonance in most other work, Reblin has alternatively labelled it as ludonarrative synchronicity in opposition to Hocking’s ludonarrative dissonance).

In contrast Weimin’s thesis focuses on player experiences and understanding of ludonarrative; resonance, dissonance, and (Ir)relevance.⁴⁸ Weimin’s list of ludonarrative instances and devices represents a thorough dive into the affective possibilities afforded by ludonarrativity; however, it is likely too cumbersome for design purposes, and not detailed enough for academic purposes. This thesis draws on and simplifies much of the variation found within Weimin’s taxonomical list by relegating them, or aspects of them, to a scale of elements rather than listing each individually, which will allow for a greater depth of exploration of ideas and trends rather than specific instances.

Addressing a gap in the design-focused literature, Despain and Ash have developed and implemented a design model for achieving ludonarrative harmony in design processes, which focuses on the relationship and loop between “mechanic -> narrative -> context -> emotion -> mechanic -> and so on.” In their thesis, they deploy the model in designing a ludonarratively harmonic [game] level and demonstrate their approach to ludonarrative design.⁴⁹ However, this study is limited to a designer’s perspective, throughout the design process, using only a single level and individual elements. It requires testing, modification, application to entire games, game systems, and beyond just ludonarrative harmony to other forms of ludonarrativity, devices, and contexts.

⁴⁵ Reblin, *To Build the Impossible: Narratology and Ludology in the BioShock Trilogy*, 98.

⁴⁶ Reblin, *To Build the Impossible: Narratology and Ludology in the BioShock Trilogy*, 98.

⁴⁷ Reblin, *To Build the Impossible: Narratology and Ludology in the BioShock Trilogy*, 39.

⁴⁸ Weimin, *A Multimodal Discourse Analysis of Video Games: A Ludonarrative Model*, 278-279.

⁴⁹ Despain, and Ash, *Designing for Ludonarrative Harmony*, 11.

Koenitz's theoretical framework for interactive digital narrative highlights the development of new ways of understanding and viewing games, their narratives, and structure.

Specifically, the deployment of protostory, narrative design, and narrative vectors act as excellent lenses to examine how the structure of games' narrative can inform gameplay design.⁵⁰ Koenitz's framework can be viewed as a modified form of reader response theory adapted to game studies that includes the extra step of players constructing a plan that inflects on future interaction and choices.⁵¹ This interpretive theory was further developed by Roth et al., to develop a hermeneutic strip that includes two connected loops for player interaction and interpretation developing the current instantiated narrative, or more simply game/player state.⁵² This hermeneutic strip is valuable when considering how games develop a player's assumptions about the game, to then create player reflection on that experience, or upset it to create meaning in line with Schleiner's theorisation about 'broken-toy mechanics.'⁵³ Before detailing Schleiner's theory we need to scope ludonarrative dissonance.

While the above theorists have focused on ways of developing and interpreting harmonic ludonarrative, or entire semiotic structures, there is also scholarly investigation into ludonarrative dissonance. Murphy outlines the life cycle of the term ludonarrative dissonance within broader online communities as well as amongst game critics in the wake of Hocking's article.⁵⁴ Additionally, Murphy begins to indicate the potential of ludonarrative dissonance as a means of political critique, however the concept remains limited and in need of further development and examination.⁵⁵

Seraphine broadens this conception of the semiotic potential within dissonance through their literature review of ludonarrative dissonance, which contains a codified list of other

⁵⁰ Hartmut Koenitz, "Towards a Specific Theory of Interactive Digital Narrative," In *Interactive Digital Narrative*, edited by Hartmut Koenitz, 91-105. (New York: Routledge, 2015).

⁵¹ Koenitz, "Towards A Specific Theory of Interactive Digital Narrative," 99-100.

⁵² Christian Roth, Tom van Nuenen, and Hartmut Koenitz, "Ludonarrative Hermeneutics: A Way Out and the Narrative Paradox," in *Interactive Storytelling: 11th International Conference on Interactive Digital Storytelling, ICIDS 2018, Dublin, Ireland, December 5-8, 2018, Proceedings*, edited by Rebecca Rouse, Hartmut Koenitz, and Mads Haahr. 100. (Springer, 2018). <https://doi.org/10.1007/978-3-030-04028-4>.

⁵³ Anne-Marie Schleiner, "The broken toy tactic: Clockwork worlds and activist games," in *The Playful Citizen. Civic Engagement in a Mediatized Culture*, ed. Glas, Rene, et al. (Amsterdam: Amsterdam University Press, 2019). <https://doi.org/10.5117/9789462984523>.

⁵⁴ David Murphy, "Hybrid Moments: Using Ludonarrative Dissonance for Political Critique," *Loading* 10, no. 15 (2016). <https://loading.journals.publicknowledgeproject.org/loading/index.php/loading/article/view/147>. 5.

⁵⁵ Murphy, "Hybrid Moments: Using Ludonarrative Dissonance for Political Critique," 6-8.

perspectives and terms. These include ludonarrative biases (an assumption that ludonarrative dissonance is an inherently negative form of games) and ludonarrative potentiality (a recognition of the emotional potential that can arise from ‘moral disagreement’ that can be found in ludonarrative dissonance).⁵⁶ Seraphine summarises the debates occurring within the potential of emergent vs embedded narratives as ludonarratively harmonic vehicles and describes the possibility of purposeful ludonarrative dissonance as valuable narrative device.⁵⁷

Examining the potentials of and for ludonarrative dissonance, links to the theorisation of games as vehicles for social good and political critique. Schleiner presents an account of how two games develop what is labelled as ‘broken-toy’ mechanics, which allows them, or fails to allow them, to convey political critique through gameplay and encourage player reflection.⁵⁸ However, the games analysed are heavily ludic focused and generally lack a developed narrative; both lean towards simulation type games, one a jet-fighter pilot in the wake on 9-11, and the other running a McDonalds-like food franchise.⁵⁹

Research has also been conducted into the potential for ludonarrative design to influence community development, the community being the player-base of fans and critics that engage with the game and one another within and beyond the context of the game. Schniz has highlighted that how games are designed - their world-building/lore, atmosphere, and gameplay systems - can in effect create a different kind of ludonarrative that extends into community interactions.⁶⁰ Schniz recognised that a game’s influence can expand beyond the borders of the game and define and influence how game fandoms and communities develop and communicate.⁶¹ This links into discourse around design for social good in gaming, and how we create reflective experiences in games. By extending Schniz’s concept, we can see how the ludonarrative design of games can act as vehicles for social good, and positive social change. Similar trends are identifiable around empathy and identification in queer game spaces, particularly around the notion of games as safe spaces for queer or trans

⁵⁶ Seraphine, “Ludonarrative Dissonance: Is Storytelling about Reaching Harmony?” 3-4.

⁵⁷ Seraphine, “Ludonarrative Dissonance: Is Storytelling about Reaching Harmony?” 6.

⁵⁸ Schleiner, “The broken toy tactic: Clockwork worlds and activist games,” 134-135.

⁵⁹ Schleiner, “The broken toy tactic: Clockwork worlds and activist games,” 126-130.

⁶⁰ Felix Schniz, “Sceptical Hunter(s): A Critical Approach to the Cryptic Ludonarrative of *Bloodborne* and Its Player Community,” *The Philosophy of Computer Games Conference, Malta 2016*. (2016).

⁶¹ Schniz, “Sceptical Hunter(s): A Critical Approach to the Cryptic Ludonarrative of *Bloodborne* and Its Player Community.”

identify exploration.⁶² While there is a risk of simplifying the experiences of minorities in games, the opportunities potentially afforded by ludonarrative design for identification, empathy, and positive emotional connection cannot and should not be ignored in the hopes for more socially just, representational, and kinder world - digitally and materially.

1.4 Relevant theories and frameworks for ludonarrative analysis

This section will detail the theories, frameworks, and literature that will inform the ludonarrative analytical framework and the subsequent game analysis in the case studies.

Johnson considers the negotiations players make between a potentially unmoving and inevitable game and narrative system, and player's perception of their own experience of the game, its narrative, and their character's narrative.⁶³ This negotiation is a variation of emergent narrative in response to embedded narrative that is modulated by the avatar perspective. It provides another dimension through which players engage with a game system to, in Johnson's words, "revise the narrative,"⁶⁴ which we can interpret as an experience akin to reader response theory from literary studies. Player's capacity to revise experiences can be applied to how we interpret and analyse various ludonarrative elements.

Considering how narratives change, Aytemiz, Junius, and Altice consider how temporal changes in game systems generate meaning, and they developed a series of questions to consider when analysing game systems for meaning.⁶⁵ This thesis has taken inspiration from this set of question to develop provocations that guide the Ludonarrative Analytical Framework's usage for analysis.

One of the core aspects of games is their treatment of spatiality. Jenkin's key article on the design of game world as narrative architecture has served as a cornerstone for understanding space in games.⁶⁶ Wei, Bizzocchi, and Calvert expanded on Jenkin's work to examine how narrative structures, gameplay, and temporal structures integrated with

⁶² Kai Baldwin, "Virtual Avatars: Trans Experiences of Ideal Selves Through Gaming," *Markets, Globalization & Development Review* 3, no.3 (2018). <https://doi.org/10.23860/MGDR-2018-03-03-04>.

⁶³ Johnson, "Building the character: Imagined consciousness in roleplaying videogames," 14.

⁶⁴ Johnson, "Building the character: Imagined consciousness in roleplaying videogames," 14.

⁶⁵ Batu Aytemiz, Nick Junius, and Nathan Altice, "Exploring How Changes in Games Systems Generate Meaning," in *DiGRA'19 - Proceedings of the 2019 DiGRA International Conference: Game, Play and the Emerging Ludo-mix*. DiGRA, 2019.

⁶⁶ Henry Jenkins, "Game design as narrative architecture," in *First Person: New Media as Story, Performance and Game*, ed. Noah Wardrip-Fruin and Pat Harrigan, 118-130. (Cambridge, Massachusetts: MIT Press, 2004).

spatial structures.⁶⁷ The frameworks they developed to analyse the synthesis of these ludic and narrative elements will inform my approach to analysing ludonarrative in games. Juul also considered how players actively and passively understand and engage with multiple temporalities when playing with a game.⁶⁸ The conceptualisation of various temporalities that players experience offers rich ground for considering how game time, narrative time, and real time can co-exist to develop meaning and affective responses. Further extending Jenkin's conceptions of game spaces, Golding reminds us to consider in-game space not from the perspective of a creator above, but from the in-world experience of the player,⁶⁹ much in the same way as close playing encourages us to consider multiple perspectives when conducting our analyses. Golding extends their analysis to the affective aspect of games, considering intended affective responses for the player through a lens of immersion.⁷⁰

Zonaga and Carter have demonstrated through analysis how engaging with a game's architecture can develop player knowledge and understanding of the gameworld through "metaphoric representations" to become a contextual storytelling component informing the morality of the fictional setting and consequences of player actions.⁷¹ While Zonaga and Carter initially engaged with their analysis from a visual approach, spatiality became an important aspect of their results.⁷² Their approach will be adopted to the analysis of the visuals and spatial elements of the upcoming case studies to understand the metaphors and allusions deployed, which can then be applied to a ludonarrative analysis.

Huaxin and Durango examine the narrative potential in the designing of puzzles for games by considering how puzzles can develop player understandings, and interpretations, of

⁶⁷ Huaxin Wei, Jim Bizzocchi and Tom Calvert, "Time and Space in Digital Game Storytelling," *International Journal of Computer Games Technology* 2010 (January 2011): 1-23. <https://doi.org/10.1155/2010/897217>.

⁶⁸ Jesper Juul, "Introduction to Game Time," in *First Person: New Media as Story, Performance and Game*, ed. Noah Wardrip-Fruin and Pat Harrigan, 131-142. (Cambridge, Massachusetts: MIT Press, 2004).

⁶⁹ Dan Golding, "Putting the Player back in their Place: Spatial Analysis from Below," *Journal of Gaming and Virtual Worlds* 5, no.2 (2013): 128. https://doi.org/10.1386/jgvw.5.2.117_1

⁷⁰ Golding, "Putting the Player back in their Place: Spatial Analysis from Below," 128; Wei, Bizzocchi and Calvert, "Time and Space in Digital Game Storytelling," 12.

⁷¹ Anthony Zonaga and Marcus Carter, "The role of Architecture in Constructing Gameworlds: Intertextual Allusions, Metaphorical Representations and Societal Ethics in *Dishonored*," *Loading 12*, no.20 (2019): 79-81, <https://doi.org/10.7202/1065898ar>.

⁷² Zonaga and Carter, "The role of Architecture in Constructing Gameworlds: Intertextual Allusions, Metaphorical Representations and Societal Ethics in *Dishonored*," 84-86.

game story.⁷³ In other words, puzzles are an affordance of game systems for communicating narrative information. We can extend this theorisation to be applied to concepts of gameworld, emergent narrative, and an analysis of puzzle mechanics as ludonarrative artefacts. Additionally, we can adapt these ideas and consider how puzzles not only provide narrative information, but can become vessel for developing affective responses, and for leveraging players' emotional investment within a game.

Beyond the game world's potential Bizzocchi, Lin, and Tanenbaum have recognised the narrative potential contained within the traditionally ludic system of user interface.⁷⁴ They broke this down into four categories; look and feel; narrativized perspective; behavioural mimicking and behavioural metaphors; 'bridging' or mixed reality.⁷⁵ These techniques mix and intermingle in a game's presentation and they allow us a method of viewing the core interactive elements of a game under the context of narratively integrated tools. However, by considering how these systems act and stand for certain ludic elements, we can consider expanding their definitions beyond the interactive interface between player and game into other ludic aspect of the games such as game world, music, and game mechanics. The core theme behind this interactivity is player agency. Bizzocchi and Tanenbaum have examined how player agency and choice can be used as devices for systems to construct and determine narrative in *Mass Effect 2*.⁷⁶ Their examination of player agency within the context of narrative, relational, and ludic systems and how these impact the implicit ludonarrative design of the game engenders the question of agency in player design.⁷⁷ The authors arrive at similar conclusion to Jorgenson's analysis of designing for controlled player agency in *Mass Effect 2* and *Dragon Age: Origin* through micronarratives, a term Bizzocchi consistently draws on.⁷⁸ Jorgensen has demonstrated how some designers deploy micro-narrative through secondary characters in narrative, making them hold narrative weight and allowing for player choice and agency within a contained, or quarantined, space while

⁷³ Huaxin Wei, and Betty Durango, "Exploring the Role of Narrative Puzzles in Game Storytelling," in *DiGRA'19 - Proceedings of the 2019 DiGRA International Conference: Game, Play and the Emerging Ludo-mix*. 10-11.

⁷⁴ Jim Bizzocchi, M.A. Ben Lin, and Joshua Tanenbaum, "Games, narrative and the design of interface," *International Journal of Arts and Technology* 4, no.4 (2011): 461-462. <https://doi.org/10.1504/IJART.2011.043445>.

⁷⁵ Bizzocchi, "Games, narrative and the design of interface," 475-477.

⁷⁶ Jim Bizzocchi, and Joshua Tanenbaum, "Mass Effect 2: A Case Study in the Design of Game Narrative," *Bulletin of Science, Technology & Society* 32, no.5 (2012): 397-401. <https://doi.org/10.1177%2F0270467612463796>.

⁷⁷ Bizzocchi, "Mass Effect 2: A Case Study in the Design of Game Narrative," 401-402.

⁷⁸ Jim Bizzocchi, "Games and Narrative: An Analytical Framework," 7-8; Kristine Jørgensen, "Game Characters as Narrative Devices. A Comparative Analysis of Dragon Age: Origins and Mass Effect 2," *Eludamos. Journal for Computer Game Culture* 4, no. 2 (2010): 325-328. <https://www.eludamos.org/index.php/eludamos/article/view/vol4no2-13/192>.

maintaining designer's authority and control over the overarching narrative and gameplay.⁷⁹ While both papers consider how these games' structures incorporate player agency into narrative while maintaining authorial intent there remains questions about how agency controls, responds to, engages with, and is shaped through ludonarrative. These considerations of how player agency is regulated by authorial intent, and the avenues available for agency to develop narrative are core components of how we can consider agency's role in ludonarrative design and analysis.

Knoller notes that the utopian game design ideal of complete and total player agency and lack of authorial intent is inherently fantastical and untrue to the artistic possibilities afforded within constrained forms of player agency.⁸⁰ Knoller invites us to re-imagine how we might consider the limits and uses of agency and restricted agency within interactive digital narratives as avenues for art.⁸¹ We can apply this same broader valuing of varying levels of agency to understanding ludonarrative by recognising that restricted agency not only allows for more authorial control but also provides potential meaning to be interpreted from the player's limited agency.

Cole builds on these considerations of agency by discussing "lenses of agency," specifically considering how agency can be more than free will and choice but rather a decision to engage with and construct alongside a designer's narrative and game design.⁸² This focus on various agencies within game design serves as a counterpoint to normally negative connotations provided to gaming experiences with less room for player agency and provides us with a lens to consider the value of limited agency in ludonarrative and game's sense making processes. Additionally, Cole also indicates further possible study when considering the agency of the camera in video games,⁸³ which this thesis will examine when analysing *Brothers*.

⁷⁹ Jørgensen, "Game Characters as Narrative Devices. A Comparative Analysis of Dragon Age: Origins and Mass Effect 2," 325-328.

⁸⁰ Noam Knoller, "Agency and the art of interactive digital storytelling," in *Interactive Storytelling: Third Joint Conference on Interactive Digital Storytelling, ICIDS 2010, November 1-3 UK Proceedings*, ed. Ruth Aylett, et al., 264-267. (Berlin: Springer, 2010).

⁸¹ Knoller, "Agency and the art of interactive digital storytelling," 267.

⁸² Alayna Cole, "Connecting player and character agency in videogames," *Text* 49 (2018). 11-12. <https://research.usc.edu.au/esploro/outputs/99450786702621>.

⁸³ Cole, "Connecting player and character agency in videogames," 11-12.

When we consider authorial intent, there is an imperative to understand traditionally literary deployments of perspective. Arjoranta has taken the literary devices of focalisation, granularity, and modes of narration, and applied them to games and their mechanics, to understand how these systems act semiotically, and what user affects they potentiate.⁸⁴ I intend to expand the possibilities of these ideas as ludonarrative devices, and further consider how they might tie into similar ideas around temporality and spatiality,⁸⁵ and embodiment⁸⁶ to create ludonarrative systems. Jørgensen and Isbister have also separately demonstrated how players have different experiences of narrative depending on the choice to deploy an avatar or actor.⁸⁷ These analyses of the potential afforded by avatars and actors provides us a lenses to consider the role various relational perspectives between player and player character (PC) have in developing ludonarrative. Veale approached affect through the lens of actor while considering how the player's perspective aligns with the PC.⁸⁸ In analysing *Gone Home* and the perspectives of the protagonist and the player navigating them Veale theorised how games can induce affect responses, and most notably a sense of responsibility over the virtual (characters, objects, places etc) known as affective materiality.⁸⁹ What remains to be explored is how designers can align not only player's perspectives and emotional journeys with PC's but also respective choices and actions through ludonarrative design.

When considering player perspectives, we need to consider the ways game systems develop affective journeys for players, and how they induce affective responses. This includes considerations of how affective responses create and develop a sense of fun and engagement, both shaping and guiding player experiences of games,⁹⁰ as well as

⁸⁴ Jonne Arjoranta. "Narrative Tools for Games: Focalization, Granularity, and the Mode of Narration in Games." *Games and Culture* 12, no.7-8 (2015): 713. <https://doi.org/10.1177/1555412015596271>.

⁸⁵ Wei, Bizzocchi and Calvert, "Time and Space in Digital Game Storytelling," 15-18.

⁸⁶ Isbister, Katherine, *How Games Move Us: Emotion by Design* (Cambridge: MIT Press, 2017).

⁸⁷ Isbister, *How Games Move Us: Emotion by Design*; Jørgensen, "Game Characters as Narrative Devices. A Comparative Analysis of Dragon Age: Origins and Mass Effect 2," 319-321.

⁸⁸ Kevin Veale, "Affect, Responsibility, and How Modes of Engagement Shape the Experience of Videogames," *Transactions of the Digital Games Research Association, 2015, Special Issue: The Inaugural DiGRA Australia conference 2*, no.1 (December 13, 2015): 129-163. <http://todigra.org/index.php/todigra/article/view/44>.

⁸⁹ Kevin Veale, "Gone Home, and the power of affective nostalgia," *International Journal of Heritage Studies* 23, no.7 (2016): 654-666. <https://doi.org/10.1080/13527258.2016.1262447>.

⁹⁰ Nicole Lazzaro, "Why we play: affect and the fun of games," in *Human Computer Interaction: Designing for Diverse Users and Domains*, ed. Andrew Dears, Julie A. Jacko, 725-747. (Boca Raton: CRC Press, 2009).

considerations of how games enable us to experience moments of affect in addition to embodied experiences.⁹¹

When we consider the value of perspectives arguments about the role of a narrator within games emerge. Roe and Mitchell examine how audio and visual elements can combine with interactive elements to develop an unconventional unreliable narrator through game systems.⁹² What is particularly interesting and relevant to a ludonarrative analysis is the theorisation of a non-existent narrator through the intersection of game systems, such as audio-visual, and interactivity.⁹³ While there have been many arguments over the role of a narrator in games, this consideration allows us to consider the game system as narrator and consider the narrative told by gameplay.

There is also a need to consider the extent to which a player can fully understand a game, as noted by Aarseth with the concept of ergodic literature⁹⁴ the scope of a text that involves agency or interaction exceeds what can be realistically grasped by any player. It is in this space that Vella finds the concept of the ludic sublime, wherein a player's road to mastery over a game, a total understanding of its system is always out of reach.⁹⁵ This can be further considered from the perspective of ludonarrative design, wherein the drive for the sublime (whether through game systems or knowledge and narrative systems) can be integrated into the narrative's, or gameplay's, respective approach to the sublime. While the counter argument exists that there is a balance between what Vella terms as, Mastery and Mystery,⁹⁶ this also provides implications for design for ludonarrative, as a method of unsettling that self-same balance to create meaning and continue to develop player drive, curiosity, and awe.

Finally, to leverage this theoretical framework, the thesis draws on the theory of 'close playing' for case study analysis. A modified approach to the 'close reading' method in literary studies, close playing was outlined for game studies by Bizzocchi and Tanenbaum.⁹⁷

⁹¹ Aubrey Anable, *Playing with Feelings: Video Games and Affect* (Minnesota: University of Minnesota Press, 2018).

⁹² Curie Roe and Alex Mitchell, "Is this Really Happening? Game Mechanics as Unreliable Narrator," in *DiGRA'19 - Proceedings of the 2019 DiGRA International Conference: Game, Play and the Emerging Ludo-mix*.

⁹³ Roe and Mitchell, "Is this Really Happening?" 12-14.

⁹⁴ Aarseth, *Cybertext: Perspectives on Ergodic Literature*.

⁹⁵ Vella, "No Mastery Without Mystery."

⁹⁶ Vella, "No Mastery Without Mystery."

⁹⁷ Jim Bizzocchi and Joshua Tanenbaum, "Well Read: Applying Close Reading Techniques to Gameplay," In *Well Played 3.0*, edited by David Davidson, 289-316. (ETC Press, 2011). <https://doi.org/10.1184/R1/6687050>.

They also explicitly analysed, and helped solidify, the migration of literary studies' close reading technique, into game studies as close playing.⁹⁸ This method is used to facilitate the close examination of the games to understand the multiple possible perspectives that are inherent within an ergodic text while reminding the researcher to remain cognisant of several factors; an awareness of a naïve perspective, a critical distance allowing for examination while remaining capable of being able to immerse oneself in the experience (as that is a part of the work that requires analysis), the multiple variations within the game leading to what Aarseth⁹⁹ has termed an ergodic text, varying player perspectives and skill that modulate the experience, and the ability to apply various appropriate analytical lenses to the game. The thesis' specific application of close playing of case studies, will be outlined further in Chapter 2 Methodology.

1.5 Summary

This literature review has sought to provide a succinct outline of the relevant history of game studies to contextualise the thinking that caused the field to arrive at the ludology vs narratology debate, as well as the current state of the discipline. In doing so, literature on ludonarrative was collated and presented here with identified gaps that indicate that a method for understanding and analysing ludonarrative is required. The investigation into broader areas of game studies has identified specific theories and frameworks that when considered together, provide the components for a ludonarrative analytical framework. Another applicable concept is that of close playing of games as texts.

⁹⁸ Bizzocchi, "Well Read: Applying Close Reading Techniques to Gameplay," 8-14.

⁹⁹ Aarseth, *Cybertext: Perspectives on Ergodic Literature*.

Chapter 2 Methodology

The thesis's methodology is comprised of four integrated approaches - the literature review; the iterative development and implementation of a ludonarrative analytical framework (LAF); close playing of case studies in relation to the LAF; and a ludonarrative scale designed and developed for use in industry and academia in aiding the ludonarrative design process, or in the analysis of existing ludonarrativity.

2.1 The literature review

The literature review examined the field, identifying key gaps in academic research into ludonarrativity. The review provides a chronology of and background to, the identified schism between past arguments of narratology versus ludology. The literature also helped identify the method of close playing of games case studies, derived from textual close reading. The close playing analyses demonstrate how the identified games take up and demonstrate best practice ludonarrativity and to what specific ends.

The literature reviewed provides a broad scope of game studies literature. It aims to understand the context of the field and gauge the level of academic investigation into ludonarrative while identifying facets of research that were most applicable to a ludonarrative analysis. A broad review of the field allows for the identification of a gap in the literature about the effectiveness of a game's ludonarrative. Specifically, where there is research about the potential of games as semiotic artefacts, the way audiences perceive possible ludonarrativity, and how designers might consider a closed loop design process when designing ludonarrativity, there is little investigation into how to understand ludonarrative in games or interpret its meaning. A broad review of the field identified specific theories that are central to understanding and interpreting ludonarrative. Aside from the literature specifically investigating narrative in games¹⁰⁰ the following theories

¹⁰⁰ Arjoranta, "Narrative Tools for Games: Focalization, Granularity, and the Mode of Narration in Games;" Bizzocchi, "Games and Narrative: An Analytical Framework;" Despain and Ash, *Designing for Ludonarrative Harmony*; Jørgensen, "Game Characters as Narrative Devices. A Comparative Analysis of Dragon Age: Origins and Mass Effect 2;" Koenitz, "Towards a Specific Theory of Interactive Digital Narrative;" Roth, Nuenen, and Koenitz, "Ludonarrative Hermeneutics: A Way Out and the Narrative Paradox."

were identified; temporality,¹⁰¹ spatiality,¹⁰² perspective (specifically the avatar/actor divide in conjunction with ideas derived from literature such as focalisation and granularity¹⁰³), affect theory (including theories of embodiment),¹⁰⁴ community development,¹⁰⁵ games as vehicles for political messaging and activism,¹⁰⁶ user interface,¹⁰⁷ the concept of the ludic sublime,¹⁰⁸ and player agency.¹⁰⁹ These aspects specific relationship to the LAF will be detailed below in table 1.

2.2 Ludonarrative Analytical Framework

It makes for best reading sense to outline the development of the LAF and the ludonarrative scale, even though they were iteratively devised with the conducting of the close playing method, including multiple playthroughs, multiple versions and testing of the case study games; this method is covered in 2.4.

The LAF breaks down the components of the game into the following categories:

Railroad/Sandbox; Character Driven/World Driven; Emergent/Embedded; Actor/Avatar; Affect/Cognitive. These categories are derived from an assemblage of the theories and frameworks in the literature review. The theories that generate each category are detailed in Table 1.

Railroad/Sandbox: Railroad is a term from gaming culture, specifically from TTRPGs (Tabletop Role Playing Games), that denotes a game that is ‘on rails.’ In other words, there is little scope for player agency beyond what is allowed within authorial intent. On the other hand, sandbox is term used to describe games that can be considered like a real sandbox, a

¹⁰¹ Aytemiz, et al., “Exploring How Changes in Games Systems Generate Meaning;” Juul, “Introduction to Game Time;” Wei, et al., “Time and Space in Digital Game Storytelling.”

¹⁰² Golding, “Putting the Player back in their Place: Spatial Analysis from Below;” Jenkins, “Game design as narrative architecture;” Wei, et al., “Time and Space in Digital Game Storytelling;” Zonaga, and Carter, “The role of Architecture in Constructing Gameworlds: Intertextual Allusions, Metaphorical Representations and Societal Ethics in *Dishonored*.”

¹⁰³ Arjoranta, “Narrative Tools for Games: Focalization, Granularity, and the Mode of Narration in Games;” Isbister, *How Games Move Us: Emotion by Design*; Jørgensen, “Game Characters as Narrative Devices. A Comparative Analysis of Dragon Age: Origins and Mass Effect 2;” Roe, and Mitchell, “Is this Really Happening? Game Mechanics as Unreliable Narrator;” Veale, “*Gone Home*, and the power of affective nostalgia.”

¹⁰⁴ Isbister, *How Games Move Us: Emotion by Design*.

¹⁰⁵ Schniz, “Sceptical Hunter(s): A Critical Approach to the Cryptic Ludonarrative of *Bloodborne* and Its Player Community.”

¹⁰⁶ Murphy, “Hybrid Moments: Using Ludonarrative Dissonance for Political Critique;” Schleiner, “The broken toy tactic: Clockwork worlds and activist games.”

¹⁰⁷ Bizzocchi, et al., “Games, narrative and the design of interface.”

¹⁰⁸ Vella, “No Mastery Without Mystery.”

¹⁰⁹ Cole, “Connecting player and character agency in videogames;” Johnson, “Building the character: Imagined consciousness in roleplaying videogames;” Knoller, “Agency and the art of interactive digital storytelling.”

blank play space where the players determine their own form and style of play and engagement. Sandbox style games are commonly open world games. This is most closely aligned with the traditional divide between *paida* and *ludus*.

Character Driven/ World Driven: Character driven is exemplified by a game that focuses on characters, whether that be in terms of gameplay or in terms of narrative. This can take the form of gameplay being focused on building and developing a Player Character (PC), or the narrative of the game is centred around the PC or Non-Player Characters (NPCs). World driven, instead, focuses on the world both narratively and in terms of gameplay. Examples include gameplay that is dedicated to progressing a settlement and expanding a civilisation, or, narratively, a game where the narrative is driven by unearthing the game world's history, or an impending calamity that must be stopped.

Emergent/ Embedded: Emergent narrative is defined by narrative that evolves and transforms through player interaction and engagement. On the other hand, embedded narrative is set and largely immutable within the game space. Essentially, a narrative with authorial control and intent. While this category is largely focused on the narrative side, there is still a relevant ludic view. That is, from an embedded viewpoint there is a set and determined way in which gameplay is unfolded, specifically in terms of progression i.e. x upgrade follows y upgrade, or there is no more than a single way to succeed a given encounter. From an emergent standpoint, questions arise including 'do players determine their own style of gameplay?', 'do they construct their own rules and terms of engagement?', 'are there multiple ways of accomplishing any given task or challenge?'

Actor/Avatar: The actor avatar divide is one that is typically defined by the qualities of the PC. Namely, whether they have a unique voice and personality separate to the player or if they have no presence beyond the actions and choices of the player.¹¹⁰ From a narrative standpoint it becomes a question of whether the main storytelling is being mediated through an actor. That is, is the player engaging with the narrative through an avatar or are they watching the narrative as it engages an actor. In ludic terms, questions arise as to how the gameplay is structured to engage the player. For example, whether a first or third

¹¹⁰ Isbister, *How Games Move Us: Emotion by Design*; Jørgensen, "Game Characters as Narrative Devices. A Comparative Analysis of *Dragon Age: Origins* and *Mass Effect 2*."

person perspective is the key engagement strategy; how the gameplay emotionally or logically frames the player in relation to the PC.

Affect/Cognitive: Affects are the pre-conscious, autonomic, and neurological responses we have to external and internal stimulus information. For Stern, affects arise from all-body responses, they are precursors to feeling, emotion (the naming of feelings), actions and cognition.¹¹¹ We become entrained to pick up and feel those familiar affect waves in media and games. Certain affects such as those generated by dynamic, high-speed movement, emerge from adrenaline responses into emotions in the excitement, thrilled, or terrified register (fight, flight or freeze).¹¹² Games can also be designed for strong, continuous affects in other participant registers such as relaxing in low stimulus environments. For the purposes of this research, participant registers with high affective potential that typically generate emotional and action/inaction responses, are compared to sequences that predominantly engage users through cognition, for example by engaging logic and reducing high-affect elements such as movement, sound, etc. For example, the primary goal of a game might be efficiency and optimisation, expansion of a particular kind, or even solving puzzles. Core to this Affect/Cognitive category is how the story is constructed to develop affective, embodied ties and connections to the player, to foster an emotional investment, and the question of how the game uses its ludic elements to create an affective, embodied response (such as twitch mechanism) to storytelling elements.

While that represents an overview and definition of the categories it is important to note that while these categories are set out as opposites, they are not mutually exclusive. Across a game, diverse strategies might be used. For example, a game could have sections of gameplay that are strongly railroaded in the initial sections of the game, before transforming into an open world model that leans toward the sandbox side of the scale. At a smaller scale, on one level there might be a choreography of player registers, from the affective (scared) to the cognitive (solve a puzzle to find an exit).

¹¹¹ Daniel Stern, *Forms of Vitality: Exploring dynamic experience in psychology, the arts, psychotherapy, and development*, (New York; Oxford University Press, 2010).

¹¹² Stern, *Forms of Vitality: Exploring dynamic experience in psychology, the arts, psychotherapy, and development*.

Ludonarrative Category	Provocations for classification/Scale	Relevant frameworks and theories
Railroad/Sandbox	<p>Is there an ordered set of objectives or goals?</p> <p>What is the player experience and player journey?</p> <p>How much variation would there be between different playthroughs and playstyles?</p> <p>What kind of agency does the player have?</p> <p>Is there a structured temporality?</p> <p>Are levels designed to allow for player choice?</p>	<p>Cole, 2018; Despain and Ash, 2016; Knoller, 2010; Wei, Bizzocchi and Calvert, 2011.</p>
Character Driven/ World Driven	<p>What kind of perspective is the player provided? Does it change at any point? If so, what does the change indicate?</p> <p>Where is the narrative focus?</p> <p>How is narrative/gameplay information delivered to the player?</p> <p>Visuals</p> <p>Are there multiple streams of temporality?</p> <p>Micronarrative</p>	<p>Arjoranta, 2015; Aytemiz, Junius, and Altice, 2019; Bizzocchi, 2007; Bizzocchi, Lin and Tanenbaum, 2011; Despain and Ash, 2016; Golding, 2013; Jenkins, 2004; Jørgensen, 2010; Wei, Bizzocchi and Calvert, 2011; Zonaga and Carter, 2019.</p>
Emergent/ Embedded	<p>To what degree does the game have an authored narrative/ an authored play experience?</p> <p>How much space is there for player freedom and expression?</p> <p>Focalisation granularity etc.</p> <p>Agency</p>	<p>Bizzocchi, Lin and Tanenbaum, 2011; Despain and Ash, 2016; Isbister, 2017; Jenkins, 2004; Knoller, 2010; Koenitz, 2015; Roth, Nuenen and Koenitz, 2018; Roe and Mitchell, 2019; Schleiner, 2019; Schniz, 2016; Seraphine, 2016; Wei and Durango, 2019.</p>
Actor/Avatar	<p>Where is the player's perspective?</p> <p>How do the ludic systems interact with perspective?</p> <p>Are there diegetic elements to the game?</p> <p>Does the PC have a unique voice? How do they interact with NPCs?</p>	<p>Arjoranta, 2015; Cole, 2018; Isbister, 2017; Johnson, 2018; Veale, 2016.</p>

Affect/Cognitive	<p>Do the ludic and physical elements of the game develop an embodied sense of the emotions present in the game?</p> <p>Is the player invested in the emotions present in the game or the game systems?</p> <p>Are there particular moments of emotional or affective responses/triggers in the narrative or within the embodied ludic interface?</p>	<p>Anabel, 2018; Despain and Ash, 2016; Isbister, 2017; Lazzaro, 2009; Veale, 2016.</p>
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Table 1: Ludonarrative Analytical Framework – the table shows the provocations that can be deployed to determine the extent of each category, and the categories’ relevant frameworks and theories.

2.3 The Ludonarrative Scale

The categories are visualised on the ludonarrative scale, which is designed to clearly, and simply, capture a game’s relative ludonarrative components and identify where and how harmony, or dissonance, is occurring. The scale is designed to be easy to use in industry to map and examine the ludonarrative being designed. That is, throughout the stages of game design current and planned ludic and narrative elements of the game can be mapped onto the ludonarrative scale to determine if the desired quality of ludonarrative is being achieved, and if not where the changes can be implemented to address the disparity. This is in part a response to the concept of ludonarrative (ir)relevance postulated as the result of design teams without cross-communication,¹¹³ or differing design life cycles, where the ludonarrative scale could help maintain consistency in design across teams. Due to the experiential nature of games, a form of collaboration between player and designer,¹¹⁴ there is a level of subjectivity to the scaling and analysis of each given criteria.

To reflect this the scales are designed in a similar fashion to a Likert scale (figure 1). Each side of the scale is given to each respective half of the category, in figure 1 the railroad/sandbox category for Hollow Knight is depicted. Values are determined for both sides of the category, in the case of figure 1 a value is provided for both the railroad and sandbox category of HK. The classification of each category is separated into two sections:

¹¹³ Weimin, *A Multimodal Discourse Analysis of Video Games: A Ludonarrative Model*, 268.

¹¹⁴ Cole, “Connecting player and character agency in videogames,” 11-13.

narrative and ludic, with each provided their own scale. In each is depicted the relative quality of that categories given narrative or ludic engagement. The criteria for determining the quality of said engagement is drawn from relevant frameworks and theories as depicted in table 1.

By creating scales depicting the narrative and ludic quality of game elements that can develop ludonarrativity we can compare the relative narrative and ludic aspect of any given category. Through comparative analysis we can identify similarities or disparities between the narrative and ludic form. These similarities or disparities indicate that there is some level of ludonarrative harmony or dissonance occurring. It also indicates the element where we will find the harmony or dissonance. As such, we can begin to question what meaning is present behind the ludonarrative occurring, its quality, and intent. An important limitation to note is that this scale is representative of the entire game. While it could be used for specific moments in a game, such an exercise would be applicable to *Brothers* for example, it has not been used as such in this thesis.

Ludic - Railroad/Sandbox



Narrative - Railroad/Sandbox

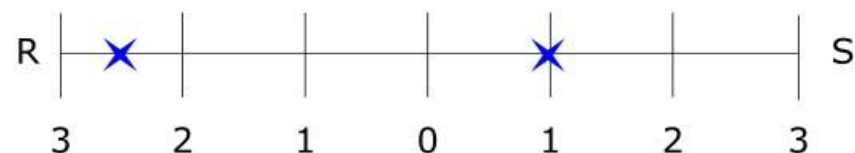


Figure 1: The Ludic and Narrative scales for Hollow Knight's Railroad/Sandbox category wherein a value has been assigned for the ludic railroad and ludic sandbox quality of Hollow Knight in the ludic scale, and the narrative railroad and narrative sandbox quality of Hollow Knight in the narrative scale.

The next step of the method is to combine each of the scales (Railroad/Sandbox; Character Driven/World Driven; Emergent/Embedded; Actor/Avatar; Affect/Cognitive) in sequence in the blank scale presented in figure 2 below. This ludonarrative scale is a combined visual representation of each of the ludonarrative categories explained above. The centre of the diagram represents the null value from the scales with each extreme representing the respective category's strong selection. By overlaying both the narrative and ludic scales a visual depiction of the synthesis between the analysed elements can be observed for the entire game.

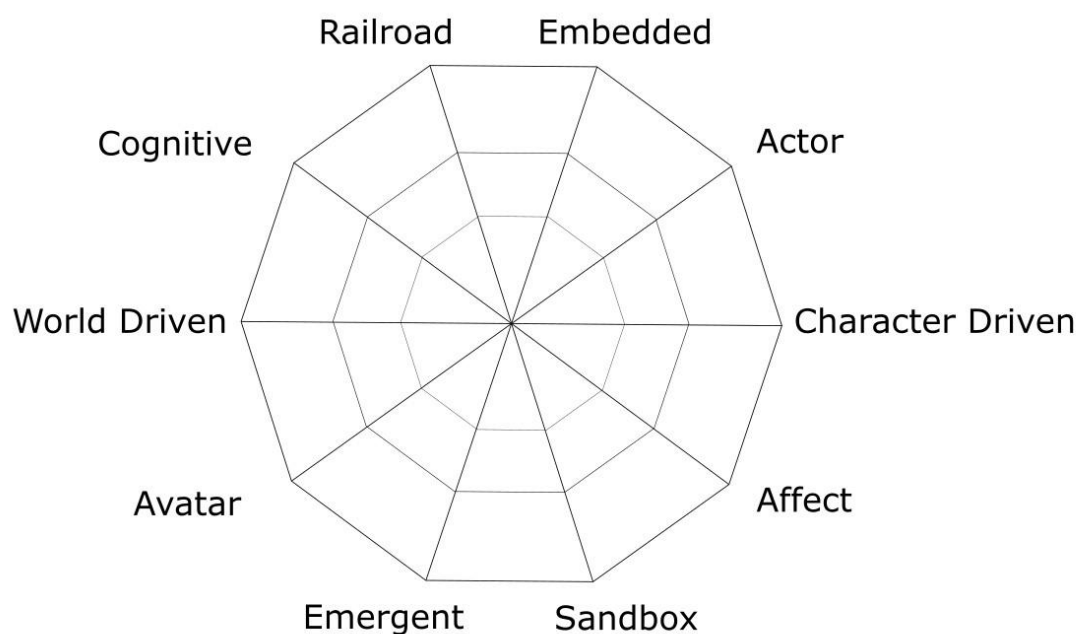


Figure 2: The blank version of the ludonarrative scale. Each of the categories are visually depicted together so as to allow for the visual depiction of the perceived ludonarrativity of a game.

Both the LAF, its associated categories, the frameworks deployed, and the ludonarrative scale saw iterative development with the repeated playthroughs of the case studies. Implementing and testing a version of the LAF and scale against the games in conjunction with reflective examination led to addition, removal, and melding of categories and their associated criteria.

The LAF has been designed with the intention of use in further academic studies, for discerning ludonarrativity within games, and for industry professionals, to be used as a design tool throughout the development process for mapping potential ludonarrativity.

2.4 Close Playing

‘Close playing’ - a game studies adapted version of close reading - is my chosen method for conducting the observation and analysis of the case studies. While variations of close playing are broadly taken up within the discipline, this thesis will be deploying Bizzocchi’s method¹¹⁵ in which the approach is to apply analytical lenses to identify the provocations highlighted in the LAF. This process was designed to allow a fuller and multi-perspective understanding of the games to develop. This method also considers potential audience perspectives, by allowing me to inhabit multiple methods of play, to untangle the various registers of ludonarrative. That is, it can account for players approaching the game with varying levels of skill and knowledge, having different experiences or ‘playthroughs’ that provide a different ludonarrative experience for different approaches. This allows the research to remain attenuated to the ergodic nature of the text and remain cognizant of the multitudes that all equally comprise the singular.

The method of close playing has been deployed in a variety of studies including analyses of *Mass Effect 2*,¹¹⁶ *Dragon Age: Origin*,¹¹⁷ *Journey*,¹¹⁸ *Assassin’s Creed*,¹¹⁹ and *Bioshock*.¹²⁰

Each game underwent a playthrough, which was an initial unguided and uniformed playthrough. To ensure I remained attuned to the initial experience of a novice player I refrained from making notes and observations until I documented the experience at the end of each process. Specifically, the moments and experiences that induced strong affective responses, particular moments of gameplay that stood out for any reason, or any narrative moments that had captured my attention and remained after a play session. Initial playthroughs were recorded so that I could review initial experiences later with a more experienced perspective. The recordings were done while playing through Open Broadcasting Software (OBS). Audio/commentary was not recorded because I did not feel confident in my ability to immerse myself into an experience while narrating my thoughts

¹¹⁵ Bizzocchi and Tanenbaum, “Well Read: Applying Close Reading Techniques to Gameplay.”

¹¹⁶ Bizzocchi, “*Mass Effect 2*: A Case Study in the Design of Game Narrative;” Jørgensen, “Game Characters as Narrative Devices. A Comparative Analysis of *Dragon Age: Origins* and *Mass Effect 2*.”

¹¹⁷ Jørgensen, “Game Characters as Narrative Devices. A Comparative Analysis of *Dragon Age: Origins* and *Mass Effect 2*.”

¹¹⁸ Pynenburg, *Games Worth a Thousand Words: Critical Approaches and Ludonarrative Harmony in Interactive Narrative*.

¹¹⁹ Wei, et al., “Time and Space in Digital Game Storytelling.”

¹²⁰ Reblin, *To Build the Impossible: Narratology and Ludology in the BioShock Trilogy*.

and experiences without that narration disrupting the immersion. While the initial notetaking after play sessions generated the required material to later analyse a novice's experience in conjunction with the recorded material, in future studies recorded audio could provide a clearer insight for later reflections. Additional playthroughs were conducted after initial playthroughs, to facilitate two important objectives. Firstly, to continue to build knowledge and experience with the game. This included exploring previously unexplored areas, confronting new challenges, and, most importantly, paying careful attention to the interaction between gameplay and narrative. This involved notetaking comprehensively in conjunction with taking screenshots while experimenting with, and considering, the gameplay mechanics and narrative at any given time. Iterative playthroughs allowed me to inhabit different approaches to playing; from slower and more careful play, to completionist playthroughs, to the best attempts I could make at speedrunning the games. These subsequent playthroughs were not recorded and instead saw notation occurring during play.

During these playthroughs I also engaged with the broad repository of content developed by the games' communities to further enhance my knowledge about the games, to discover rare and difficult to find pieces of knowledge about the games which, in Team Cherry's words, was designed for the players engaged enough to find them.¹²¹ Additionally, this allowed for a comparison of the ethos that the games establish with the ethos of the communities that have spawned in and around them in line with Schniz's theorisation.¹²²

2.5 Case Study Selection

This thesis analyses case studies of three independent game to understand and illuminate ludonarrative as it occurs within each game, how it is developed through the various systems available to the game, and how ludonarrative in turn impacts the game as vehicle

¹²¹ Game Maker's Toolkit. "The World Design of Hollow Knight | Boss Keys." YouTube Video, 22:19. "Just having it there, out of sight from most players makes the world more truly alive. Much of it exists to convey a sense that there's always something else waiting in the un-explored recesses of the world – fearsome enemies, strange characters, new areas, powerful items etc. And [it] creates a very special experience for those few that do make the discovery."

¹²² Schniz, "Sceptical Hunter(s): A Critical Approach to the Cryptic Ludonarrative of *Bloodborne* and Its Player Community."

for meaning. These case studies allowed for exploration of theorisation, and as the subjects of games analysis and close playing, for the direct testing of the LAF¹²³.

The case studies are *Brothers: A Tale of Two Sons (Brothers)*, *Celeste*, and *Hollow Knight*. These were chosen on the strength of their ludonarrativity; their presentation of diverse manifestations of ludonarrative; and their range of genre.¹²⁴ Furthermore, AAA titles from large developers were purposefully avoided, instead the focus was on indie games. Juul investigates the ontological nature and meaning of labelling a game as indie, the complexities, multiplicities, and sometimes conflicting ideologies and rationalities behind independent game development.¹²⁵ Within the scope of this thesis the assertion of a game's independent status was assumed from the context of its development in concert with the broader community's attribution of the title indie to the games.

Case study selection was an important aspect of the process. Beyond the primary considerations outlined above, there were additional benefits in selecting these three games. All the games can be expected to have initial playthroughs completed within 30 to 40 hours, with subsequent playthroughs required for close playing and data collection taking less time due to greater experience (*Brothers* is the exception in that it can be reasonably completed under five hours). Both *Celeste* and *Hollow Knight* have dedicated communities with subdivisions dedicated to specific aspects, such as fanart and speedrunning. This means there is a large amount of knowledge about the specific details in the games that helped develop a deeper understanding their systems. The popularity of all three games also meant that designer interviews were readily available online and could provide insights into aspects of the design surrounding the ludonarrative in the games. Finally, all the games are available across a variety of platforms. This in conjunction with their popularity, single player nature, and their success relying on quality rather than a

¹²³ The other method considered was exploring concepts individually by examining them individually and using multiple examples to demonstrate the concept. This method was determined to be more effective at examining specific ideas in concert, for example to examine a collection of ludonarrative metaphors by developing a taxonomy of what a ludonarrative metaphor is, providing exemplars and counter points, and then theorising what makes them occur and what their potential is within the context of game design before moving on to the next concept.

¹²⁴ *Journey* was also a case study until July of 2022, halfway through the research year, due to an overextended research scope. *Journey* was cut as close playing and reflection identified *Journey* to have the least novel and unique ludonarrative aspects to contribute to the thesis. *Journey* remains an interesting intersection of individual experience through the medium of games and certainly warrants examination in further research.

¹²⁵ Juul, Jesper, *Handmade Pixels: Independent Video Games and the Quest for Authenticity* (Cambridge, Massachusetts: MIT Press, 2019): 57-62, 90-94.

temporary zeitgeist suggests these games will remain unique and valuable play experiences regardless of market context, rendering them ‘classics’ that should remain accessible for the foreseeable future. Such concerns were born out of problems arising with the disappearance of older games and their inaccessibility.¹²⁶

Initially, numerous interesting games were considered based on the strength of their story telling, or a particularly innovative set of gameplay mechanics (such as in *Baba is You*). Others games considered included *Braid*, *Firewatch*, *Life is Strange*, *Murdered Souls Suspect*, *Ori and the Blind Forest* and its sequel *Ori and the Will of the Wisps*, ‘*Papers, Please*,’ *Papa & Yo*, *Undertale*, and *A Way Out*.

Some games launched during the thesis writing also warranted consideration, one of particular interest was *The Forgotten City*, released 28 July 2021. An interesting game developed by Modern Storyteller, it exemplifies ludonarrative structures around a concept and deploys a variety of genre styles but also the game was initially created as a mod¹²⁷ of the same name for *The Elder Scrolls V: Skyrim*, which I had the opportunity to play in 2018. Ultimately, it was determined to be too late within the development of the thesis for such a significant change.

Additional games were considered, including as being an exemplar of excellent narrative and excellent gameplay but lacking any synthesis resulting in ludonarrative harmony, instead being exemplars of ludonarrative (ir)relevance¹²⁸, or simply being too large for the approach proposed within a single year. *Final Fantasy XIV (FFXIV)* is an apt exemplar, as an MMORPG¹²⁹ the game is very long – comprising a main questline and (at the time of writing) three full expansions – with completion of those core components taking anywhere between ~200 – 500 hours, let alone all the potential side content, which, arguably, is a significant component of the MMO part of the experience. Further academic considerations significantly hampered FFXIV, being its longevity, stability, and accessibility. That is, due to its live service nature the game often undergoes transformations and version evolution,

¹²⁶ Pinchbeck, Dan, David Anderson, Janet Delve, Getaneh Otemu, Antonio Ciuffreda. “Emulation as a strategy for the preservation of games: the KEEP project.” In *DiGRA '09 - Proceedings of the 2009 DiGRA International Conference: Breaking New Ground: Innovation in Games, Play, Practice and Theory*. (2009): 4-5

¹²⁷ Or modification – which is a community developed content for games that is generally made freely available to the modding community.

¹²⁸ Weimin, *A Multimodal Discourse Analysis of Video Games: A Ludonarrative Model*, 268.

¹²⁹ Massive Multiplayer Online Role-Playing Game,

requiring excessive explanation. Furthermore, because it is a live service game eventually the servers will be taken down and the game will no longer be playable. While there certainly is an interesting gap to be explored around what MMORPGs can do with narrative, and where they are lacking with the context of ludonarrative, such an investigation requires a dedicated focus that was not the scope of this thesis.

2.6 Summary

In summary, the thesis methodology integrates literature review, a new ludonarrative framework and scale for analysis and design with close playing of case studies using the framework and scale.

It is useful here to mention other considered methodologies. The initial research design included interviews with the designers and key creative credit holders of each case study. The interviewees were identified, questions blocked out, schedules developed, and ethics application submitted. However, with the second COVID 19 lockdown in Sydney (June to October 2021), Australia, and a frank reassessment of the scope of this thesis, the interviews were not conducted. However, future studies could investigate designer understanding and processes for ludonarrative design. Additionally, focus groups were considered to scope player responses to ludonarrative design, much like Weimin's approach,¹³⁰ but ultimately the decision was made to focus on textual analysis through close playing. Player interviews in conjunction with designer interviews could reveal interesting insights and conflicts in future research.

¹³⁰ Weimin, *A Multimodal Discourse Analysis of Video Games: A Ludonarrative Model*.

Chapter 3 Case Studies

In the last chapter, the methods of the ludonarrative analytic framework (LAF), ludonarrative scale and close playing and the choice of case studies was explained. In this chapter, the LAF is applied to the case studies of *Hollow Knight*, *Celeste*, and *Brothers: A Tale of Two Sons*. Each of the case studies is structured as follows. Initial product details - developer, publisher, location, release years and platforms, and any potential DLC (Downloadable content). Then a brief overview of the style of game and narrative are provided. There is some description throughout each case study to provide the necessary context to understand the analysis and interpretation, without having played the game. Screenshots provided as figures have helped shortcut the processes and are used to ease the descriptive burden on the text.

Each case study analyses three notable instances of ludonarrative, or recurring themes of ludonarrative, through the theories and frameworks that constitute the LAF. To conclude each case study's analyses will be tied into a summary of the game's deployment of ludonarrative, which will be used to inform values given for each category of the LAF before being presented in visual form through the ludonarrative scale.

PC = Player Character

NPC = Non-Player Character

3.1 Case Study #1 – Hollow Knight (HK)

Developer: Team Cherry, Adelaide, SA

Publisher: Team Cherry, Adelaide, SA

Year/Platform: 2017 PC; 2018 Nintendo Switch, PlayStation 4, Xbox One

Team Cherry is a small independent studio in Adelaide, Australia. Having initially released Hollow Knight (HK) on Windows, and subsequently on other platforms. Team Cherry then released several DLC,¹³¹ for free and accessible to anyone who had purchased the game.¹³²

Hollow Knight is a game about the PC ‘the knight’ who has returned to the ruined kingdom of Hollownest, a formerly advanced bug kingdom whose citizens have been reduced to mindless bugs consumed by an infection known simply as ‘the light.’ HK is a metroidvania¹³³ in a retro aesthetic style (figure 3), well known for its challenging content, interesting world-building, and speedrunning community.

For this thesis, the game was accessed and played through the Steam client on Windows.

¹³¹ There is an interesting discussion to be had about at what point we cease to consider the additions of content to a game as necessary for analysis, at what point does their contribution add less value from a thematic, analytic standpoint.

¹³² In *Hollow Knight*, the additional content is interwoven well enough that for the purposes of this thesis, so there is no distinction made between the sets.

¹³³ Metroidvania is a portmanteau of two classic video game series Metroid and Castlevania. As a sub-genre of adventure-action games, metroidvania borrow tropes and ideas from both of those series. What typically defines a metroidvania is that it is a 2D platformer (gameplay that involves navigating movement-based puzzles), with combat (gameplay that involves defeating an enemy using various abilities) and that contains an upgrade or progression system that is dispersed throughout the gameworld. These upgrades are required to access previously inaccessible areas and progress the game. Metroidvania's are also traditionally quite difficult and challenging.



Figure 3 The first NPC the player will encounter in the hub town of Dirtmouth. Hollow Knight's charming aesthetic hides many of its serious themes the player will encounter.

Hollow Knight exemplifies successful ludonarrative harmony achieved through considered conception and design, with careful integration of an atmospheric gameworld and genre-informed narrative, and player agency in narrative engagement and difficulty.

We'll examine HK through three lenses. Firstly, the gameplay exploration of the gameworld functions as the key narrative drive and narrative mechanism. Secondly, specific gameplay mechanics act as vehicles of narrative information. Thirdly, the synthesis of theme, world setting, and narratives are informing and being informed by the genre of the game as a metroidvania, with a key characteristic being the role of difficulty in the narrative resolutions afforded by HK.

First HK demonstrates a strong realisation of potential ludic aspects in the Affect/Cognitive and Emergent/Embedded categories of the LAF. As the stressed player struggles to logically navigate a maze-like system the player is afforded an affective investment into the exploration system of the game, as will be detailed below in discussing the map and navigation system.

In HK, the design of the gameworld exploration serves one of the central ludonarrative mechanics. To explain, HK comprises into 15 sections, or biomes, identified by their specific aesthetic, inhabitants, music and self-contained narratives.

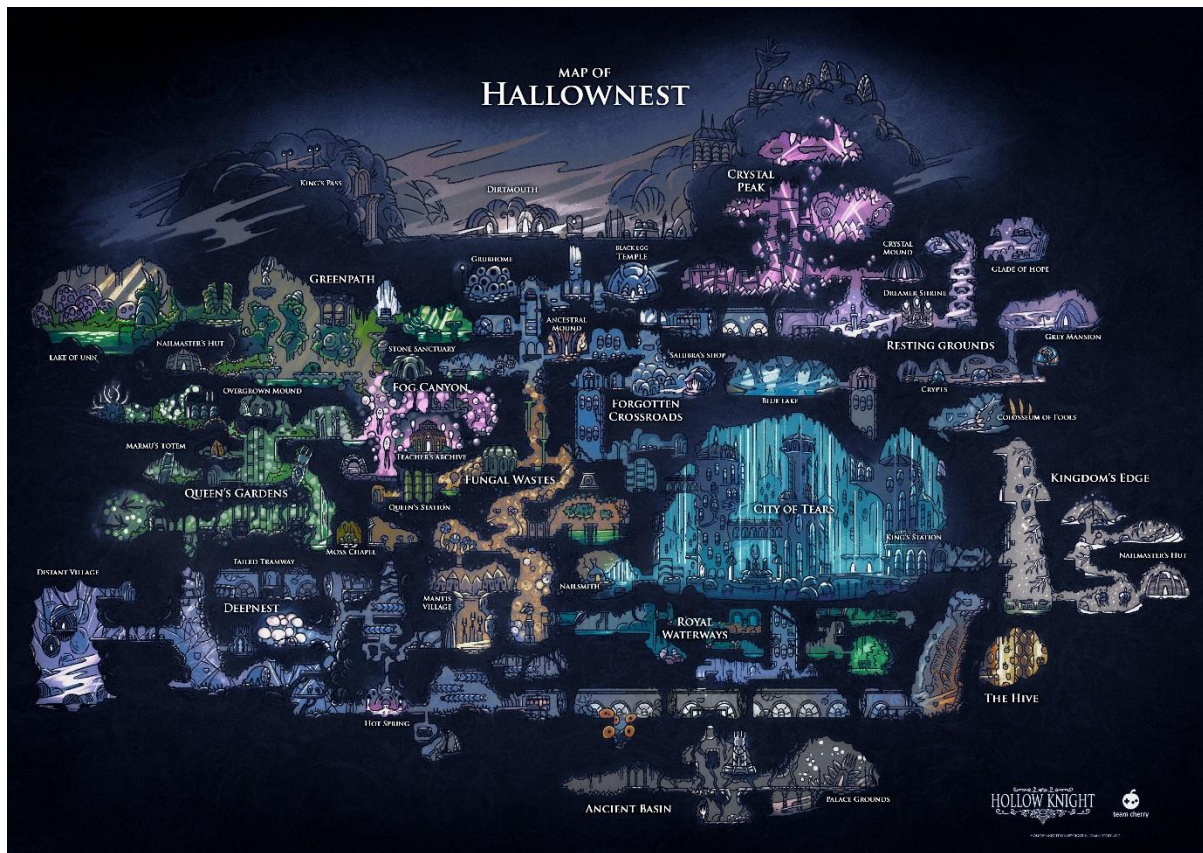


Figure 4: This 'world map' depicts the 15 biomes of Hollow Knight, each with their own distinct aesthetic.

Upon entering each biome, the player is left to navigate without a map, forcing them to explore the area in search of a cartographer who will sell his incomplete biome map to the player. To then complete the map, the player must visit the rest of the rooms in the biome and find and rest at a bench where the PC will draw the visited locations onto the map. The bench is a checkpoint system, where the PC sits at a bench in a set safe location, regains all their health, can manage the items they have equipped, and will respawn at if they die.

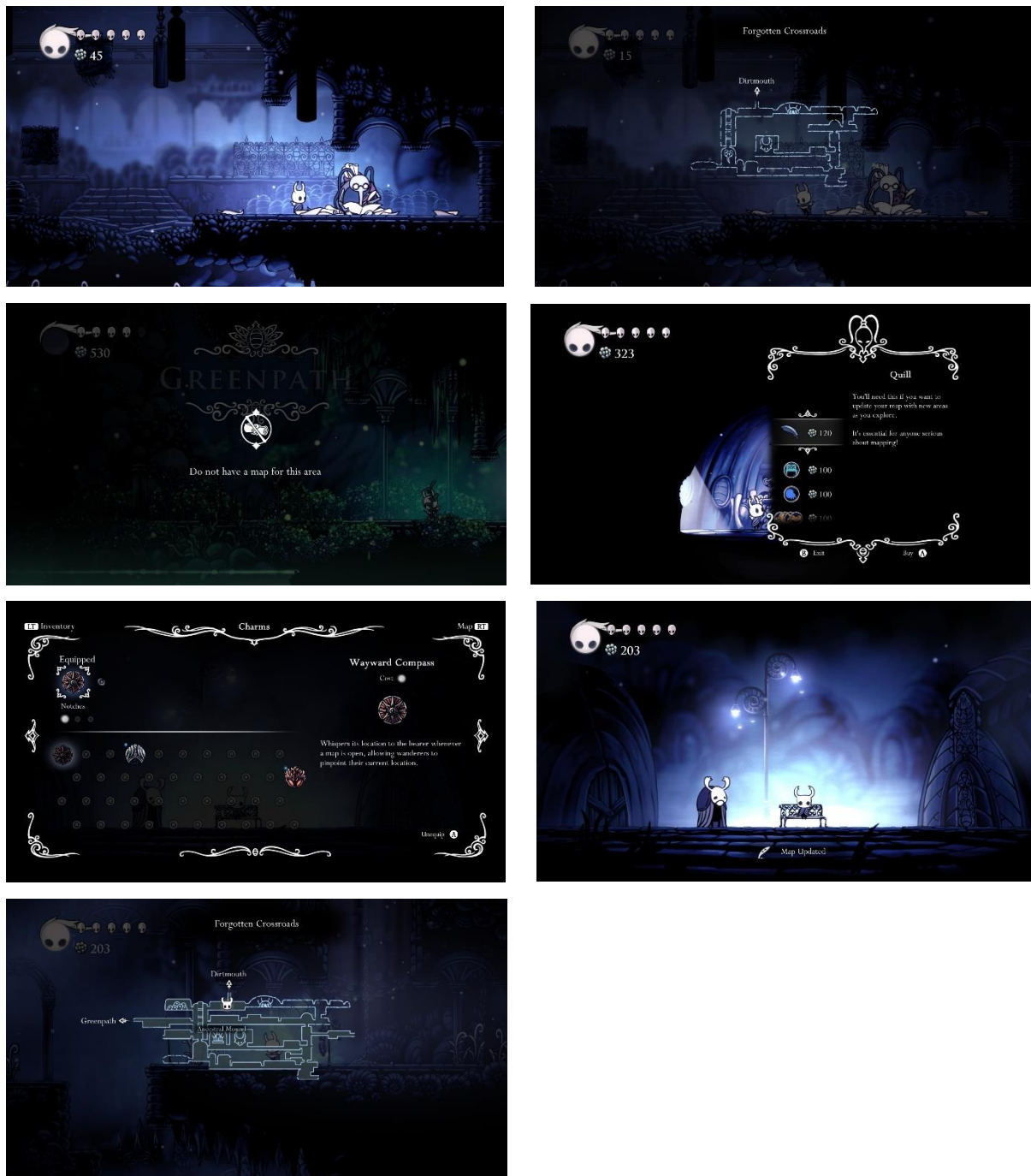


Figure 5 : (1st Left) Encountering the cartographer in the world; (1st Right) the incomplete map sold by the cartographer; (2nd Right) Trying to pull up the map in a new area without having bought the map shows this interface; (2nd Right); the cartographer's shop in Dirtmouth where you can buy the quill and compass; (3rd Left) The compass shown equipped in the equipment screen; (3rd Right) when resting at a bench with an incomplete map and the quill the Knight will fill in the areas the players has visited depicted by the icon at the bottom of the screen "Map Updated" with accompanying scribbling sounds; (4th left) The map with new areas drawn in as well as an icon pinpointing where the knight is thanks to the compass being equipped.

Additional gameplay components of the map system include the purchase of requisite items in-game; the quill, needed to fill in the incomplete map, and the compass, an equipable item that uses one of the PC's equipment slots and allows the player to see their location on the map (figure 5). Notably the game doesn't pause when the PC is checking the map, it is

pulled up as a semi-transparent map overlay on the screen, acting as a diegetic user interface. In-game, this user interface is intuitive and simple. Enemies can still attack, and the PC can still move, although at a reduced rate, akin to someone attempting to walk and read at the same time.

This navigation gameplay is one element that develops a strong harmonious ludonarrative system. The absence of a map on entering each biome initially creates a sense of being lost, overwhelmed, and intimidated. The stakes are high - for example, one of the main mechanics of the game is that upon death, the PC leaves behind a non-player character (NPC) called a shade (figure 6) and respawns at the last bench at which they rested. When the PC dies, their SOUL vessel, which acts as a resource to cast spells, is broken and only holds 2/3 of the regular amount of SOUL (figure 7).



Figure 6: The shadowy NPC on the left is shade left behind on death. Will attack the player gets closer enough

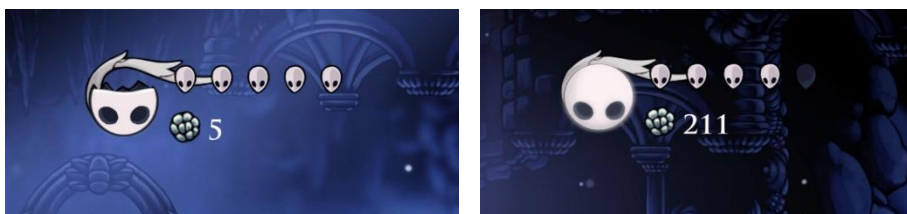


Figure 7: (Left) The broken soul vessel on the left which only holds 2/3 of the full capacity; (Right) The full soul vessel.

Additionally, all the player's currency is dropped and held by the shade. To restore the broken SOUL vessel, and regain their currency, the player must return to the shade and defeat it. If the player dies on their way back to the shade, the shade moves to the most recent point of death, and all the currency it was holding is irrevocably lost. So, upon entering and exploring a new biome a player is likely to die, either due to newer and tougher enemies, or failing new platforming challenges. If they die without having found and purchased the map for that biome, the player must retrace their steps through a maze-like system of rooms by memory alone. This creates two levels of stress, the first, not to die in the first place, the second, to try and find the way back without a map. This risk system is one of the ways the game affords 'stress affects' and enhances the player's emotional investment in cogent navigation. Feelings of risk, fear, and uncertainty emerge from the atmosphere of the game, and subtly reinforce the atmosphere of the world through which the PC traverses. Here there are demonstrations of "behaviour mimicking"¹³⁴ wherein the player, engaged in the user experience and interface, emulates the actions of the PC, lost underground in the dark and trying to navigate without a map. The design and implementation of this lost, risky, and scary user experience and interface entrains the player's perceptions and goals with the in-game experience of the PC.

The 'no map' gameplay navigation also engenders ludonarrative harmony by forcing stressed players to self-navigate as they arrive in each Biome without a map. This ensures players develop a strong mental map of each location. Unique points of interest, or an inaccessible area, become embedded in the player's memory as a point of potential return, likely with the relevant upgrade required to access it. Thus, the game is designed to build the player's capacity to navigate without the map, a central skill required in speedrunning, one of the alternate ways of playing HK. While speedrunning is often a different way of playing a game, the designers of HK leveraged the popular tradition of speedrunning in castlevanias. They specifically designed HK to be speedrun friendly, even including achievements for completing the game under ten hours, under five hours, with an additional achievement for completing 100% of the game in twenty hours.¹³⁵ By forcing the players to explore *without* a map for at least some of the time, the designers have

¹³⁴ Bizzocchi, et al., "Games, narrative and the design of interface," 272-274.

¹³⁵ The current world record for a HK speedrun is 32 minutes and 16 seconds (at the time of writing)
<https://www.speedrun.com/hollowknight>

intentionally created a situation wherein the player gets a sense of exploring an unexplored ruined civilisation while, as noted in an interview,¹³⁶ not becoming overly frustrated.

Through this navigational gameplay, HK encourages engaged, proactive exploration of the game world, even while the first task on a player's agenda in a new biome is to find the cartographer and purchase the map. By limiting access to the map, the game encourages and helps the player develop the ability to explore, to build a mental map endowed with value, and to proactively search and represents the ludic half of this analysis of navigation system.

The Design of HK echoes what Golding described as thinking of game architecture and experience from the street level rather than an arial view.¹³⁷ That is, the design of the system pays service to the particulars of living and being in the gameworld, and how it will feel for the player, that is, the user experience. This can be felt in the intense affective drive to and consequent relief in, locating the cartographer or a new bench at which to complete the map.

HK also demonstrates strong narrative and ludic aspects of the Agency, Embedded and World Driven category of the LAF by centring the game's narrative on the history of the gameworld and using the gameplay of exploration and discovery as driving agential factors in engaging with that narrative.

This navigational gameplay system is important because exploration is one of two primary objectives of the game; and the ludic mechanism of the map system is the player's primary way of understanding and engaging that exploration. Exploration is the method by which players find new bosses to defeat, attain new upgrades, and how they progress, understand, and engage with the narrative. In HK the narrative is centred on discovering what happened to the world of Hollownest, as opposed to being centred on the PC. In a sense, the ludonarrativity of HK is in the gameplay of the map exploration. That is, the actual narrative and gameplay of the game are tied up in the same idea, discovering the geography (game

¹³⁶David Milner, "The Making of Hollow Knight," *GameInformer.com*, October 15, 2018. <https://www.gameinformer.com/2018/10/16/the-making-of-hollow-knight>.

¹³⁷ Golding, "Putting the Player back in their Place: Spatial Analysis from Below," 128-129.

space) and history (narrative space) of the world through exploration. So, the player explores the world through their avatar, the knight, and overcomes the obstacles to access new areas of the game. Meanwhile, the player learns more about the world the knight inhabits, what happened, what is happening, and what needs to happen. The player learns by speaking to NPCs, through item descriptions, contextual clues, and storytelling (level/world design, level visuals etc). So, the sense of being lost in terms of gameplay replicates the player's and PC's engagement with the narrative. The narrative is lost to the gameworld's history and is embedded within locations that the player will encounter by exploring. By piecing together the ludic components of the map the player will begin to see connections between biomes. As the player becomes more familiar with the architecture of the game, so too will they become more familiar with the narrative. The map system encourages this exploration play and narrative discovery.

This treatment of narrative in the HK world aligns with Jenkins' theorisation of how embedded narratives should convey their narrative through world design and items.¹³⁸ We can expand this to thinking about how upgrades are handed out in the game. For example, the nail (which is the PC's sword) can only be upgraded by a blacksmith found in the City of Tears. First the player is required to find this blacksmith, and then find the requisite materials, some currency and a few of the six pieces of pale ore, which is all the ore that is available in the game. By looking for the requisite pale ore players must search the extremes of Hollownest, and as a result find more of the story, and in upgrading will experience a short side narrative with the blacksmith. By tying something players want – a weapon upgrade - to exploration, an action that is inherently tied with learning about the game's narrative, the game creates a ludonarrative system whereby engaging with the ludic systems of the game, the player is also exposed to the narrative of the game. Here we can see a different kind of exemplification of Cole's theorisation of player choosing to engage with the authorial voice.¹³⁹ That is, the game is structured in such a way that, rather than having the player's only option to engage with the narrative, to access the narrative the player must engage choose to engage with it.

¹³⁸ Jenkins, "Game design as narrative architecture."

¹³⁹ Cole, "Connecting player and character agency in videogames," 9-10.

The ludonarrative technique of discovering narrative through exploration is exemplified through the provision of multiple endings to the game. For the primary ending of the game, i.e. defeating the Hollow Knight and becoming the new vessel, the player is required to obtain the dream nail and destroy the three dreamers sealing away the Hollow Knight. This process is intensive and requires several intermediary steps in classic metroidvania style: acquisition of the shade cloak, mantis claw, Isma's Tear, crystal heart, wings, shade soul, desolate dive, and so on.¹⁴⁰ For the 'radiance' ending,¹⁴¹ the player is required to visit numerous optional areas and collect multiple extra items, primarily the king's mark, the two halves of the kingsoul, and the void heart. Through this process the player will encounter more information about the world, and even travel back through time via memories to gain information about the world, the King, the Hollow Knight, and the knight. In so doing, the designers have tied engagement with the ludic challenges of the game with the narrative information available to the player. This deployment of player choice to seek out embedded narrative through choosing to engage with more of the game, thereby receiving different endings demonstrates the role that agency plays in the embedded/emergent narrative elements of the game. This will be further detailed below when discussing difficulty.

For Despain and Ash information about the gameworld and the narrative is directly used to inform a gameplay system to create ludonarrative harmony.¹⁴² In HK, the designers similarly use the gameplay system of SOUL to convey narrative information about the gameworld and some of its inhabitants. As previously noted, SOUL is a resource that can be used to cast spells or restore health. To regain SOUL the PC is required to hit an enemy with their weapon. However, there are a very small number of enemies that don't provide SOUL on striking them. These enemies are born of the Void, one of the animating forces of life in the world. While every other being is animated by SOUL, beings of the void are not, and as such provide no SOUL, unless they have been taken by the infection. Notably, the shade that is left upon the PC's death is one such being. As a result, this deviation of combat mechanics informs the observant player about the world, and narrative, through which they are playing. Namely that there is some distinction between different beings, there is a clear

¹⁴⁰ While not every single one of these is required to complete the hollow knight ending, most players are unlikely to know the skips required to not acquire these and still complete the game.

¹⁴¹ The 'siblings' ending is the same as the radiance ending minus the final confrontation, so for simplicity's sake they are grouped together here.

¹⁴² Despain and Ash, *Designing For Ludonarrative Harmony*, 11.

opposition between those who are made of SOUL and those who aren't, and that the PC is somehow connected to the latter. This is a clear example where, by making a slight change to gameplay with specific NPCs, the designers have interwoven the world narrative into the fabric of their gameplay thereby developing ludonarrative consistency in story and leaving small breadcrumbs of detail for players to reflect upon when they've attained a fuller understanding of the narrative. This subtle deployment of mechanic is a variation of Schlinier's 'broken-toy mechanic'¹⁴³ wherein the player's attention is drawn to fundamental aspects of the game's setting, its history, through what appears, at first, to be an error in the game system. Errors often stand out more clearly to us than a smooth experience, and HK has deployed something that strikes the player as error to signal through gameplay that there is something to notice narratively. Similarly, it demonstrates Roth et al.'s theorisation of a hermeneutic strip¹⁴⁴ wherein HK has established a feedback loop that the player anticipates before upsetting it, changing the hermeneutic strip, and developing new meaning through that challenge to the player's assumptions of the world narrative.

Another example of Despain and Ash's ludonarrative design cycle is how HK's world setting and the gameplay genre are used to inform one another. In an interview the HK designers discussed the decision to set the game in a bug's nest and how that came to inform the decisions to make a metroidvania, because the two have a similar sprawling maze like construction.¹⁴⁵ So, the world setting of a bug nest informed the game genre, but it also informed constructing overarching thematic design, namely, PC alignment with the void and against the light in a subversion of the light vs dark trope.¹⁴⁶ By using the game's setting to inform the genre choice and overarching theme of the game, HK maintains a ludonarrative consistency across its various aspects, gameplay, world narrative, theme, aesthetics, and genre all reinforcing the experiences afforded players.

However, it is important to note that every player does not have the same experience. The game's designers have designed and prepare for multiple approaches to play.¹⁴⁷ This speaks

¹⁴³ Schlinier, "The broken toy tactic: Clockwork worlds and activist games."

¹⁴⁴ Roth, Nuenen, and Koenitz, "Ludonarrative Hermeneutics: *A Way Out* and the Narrative Paradox," 7.

¹⁴⁵ Milner, "The Making of Hollow Knight."

¹⁴⁶ Benjamin Horn, "Of Insects, Wisps, and Uncertainty: A Hermeneutical Comparative Analysis of *Ori and the Blind Forest* and *Hollow Knight*," in *25th International Symposium of Electronic Art* Gwangju, Republic of Korea 2019. 22-28 June 2019. [https://scholars.cityu.edu.hk/en/publications/publication\(9018ce91-6ca0-4290-a231-9e8ff1c7c87f\).html](https://scholars.cityu.edu.hk/en/publications/publication(9018ce91-6ca0-4290-a231-9e8ff1c7c87f).html).

¹⁴⁷ Game Maker's Toolkit, "The World Design of Hollow Knight | Boss Keys," YouTube Video, 38:06. "We try to let the player loose in a wild world, not push them explicitly on way, and reward them for choosing their own path."

to the design ethos of the game where the player is allowed to decide what they do and do not engage with. Because the narrative is delivered in a post-modern style through clues, descriptions, in-world objects, and is highly ambiguous requiring investigation and theorisation only the players that are curious about the world's *narrative* will engage with that content. Similarly, a player that is only interested in the *gameplay* and possibly speedrunning will seek out the relevant challenges the game affords and play in those ways, for example 'steel soul' mode where 'death' means the save is wiped and the player must start again. This capacity for players to choose their method of play means they are provided with a way to enjoy the game that speaks to them. It does not mean, however, that they are not exposed to the other content. That is, while a player whose primary interest is the gameplay might seek out the items they want for a particular build, in so doing they will be *exposed to*, but not forced to *engage with*, the narrative. In this way, the designers have designed for diverse player choice and player agency, while also maintaining authorial intent and authority, in a similar fashion to that proposed by Jørgensen¹⁴⁸ and Bizzocchi,¹⁴⁹ but instead of relegating the narrative to NPCs, HK embeds its narrative in the world and in the past. As a result, players have both agency in choosing to engage more deeply with the story, *and* a sense of engagement by uncovering and exploring what is a mostly set and unchanging narrative. This allows for an interpretation of a Cole's theorisation of a player's agency to choose to engage with the authorial voice of the design.¹⁵⁰ That is, HK offers the player the agency for the player to choose to engage with an embedded narrative or to ignore it. Additionally, due to the ambiguous nature of the narrative, and the investigation required, we can observe community development born out of the ludonarrative structures of HK as Schniz noted were born out of the SoulsBorne games and their ludonarrativity.¹⁵¹ There are many forums and discussion boards online, and perhaps more notably entire YouTube channels and careers dedicated to unpacking the story and lore of HK and theorising beyond the currently available material.¹⁵² This is a likely and natural extension of the design of the game's narrative. That is, because the story is

¹⁴⁸ Jørgensen, "Game Characters as Narrative Devices. A Comparative Analysis of Dragon Age: Origins and Mass Effect 2," 327-238.

¹⁴⁹ Bizzocchi and Tanenbaum. "Mass Effect 2: A Case Study in the Design of Game Narrative," 401-402.

¹⁵⁰ Cole, "Connecting player and character agency in videogames," 9-10.

¹⁵¹ Schniz, "Sceptical Hunter(s): A Critical Approach to the Cryptic Ludonarrative of *Bloodborne* and Its Player Community."

¹⁵² For example, Mossbag, "Mossbag, channel page." *YouTube*. Accessed November 10, 2021. <https://www.youtube.com/channel/UCTvH45HvnOzqXvfNJqdc3xg>.

segmented and difficult to unpack, curious players will turn to the online community for answers, replicating the same exploratory and investigative drive the game fosters through play. So, HK provides players with various ways of playing and engaging with the game within its ludic and narrative structures. By designing the narrative aspects of the game to align thematically with the player's decision to engage with the story through exploration the designers have developed a synthesis between agency, narrative, and exploration that affords ludonarrative harmony.

The next section details the difficulty of the game and demonstrates how player agency and choice to engage with difficulty and narrative can effectively develop ludonarrative as well.

When considering differing ways of playing there is an interesting argument to be made about difficulty selection and ludonarrativity. In many, more commercially popular game series (*Call of Duty*, *Dragon Age*, *Halo*, *The Elder Scrolls* etc.) there is a menu option to select the level of difficulty of the game (ranging from easy to normal, hard, and very hard). There are two camps of thought on this topic. First, is that games are primarily for entertainment, and individuals should be able to enjoy the game in whatever way they decide. This way of thinking also considers the rights of everyone to enjoy these products regardless of ability or disability. This thinking harkens back to older arguments in the 90s and early 2000s about justifying the inclusion of cheat codes with games. The second camp is that a game is a set experience, of which the designed level of difficulty is a part, whether that takes the form of difficulty as a design device for conveying the harshness of the gameworld, or a design for a particular player experience – that is, of overcoming and triumphing over a tremendous challenge. While questions of access are important (and the case study of *Celeste*, below, has been celebrated for its 'difficulty' selection design)¹⁵³ HK provides a subtler way to select difficulty. That is, through optional content. The game experience can be argued to be complete by seeing the first ending the game offers, and while reaching that point of the game is a challenge, what comes afterwards is significantly more challenging. However, it is the player's choice to continue engaging with the game after that point. So, players choose their level of difficulty by choosing the point at which they stop playing the game. This is

¹⁵³ The difficulty selection of *Celeste* clearly states that there is an intended experience of difficulty that the game provides, however it understands that this might be an impassable barrier for some, and as such provides options for them, but asks that unless this is the case to maintain the base difficulty of the game.

evidence of synthesised ludonarrative where the engagement with those levels of difficulty reflects the narrative of the game. For example, that initial ending essentially maintains the status quo of the game world: the infection was breaking free of the previous vessel, and the PC defeats the failing vessel and becomes the new one, thereby resealing the infection. Whereas, with the radiance ending, additional narrative includes learning about how the vessel came to be, who 'the knight' is, and how this kingdom came to exist, before attaining the ability to not simply seal the infection but defeat its source. One of the examples of this choice of increased difficulty is dream fights. Dream fights are rematches against previously beaten bosses in a spirit world, where they are significantly more difficult. Defeating dream bosses are required to access the radiance ending and provide additional information about the world and the bosses themselves, such as their history or reason for their actions. So, by tying difficulty to more difficult-to-achieve endings of the game, the game narratively reconciles the feat in the game world, with the difficulty of the player experience, whilst still making accessible the first ending for those who may struggle with the game's difficulty. Herein we can imagine a variation of Johnson's 'revision of narrative,'¹⁵⁴ that allows players to negotiate the kind of play experience, and hence, narrative that they wish to experience.

Ultimately, what we can note about HK is that it is a challenging game about exploration through a PC who acts as an avatar for the player to explore and engage with the world. The game embeds its narrative in its world and uses exploration as the mechanism by which to engage with the narrative. However, while it is an embedded narrative the player has the agency to decide how they want to engage with that narrative. The ambiguity of the narrative encourages players to search for answers in HK's biomes, which reinforces the explorative drive of HK. Its design process took inspiration from its setting to define the gameplay and overarching theme. HK uses the ludic systems of the map and upgrades to encourage exploration that in turn exposes players to the narrative and drives curiosity, creating a ludonarratively harmonic game.

So, the exploration of the world is tied not only to the lore of the world, but also to what gameplay the player can access. That is, by learning more about the world through exploring more, the player gains access to more gameplay and additional endings. As a result of this

¹⁵⁴ Johnson, "Building the character: Imagined consciousness in roleplaying videogames," 10-14.

nuanced system the game accomplishes a strong level of ludonarrativity by using the user interface, and game mechanic, of navigation to create a need to explore the world and engage with it, while using the system to develop player skills for other methods of play and immerse the player in the world.

Hollow Knight Ludic/Narrative Categories

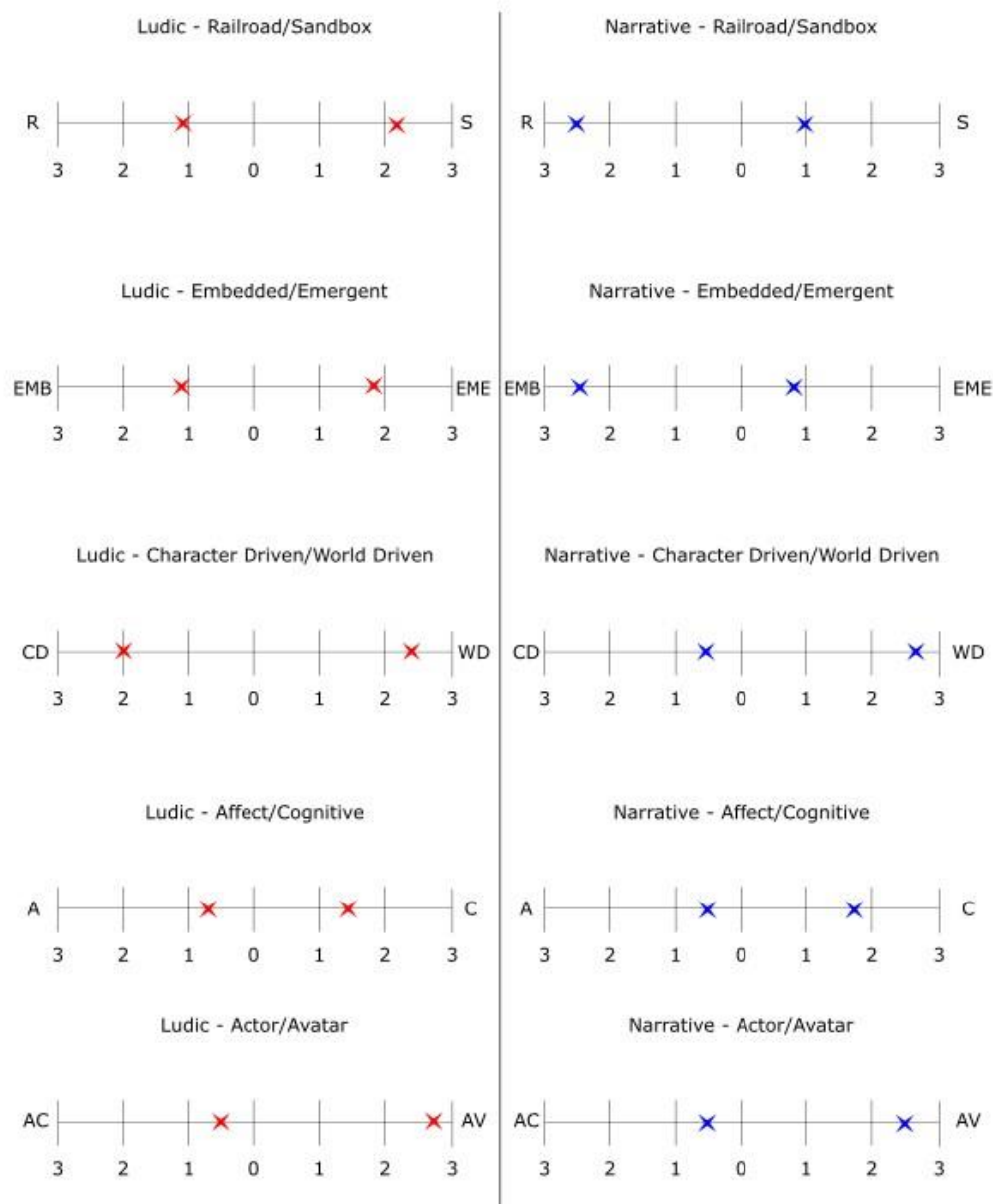


Figure 8: The assigned values for Hollow Knight's Ludic and Narrative values within each category of the LAF. The value for each side of the category can be overserved and they can be compared to the ludic/narrative counterpart.

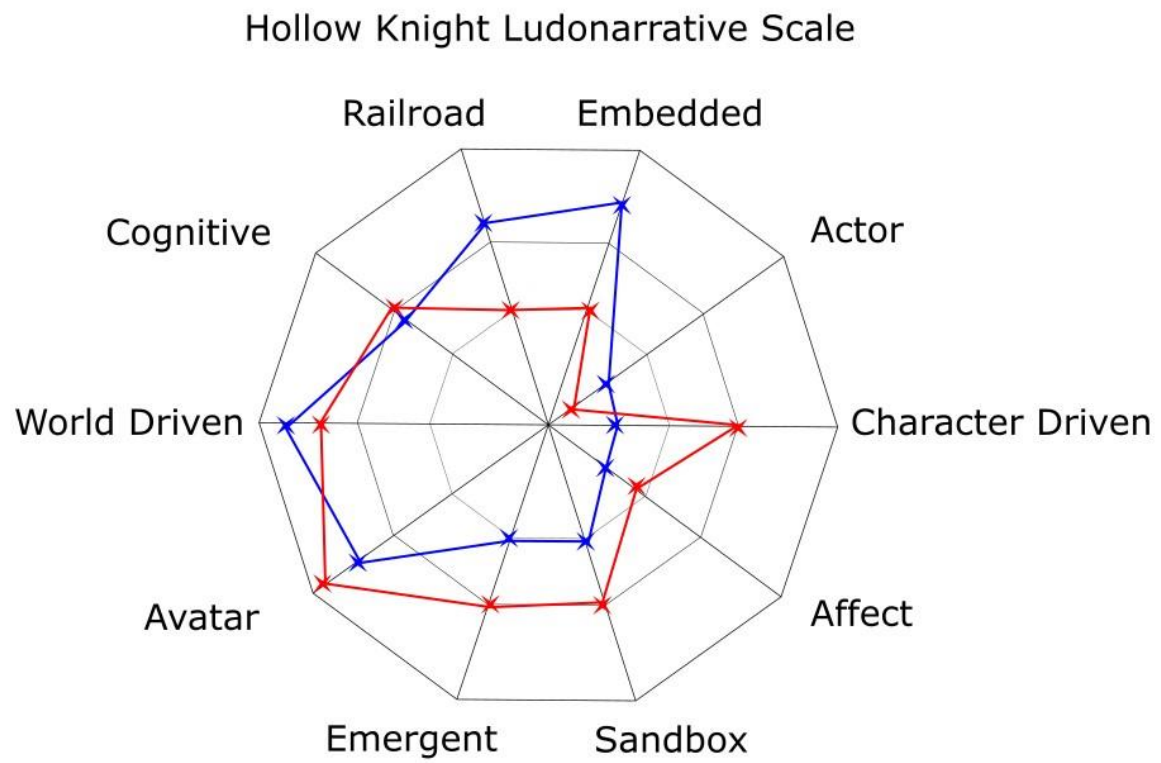


Figure 9: The Ludonarrative scale for Hollow Knight assembled from the values of the categories in figure 8 to visually depict the overarching ludic and narrative elements of Hollow Knight and identify where there is and is not synthesis

3.2 Case Study #2 – Celeste

Developer: Extremely Ok Games (formerly MattMakesGames at the time of release)

Publisher: Extremely Ok Games (formerly MattMakesGames at the time of release)

Year/Platform: 2018: Nintendo Switch, PlayStation 4, Xbox One, Windows, Linux, and Mac.

The game was accessed and played through the Steam client on Windows.

Extremely Ok Games is a small independent studio in Vancouver, Canada. With the initial release of the game in 2018 to public and critical success, Extremely Ok Games launched the 'Farewell' DLC in 2019, free and accessible to anyone with the base game.

Celeste is a challenging platformer, about a PC named Madeline, a trans woman struggling with anxiety and panic attacks. The game's setting is a mountain named Mt. Celeste, where the metaphysical boundaries of the world and identity blur. *Celeste* has a strong retro 8-bit visual and soundtrack aesthetic.

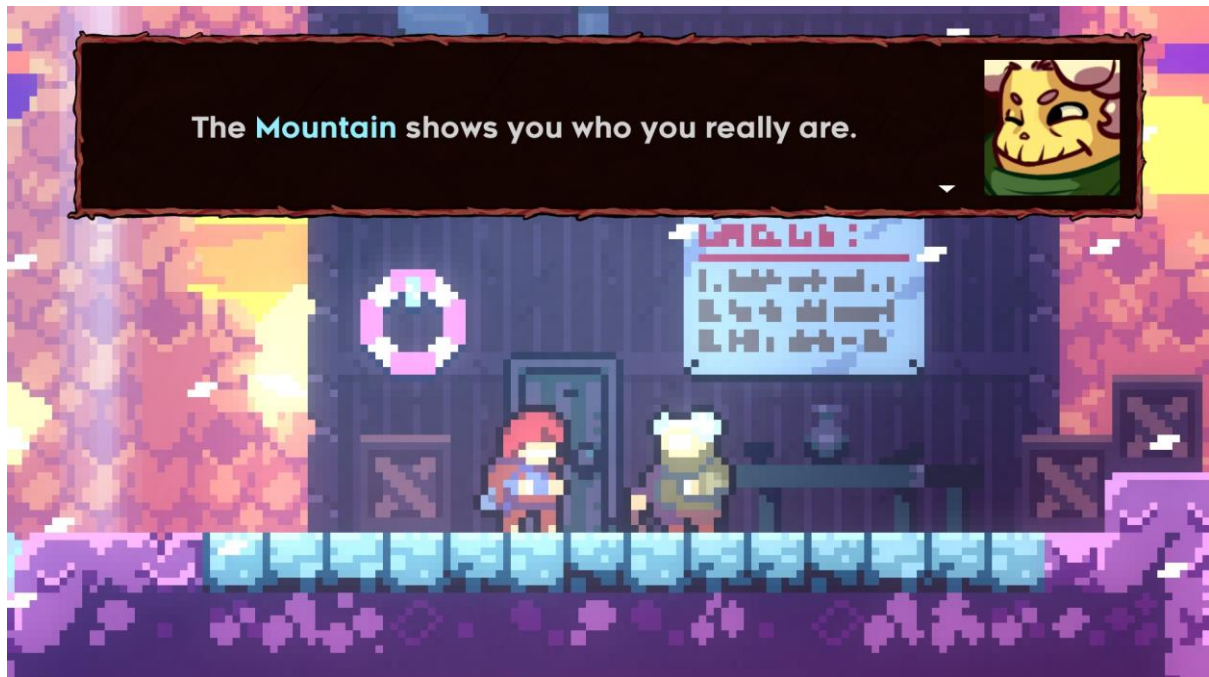


Figure 10: Celeste draws visual and game design inspiration from the 8-bit era of games.



Figure 11: A monument at the end of the first chapter dedicated to the countless people who lost their battle with mental illness.

The game has 11 distinct sections comprising a prologue, 9 gameplay areas each labelled chapters (including the DLC content, chapter 9 Farewell, and an epilogue (between chapter 7 and 8)). Within each of these chapters are contained levels, which are individual areas wherein if the player dies they are reset to the start of that level (figure 12).

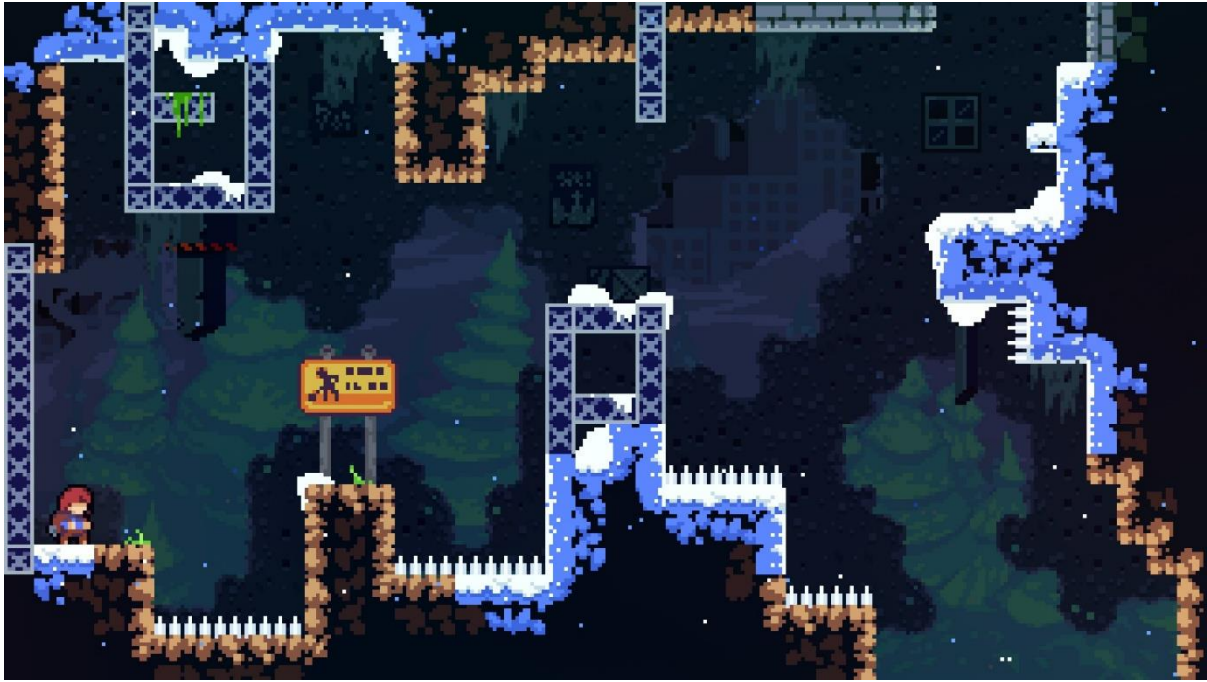


Figure 12: An example of a single level within Chapter 1. By entering the space to the top right the player will transition to the next level.

The levels are initially short, often contained within a single screen (figure 12), but begin to expand, scrolling to accommodate much wider and taller sections. This careful design choice ensures the longer levels have more impact.¹⁵⁵ The NPCs that interact with Madeline are Granny (an old woman, a sage guide at the foot of the mountain, who warns travellers what they will confront on their climb), Theo (an influencer climbing the mountain), Mr. Oshiro (a depressed ghost still manning his post as manager of a deserted and haunted hotel on the mountain), and Badeline who is a shadow manifestation of Madeline's anxiety, fear, and self-doubt made real by the mountain (see figures 13 and 14).

¹⁵⁵ GDC, "Level Design Workshop: Designing Celeste," YouTube video, 14:53. February 28, 2018. <https://www.youtube.com/watch?v=4RlpMhBKNr0>.

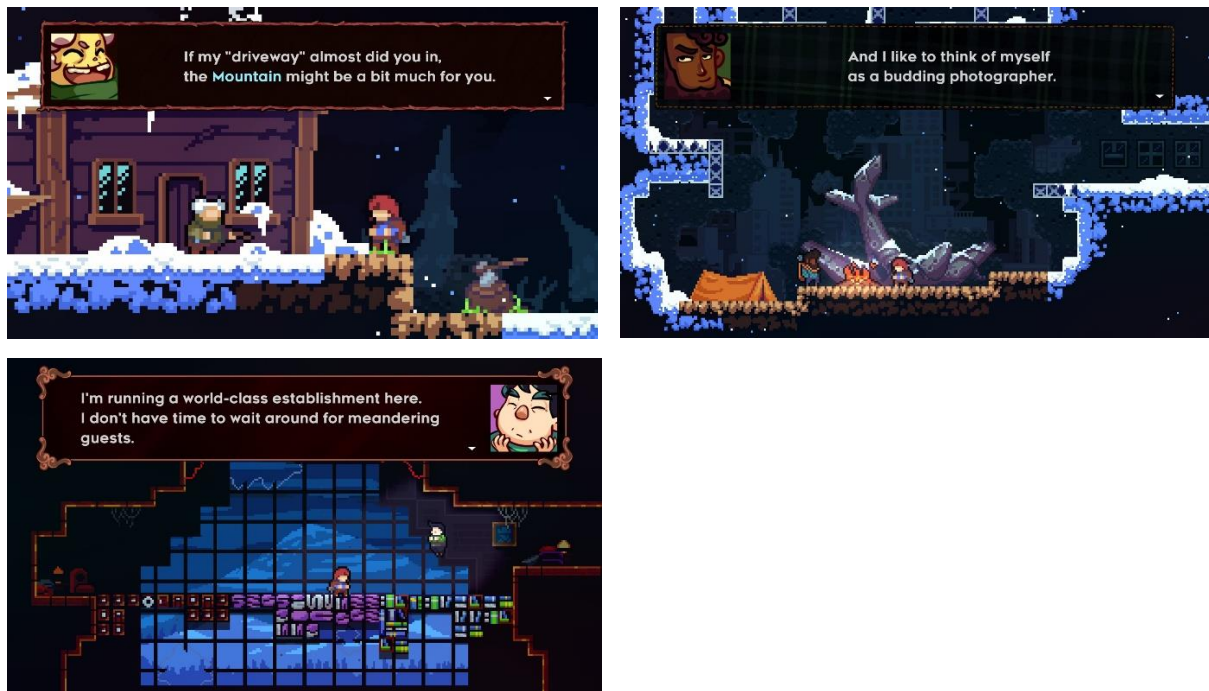


Figure 13: (Top Left) Granny encountered and spoken in the prologue; (Top Right) Theo an influence first met in a side area of the first chapter of the game; (Bottom Left) Mr. Oshiro guiding Madeline through the third chapter of the game.

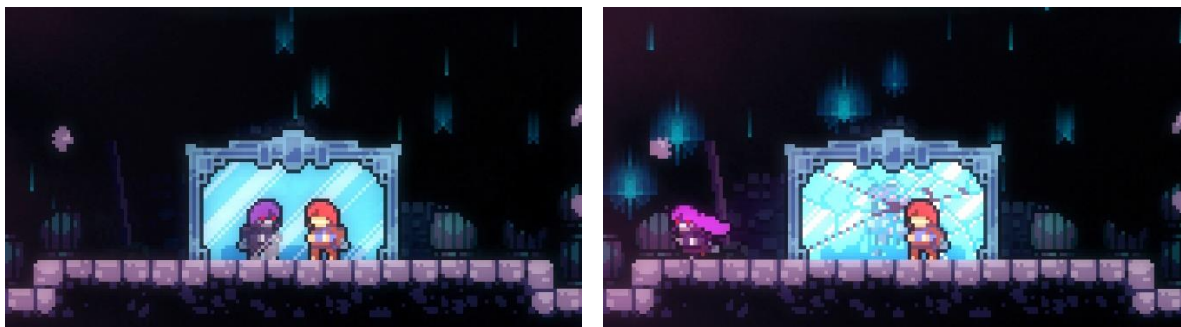


Figure 14: Madeline encountering a mystical mirror from which her reflection, a “Part of me” known to the community as Badeline physically manifests and breaks free in the second chapter of the game.

LAF criteria will be used to examine three ludonarrative aspects of *Celeste*. First, gameplay as a metaphor for anxiety. Second, story and emotional development (for both PC and player) as informers of level design. And third, emergent perspective alignment between actor and player through gameplay difficulty, to develop emotional resonance leading to a complex form of ludonarrative harmony.

The first section will examine how the symbolic design of *Celeste*’s gameplay reflects anxiety and is representative of ludic and narrative Affect/Cognitive, Avatar/Actor, and Character

Drive/World Driven categories of the LAF through the development of strained temporal space, symbolic gameplay, and a narrative about living with anxiety.

Celeste is a game about living with anxiety, and mental illness in general. Madeline begins the game arriving at the base of the mountain, telling herself to just breathe. Madeline wants to climb the mountain to prove to herself that she can, as a way of confronting and overcoming her anxiety. The three basic mechanics available to the player are:

- **Jump:** Madeline jumps, a simple mechanic used to cross gaps and overcome heights (figure 15).

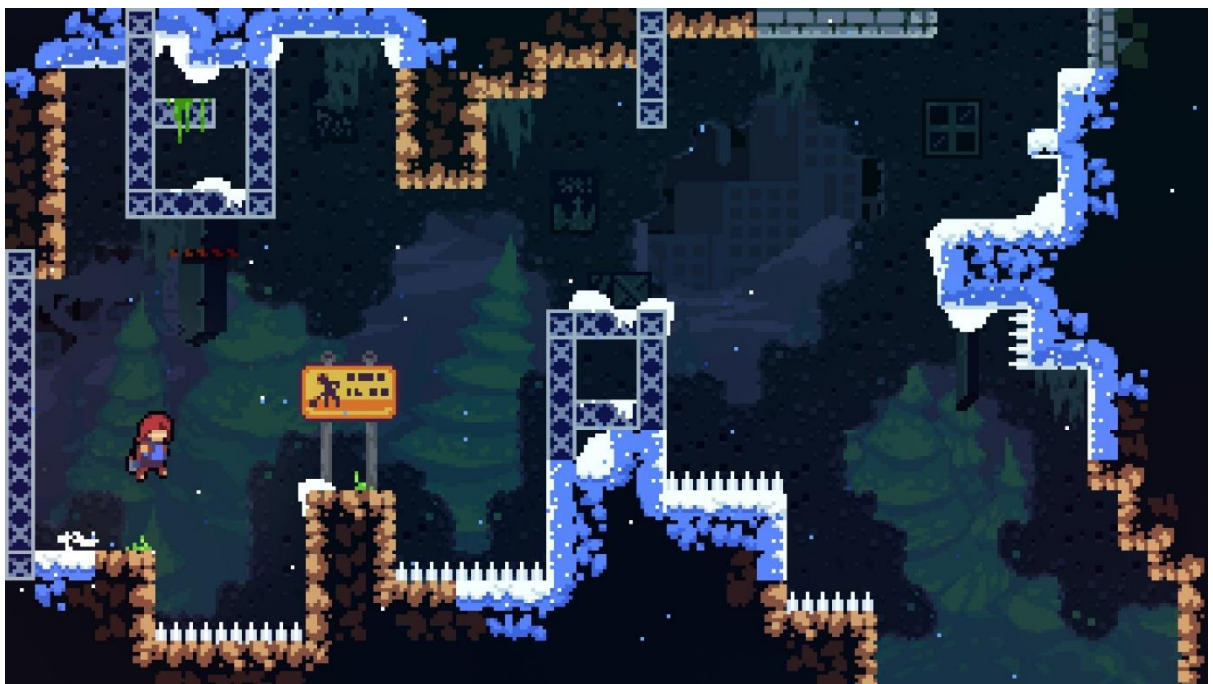


Figure 15: Madeline jumping.

- **Dash:** The dash can be executed on the ground or in the air; it affords Madeline a brief amount of directional movement and acceleration. Initially, there is a single charge of dash that is recharged by standing on the ground again. The expenditure of this charge is visualised in a change of hair colour, red (1) -> blue (0) (figure 16). Later, through integrating with Badeline and receiving a “Level-Up,” the player has access to a second charge of dash before needing to touch the ground to recharge, adding a new charge of dash visualised as another layer of hair colour (figure 17), purple (2) -> red (1) -> blue (0). The charge does not reset while holding on to a vertical surface.



Figure 16: Madeline dashing mid-air resulting in a change of hair colour and expenditure of her single dash.



Figure 17: through integrating with Badeline and receiving a “Level-Up,” the player has access to a second charge of dash before needing to touch the ground to recharge, adding a new charge of dash visualised as another layer of hair colour.

- **Grip/Climb:** By holding the relevant input Madeline can grip to vertical surfaces for as long as an unseen stamina bar will allow. The stamina bar is refilled by standing on the ground again. While climbing Madeline begins to exhibit signs of stress before running out of stamina and falling (figure 18.)

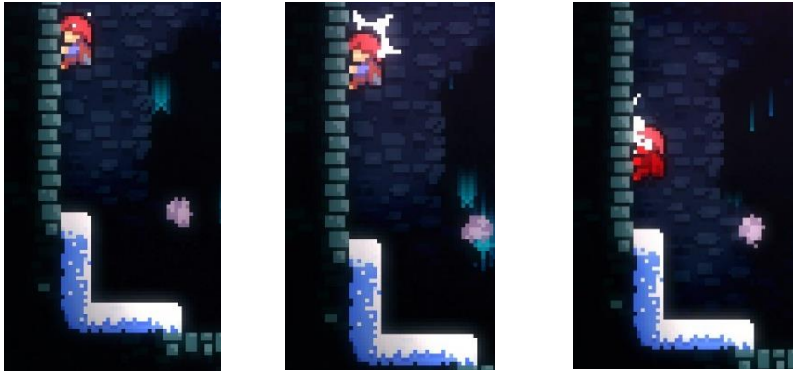


Figure 18: Madeline begins showing signs of exertion while climbing and will eventually, after expending her stamina, begin to slide.

These mechanics are introduced in the first chapters of the game; Chapter One builds the player's abilities to execute these commands in challenging, but temporally forgiving, environments. That is, the player can stop at certain sections of the current platforming challenge and reassess, or 'take a breather.' While this breakdown of mechanics seems a limited and simple array there is significantly more system complexity.¹⁵⁶

Beyond the mechanics, the real complexity and difficulty arises in level design and the player's deployment of these mechanics. In the second chapter Madeline has her first encounter with Badeline, her negative self, who breaks out of a mirror and begins chasing Madeline (see figure 19), trying to convince her she should give up her attempts to climb the mountain. This leads to a gameplay section where Madeline is continuously chased through the level by Badeline, and later by multiple copies of Badeline, all executing the exact same commands two seconds behind the player's inputs (when there are three or 5 clones the initial Badeline has a two second delay, with each clone of Badeline 0.5 seconds behind their proceeding version).

¹⁵⁶ For a full list of the possibilities see: <https://celestegame.fandom.com/wiki/Moves>



Figure 19: Badeline and Co. chasing Celeste through the ruins

This gameplay effectively creates an ever-present affective and temporal pressure, with little space and time to calm down and reassess the situation. This pressure is compounded in the later levels of the chapter, as the player is required to complete longer levels that scroll to reveal new sections, requiring the player to constantly respond to challenging platforming under time pressure, without a plan. This gameplay design strategy results in player feelings of anxiety, stress, and even panic. This demonstrates that the design successfully engages the player and maintains a sympathetic nervous system response (in this instance flight, of the flight, fight or freeze options).

Cleverly, the pacing of the chapter is designed in such a way that the section following Badeline's chase is calm, with gentle music as opposed to the high tempo assault while being chased and lacks any platforming challenges, threat of fail state, or temporal pressure. This calm section provides players an opportunity to calm down and trigger a parasympathetic response before the next story. In this way the audio of the game acts as moderator, or an informal narrator,¹⁵⁷ between the affective and the ludic, by guiding the registers of affect intended for the player to feel.¹⁵⁸

This same affective design for inducing anxiety can be identified in the climb/grab mechanic, where the player has a rough idea of how long Madeline can hold on, but without a specific

¹⁵⁷ Roe and Mitchell, "Is this Really Happening? Game Mechanics as Unreliable Narrator," 13-14.

¹⁵⁸ GDC, "Level Design Workshop: Designing Celeste," 22:40.

gauge they are left to rely on the tension graphics Madeline provides while hoping they can reach a safe point in time. Other gameplay design that develops this emotional register includes the grime in Chapter 3 that after touching transforms into an environmental hazard that can kill the PC (figure 20).

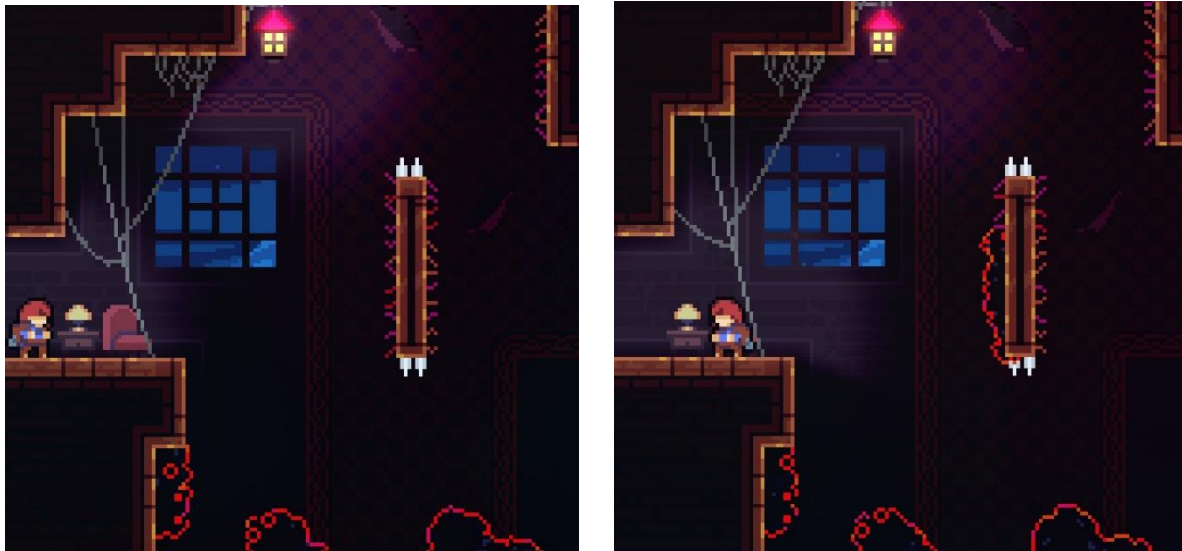


Figure 20: The before and after of the growing slime hazard can be seen between these two screenshots. While safe to touch once, after being touched the tendrils transform into a hazard that will cause a reset on touching.

Another instance is the moving blocks in the game's final chapters. These blocks are used to carry Madeline through the level but do not deviate in their speed, while Madeline is required to clear obstacles, or take a different path around a platforming challenge to return to the moving block in time. In this way, the designers of *Celeste* use strained temporal frameworks for an affective response leading to stress and anxiety in the player.¹⁵⁹ This design strategy illustrates Wei's theory around the use of temporality in games to develop narrative capacity.¹⁶⁰ Furthermore, in *Celeste*'s gameworld, the platforming and objects the player has to engage embody these same anxiety affects through controlled 'path of no return' design where the player in completing an action, such as using the grime covered platform in figure 20, cannot return to the start without dying to cause a reset. *Celeste* also demonstrates Golding's theorisation of lived player experience of gameworlds,¹⁶¹ how the game establishes safe zones (platforms you can stand on) and

¹⁵⁹ GDC, "Level Design Workshop: Designing Celeste," 14:00. Maddy Thorson discusses safety as a defining concept in designing levels

¹⁶⁰ Wei, Bizzocchi and Calvert, "Time and Space in Digital Game Storytelling," 12-14.

¹⁶¹ Golding, "Putting the Player back in their Place: Spatial Analysis from Below," 122-126.

stress zones, which is any area where Madeline is under threat or engaged in a resource draining activity.¹⁶² By establishing these spaces through the early sections of the game the developers can upset that balance and introduce stress to previously safe spaces. Another way the game world leverages this strategy is by deploying timed platforms that blink in and out of existence to the beat of a given rhythm, necessitating users to synchronise movement to the beat. By establishing and upsetting safe zones for the player, the designers have leveraged the mechanics and level design of their game to induce player anxiety and stress, thereby realising a harmonic relationship with the game's narrative about experiencing and living with anxiety and panic. The aesthetic, mechanic, and temporal treatments afford stress and anxiety, thereby serving the narrative about stress and anxiety through player embodiment of these feelings. Again we can observe Despain and Ash's ludonarrative design loop¹⁶³ tying together an emotion (anxiety) -> mechanic (strained resources, stressed temporality, and one way mechanisms) -> narrative (learning to live with anxiety and panic disorder) -> context (climbing a – a common symbol for overcoming a challenge or mastering self, with the addition of its metaphysical blurring and making versions of self-real) -> back into emotion (climbing a mountain would induce anxiety) and so on. As such, we can observe a clear cyclical relationship between these four aspects of the game combining to deliver a thematic experience of overcoming anxiety through ludonarrative.

We can similarly observe a sense of embodiment throughout the above noted experiences and mechanics. In conjunction with quick reset times the player is constantly under pressure and stress to perform. This embodied feeling of pressure or stress through mechanics is a variation of the embodiment that Isbister observed with physical and real-world games.¹⁶⁴ That is, through the gameplay experience the player comes to feel an embodied sense of the kind of stress and pressure that Madeline is experiencing. By linking Madeline's affective experience through the narrative with those experienced by the player, the game accomplishes what Veale described as affective materiality.¹⁶⁵ This will be further explored in discussions around alignment of perspectives and goals below.

¹⁶² Such as climbing or dashing.

¹⁶³ Despain and Ash, *Designing for Ludonarrative Harmony*, 11.

¹⁶⁴ Isbister, *How Games Move Us: Emotion by Design*.

¹⁶⁵ Veale, "Gone Home, and the power of affective nostalgia," 657-658.

The next section identifies the ludic and narrative Emergent/embedded and Railroad/Sandbox categories of the LAF in the synthesis between narrative and ludic arcs within the game, and how the other aesthetic elements of the game support that synthesis. Specially, we will map two sections of the three-act narrative and compare the ludic and narrative structures in chapters 2 and 6. In doing so, we will also examine the visual elements that help build a metaphoric representation of Madeline's journey.

Celeste provides an opportunity to examine the broader development of ludonarrative through macro-level design, being the overall design of the chapters, as manifestation of the game's overarching narrative. The narrative of *Celeste* can be broken into three broad movements. Firstly, running from anxiety. Secondly, overcoming anxiety. Finally, accepting anxiety. For this analysis, we will examine the level design of the first and third sections, Chapter 2: Mirror and Chapter 6: Reflection respectively.

It is in Chapter 2 that Madeline first encounters Badeline, with the rest of the level dedicated to fleeing from Badeline. The chapter is designed to engage the flight response, as Madeline runs from Badeline and must complete platforming puzzles that require managing the movement of the Badeline clones chasing her. This management requires engagement with a cognitive load, puzzle solving, while under temporal and affective pressure of being chased. This design serves as a deviation from Wei's theorisation of puzzles as narrative vehicles.¹⁶⁶ Rather than being narratively loaded they are affectively loaded. That is, the puzzles that require navigating in *Celeste* are often temporally strained, and as such serve to induce an affective response in the player similar to Madeline's experience. Aesthetically, the visual design of this section is an abandoned ruin.

In Chapter 6, after a confrontation where Madeline rejects Badeline as a protector. Badeline becomes furious and throws Madeline to the base of the Mountain. Aesthetically Chapter 6 is wild and overgrown with flora representing the chaos often visually tied to deeper levels of the unconscious and the fecundity of nature. Madeline learns that she needs to accept Badeline as a *part of herself*. So, she sets out to find and apologise to Badeline. However, Badeline rejects her and begins to retreat deeper and deeper into the overgrown area, actively discouraging Madeline from following by attacking from range. Progressing in this

¹⁶⁶ Wei and Durango, "Exploring the Role of Narrative Puzzles in Game Storytelling," 10.

section requires Madeline to reach the end of each level and touch Badeline, at which point Badeline will retreat to the next level, and the process continues until Badeline finally stops retreating and accepts Madeline's apology with a recognition that they need one another before the two merge and "level-up" (figure 17).

There is a clear duality being developed across the narrative arc of the game through the concepts of running/rejection and chasing/acceptance, and in the concept of a shadow reflection of the self we observe an overt manifestation of this symbolism. While this duality is developed narratively, it is also embodied, reinforced, incorporated, and developed by the other aspects of the game.

From a visual perspective each area is distinctly different and conveys duality between ethereal ruins (human decay, loss, abandonment) and overgrown flora (growth, natural, healing) in each chapter's designs.

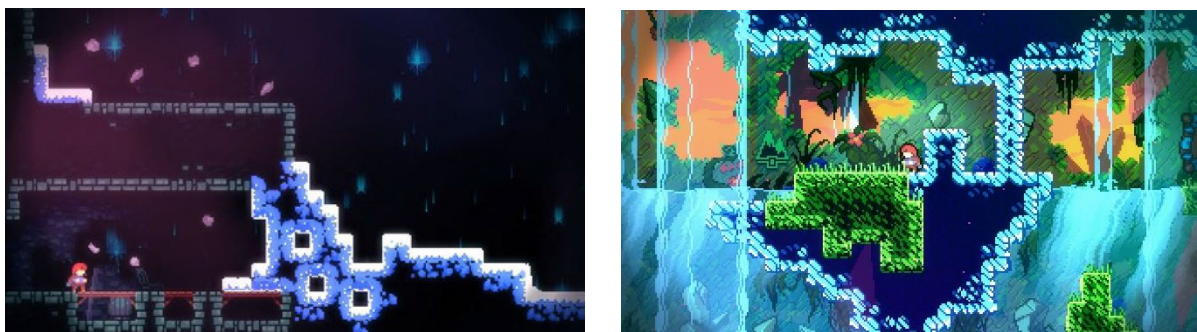


Figure 21: (Left) Chapter two depicting stone ruins and snowfall, the architecture feels linear and structured; (Right) Chapter 6 wild and overgrown with winding paths and nature everywhere.

This visual juxtaposition embodies key metaphors about the mental states of the protagonist as she progresses through the mountain symbolically learning to live with and accept her mental illness. In the early sections of the game, we see human construction before encountering abandoned ruins. As the game progresses, we enter increasing overgrown and fecund areas of wilderness. As such there is a clear progression from the order, constructed, and built world associated with day-to-day life and consciousness to the wilder, overgrown, and floral world associated with emotions, the unconscious, and nature. This visual design is an exemplification of Zonaga and Carter's architectural symbolism in games, representative of a narrative trajectory and emotional investment.¹⁶⁷ This aesthetic

¹⁶⁷ Zonaga and Carter, "The role of Architecture in Constructing Gameworlds: Intertextual Allusions, Metaphorical Representations and Societal Ethics in *Dishonored*," 88-89.

treatment of game space then becomes a visual metaphor for the internal journey Madeline must experience, a progression from the built and constructed to the innate self and natural, to reach the peak of the mountain, which is representative of overcoming and learning to live with anxiety, mental illness, and self-acceptance.

In terms of a macro perspective of level progression, each chapter has an overall trajectory whether that is left, right, up, or down. Chapters 2 and 6 have generally opposing trajectories.¹⁶⁸ For the levels in which Madeline is being chased by Badeline the trajectory has an equal amount of up and down across the two sections. When Madeline is trying to reach Badeline, the overall trajectory is to the right and downwards. So, the overall structure of these chapters and their level design is representative of two symbolic trajectories, particularly when considered in combination with the overarching symbolism of climbing the mountain and levels of consciousness. This structural mapping instantiates Jenkin's meta game architecture theories for developing games,¹⁶⁹ which is extended within *Celeste* to develop an aspect of ludonarrative harmony within the overall arc of the game and narrative.

This same dichotomy is developed through the gameplay goals of each of these sections respectively. The gameplay objective in Chapter 2 is to avoid being touched by Badeline and this is reflected in a reset, while in Chapter 6 the goal is to touch Badeline, thereby progressing the level. So, here we see a gameplay reinforcement of the narrative arc of the game embodied within the gameplay objectives of escape and chase. As *Celeste* is a platformer, movement is the foundation and expression of the game. As such, the respective attraction and repulsion of Badeline in each section of the game ludically conveys narrative and emotional weight within the game. This combination of factors (narrative, gameplay, and macro level design) synthesizes across the game to create a ludonarrative arc defined wherein the level design is informed by the thematic and narrative drive of the given context. As a result, we can identify a clear motif across the game's narrative arc in the form of running and chasing that become gameplay embodiments of fear and acceptance.

¹⁶⁸ There are exceptions, with each section having transitions between levels that might head in a different direction; however, the overall direction of the chapter generally stays consistent.

¹⁶⁹ Jenkins, "Game design as narrative architecture."

In this third section we will examine how *Celeste* deploys a synthesis between player and PC goals that instantiates Avatar/Actor, Affect/Cognitive, Railroad/Sandbox, and Character Driven/World Driven categories of the LAF through its difficulty and constructed narrative developing an alignment between actor and player.

Celeste provides an opportunity for ludonarrative analysis that focuses on alignment between the goals and desires of the player and PC to develop a complex form of ludonarrative harmony. For this discussion consideration of player agency is important. The role agency plays in a game is often a contentious one, especially in the early years of the ludology vs narratology debate.¹⁷⁰ This topic often ties in closely to arguments about the ontological nature of games, with walk-em'-ups (games that have little in the way of gameplay, often consisting of exploring an environment through walking) being the focus of such arguments. Within considerations of agency there are important factors to consider for ludonarrative design, primarily authorial intent and player experience. While solutions for managing both factors have been successfully implemented (micronarratives and companions as vehicles for narrative and player choice)¹⁷¹ many games don't have the resources required to develop these kinds of design. As a result, many small design teams' games will have a smaller capacity for player agency and will maintain a strong authorial control.¹⁷² *Celeste* does not have much agency overall. While there is some capacity within levels to reach the exit through multiple slightly varied paths, and there are optional collectables and additional content, there remains only the single narrative and single ending to the game. However, within this limited agency there is an important distinction to be made between the agency afforded a player within the game, and the agency the player exerts when deciding to engage with a game. For Madeline, the choices she has in climbing the mountain are binary, she can either continue trying to reach the peak, or give up and go home. By constraining the options available to the player, the developers have placed the player in a similar situation, they can either continue to play the game, trying to reach the peak, or give up in the face of significant challenge and difficulty. This instantiates Veale's theorisation of affective materiality¹⁷³ through a different method. This variation in *Celeste*

¹⁷⁰ Jim Bizzocchi, "Games and Narrative: An Analytical Framework," 1.

¹⁷¹ Bizzocchi, "Games and Narrative: An Analytical Framework," 7; Jørgensen, "Game Characters as Narrative Devices. A Comparative Analysis of Dragon Age: Origins and Mass Effect 2," 326-326.

¹⁷² Juul, *Handmade Pixels: Independent Video Games and the Quest for Authenticity*.

¹⁷³ Veale, "Gone Home, and the power of affective nostalgia," 657-658.

instead aligns goals and agency. Both the player and Madeline are afforded the same binary agency, to continue or give up, and both player and Madeline have the same goal, overcome a difficult obstacle. In so doing the game develops a further facet to affective materiality through ludonarrative design that extends beyond the confines of the digital into real world decisions to engage with and overcome a challenge. This can be identified as an example of Arjoranta's perspective alignment allowing for empathy with the PC.¹⁷⁴

Furthermore, when we consider that the narrative of the game is directly about confronting and living with anxiety and panic attacks, with a broader generalised theme of living with mental illness, a ludonarrative theme of determination arises. That is, the game proposes through its systems that struggling with mental illness isn't a failure, only giving up is, and uses its difficulty as a mechanism for developing resilience. This extends Knoller's theorisation of limited agency as artistic tool within game design space.¹⁷⁵ That is, by having limited player agency the designers have instead focused the game's message and meaning within the player's choice to continue engaging with the game through the exercise of their own agency. Additionally, this exemplifies Cole's analysis of limited agency and the artistic value in players exercising agency to engage with the authorial voice and intent of the game.¹⁷⁶ This exploration of agency is not only a macro level discussion about what occurs between player and system, but it is also explored within ludic systems as well.

There are several ways that the gameplay systems facilitate this development. Firstly, difficulty. *Celeste* is unabashedly difficult; however, it is not unfair, with the systems often working in the player's favour, fudging things slightly to their benefit.¹⁷⁷ The short snappy levels with quick reset times heavily encourage trying to overcome difficult obstacles again and again. This leads to multiple deaths on each section of a chapter, which brings us to one of the more unique aspects of the game. Each save file has a death counter. It is not unusual for this counter to reach well over 1000.

¹⁷⁴ Arjoranta, "Narrative Tools for Games: Focalization, Granularity, and the Mode of Narration in Games," 700-705.

¹⁷⁵ Knoller, "Agency and the art of interactive digital storytelling," 265-266.

¹⁷⁶ Cole, "Connecting player and character agency in videogames," 9-12.

¹⁷⁷ Hernandez, Patricia, "Dev reveals the many ways their tough game secretly helps the player: Celeste has a ton of small details you may not notice," *Polygon* March 13, 2020. https://www.chicagomanualofstyle.org/tools_citationguide/citation-guide-1.html.



Figure 22: The death counter held by the save file.

Furthermore, each chapter, and even segments within the chapters, have their own death counts. When considering how players will initially feel towards this counter there are two likely responses, the player views this as a challenge, or they view it as the game mocking them. However, when considering the player's development over the game the counter begins to take on a different meaning. Rather than, 'look how many times you've failed,' the message transforms into, 'look at what you've overcome.' This idea is even exemplified in one the postcards to Madeline shown in loading screens between chapters (figure 23). Anable invites us to consider the "aesthetics of failure as commentaries on systems that encourage us to disentangle ourselves from the "smooth rhythms of frictionless labor."¹⁷⁸ That is, through failure games allow us through affective experiences to interrogate normalised systems. Within the context of *Celeste* this becomes revision of what it means to 'fail' when living with mental illness, both for those who do live with and experience mental illness, and as a learning experience for those who haven't.

¹⁷⁸ Anable, *Playing with Feelings: Video games and affect*, 129.



Figure 23: One of the postcards shown during a loading screen encouraging the player to be proud of their death count.

Celeste takes its themes and uses difficult gameplay to encourage players to confront the realities of living with mental illnesses. This can be understood through the lens of the ludic sublime.¹⁷⁹ That is, mastery of the game is impossible to achieve, but chasing that mastery is a part of the play experience. In similar fashion, learning to live with a mental illness is a constant practice. By aligning the themes with the difficulty of the game, the designers have created a synthesis between the drive to mastery and living with mental illness. This is further developed in the DLC *Farewell* in a particularly difficult and challenging section, when after dying multiple times, Badeline appears to encourage Madeline. The designers were aware of the difficulty of their game but used it to serve the emotional narrative and player development within the game. As such, the game develops a strong thematic exploration of living with mental illness through ludonarratively harmonic design. By aligning real world experience and motivation with PC narrative and emotional drive *Celeste* develops a complex ludonarrative harmony existing between the game's narrative and the player's real-world engagement with the game, with their personal agency rather than in-game agency.

¹⁷⁹ Vella, "No Mastery Without Mystery."

Celeste is an exemplar of designing in a ludonarratively harmonic way around a central idea. The game develops this harmony through the minutia of its gameplay, from specific design philosophies in the establishment and later upsetting of safe and stressed spaces through to the design of the fundamental mechanics available to the player. The game also strengthens its harmonic design through mapping narrative arcs within macro level design, aesthetics, and the feel of gameplay mechanics. Finally, by restricting agency the designers have developed an alignment between the player's and Madeline's goals and obstacles, this presents a new variant of affective materiality that develops a ludonarratively harmonic journey for the player that maps with the game's themes and ties the real and virtual together.

Celeste Ludic/Narrative Categories

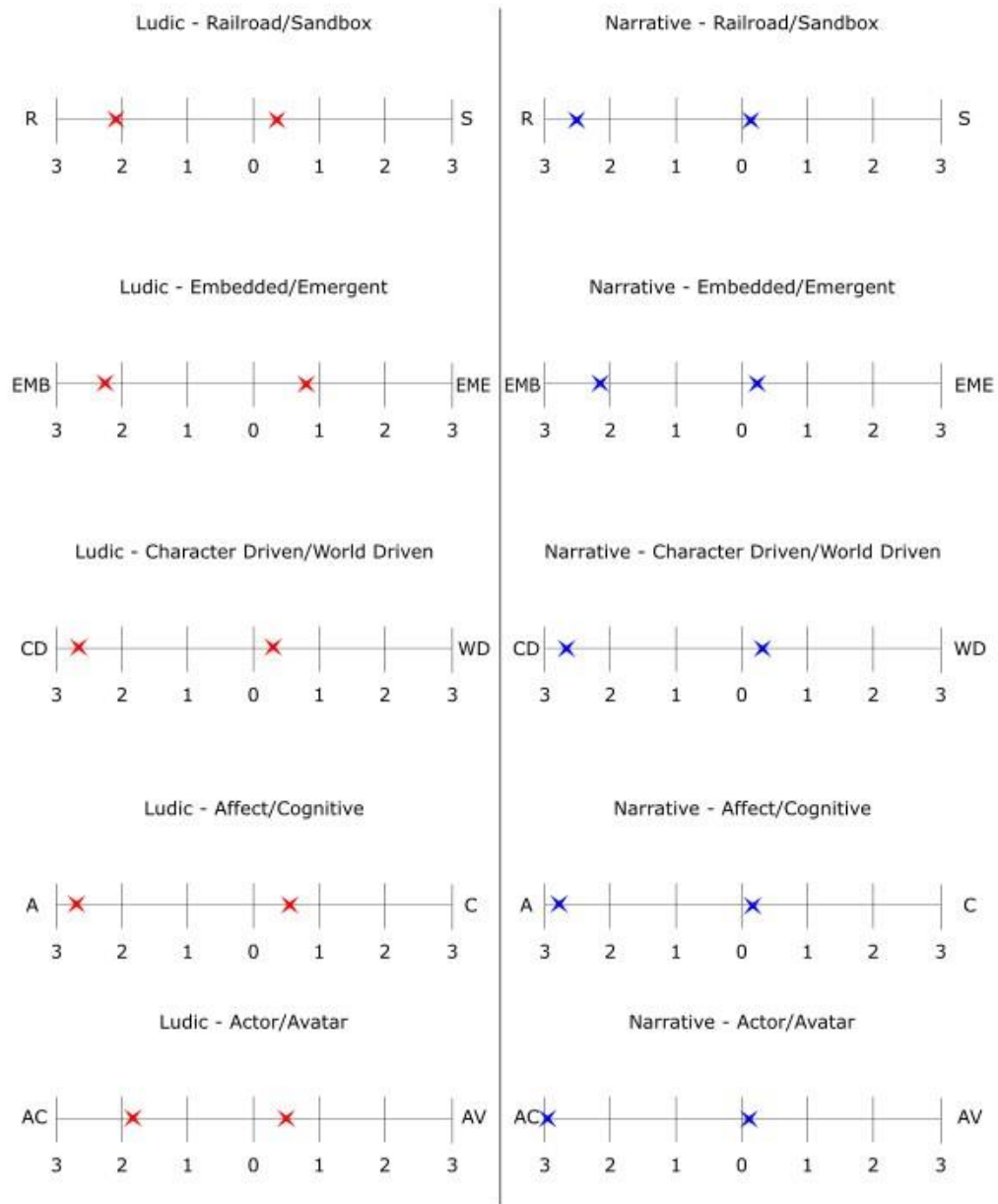


Figure 24: The assigned values for Celeste's Ludic and Narrative values within each category of the LAF. Through comparison we can not a strong level of synthesis between the ludic and narrative values of each category.

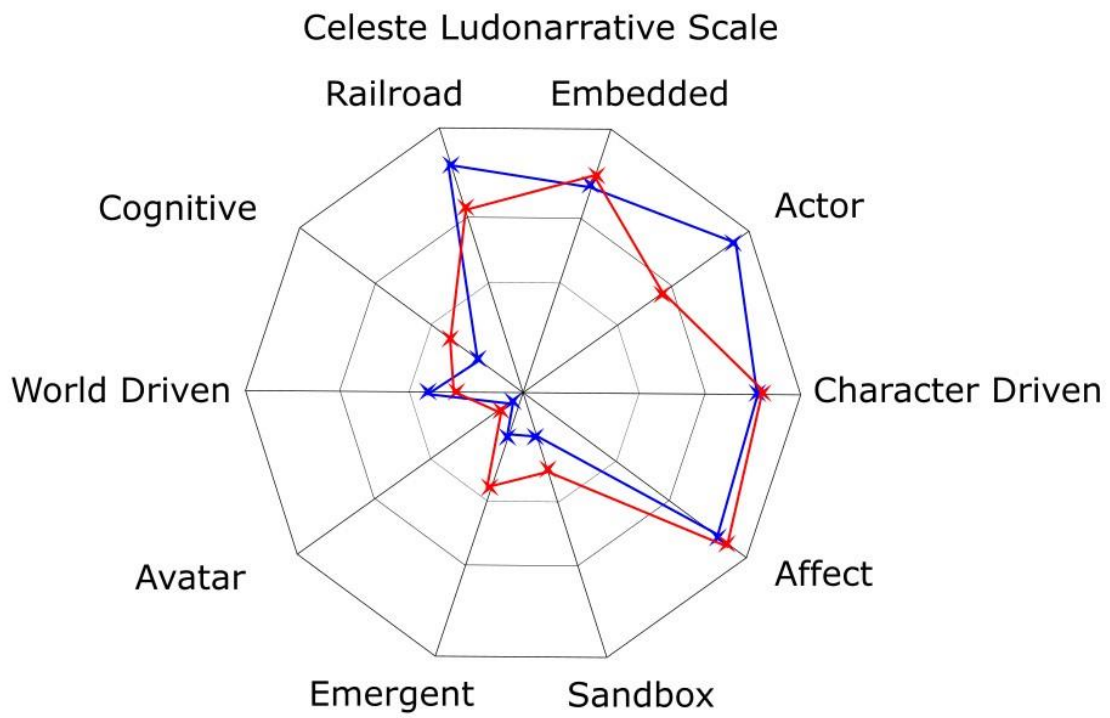


Figure 25: The Ludonarrative scale for Celeste assembled from the values of the categories in figure 24 to visually depict the overarching ludic and narrative elements of Hollow Knight and identify where there is and is not synthesis.

3.3 Case Study #3 – Brothers: A Tale of Two Sons (Brothers)

Developer: Hazelight Studios (formerly Starbreeze Studios at the time of release)

Publisher: 505 games

Year/Platform: 2013: Windows, Xbox 360, PlayStation 3. 2015: Xbox One, PlayStation 4, iOS. 2016: Android. 2019: Nintendo Switch.

Brothers: A Tale of Two Sons (*Brothers*), developed by Hazelight Studios in Sweden initially released to critical success in 2013 on a variety of platforms.

Brothers is a linear adventure puzzle game with a storybook aesthetic. The game is centred on two brothers whose mother recently drowned at sea and whose father is terminally ill. The game follows the brothers as they travel to a mythical tree to obtain a cure for their father's illness. Naiee is the younger brother in orange and Naia is the elder brother in blue. While there is spoken language in the world it does not represent any real language.¹⁸⁰ So, narrative is strongly reliant on imagery and contextually supported through gestures, and *tone* of voice.

¹⁸⁰ While the language spoken isn't a real language, the lead designer has noted that it is loosely based on a handful of Arabic languages because he drew on his heritage, and as such some of the words are recognisable. However, they are not intended to carry a linguistic meaning. Fares, *Brothers: A Tale of Two Sons*, PS4 – director's commentary.



Figure 26: The two brothers in game, Naia in blue clothes with brown hair on the left, and Naiee in orange clothes with blonde hair on the right.

Brothers is unusual in terms of its gameplay and controls. Generally, games are dedicated to an individual character with a single set of controls. *Brothers* deviates from this norm. The game has two PCs, both actors, Naiee and Naia, each controlled through separate halves of the player's controller. Naiee is given the right half of the controller and Naia the left. This means that each brother is allocated to a thumb stick to control movement, and an interaction button (respective trigger) to engage with aspects of the world.



Figure 27: Controller instructions provided in game for an Xbox 360 controller, colour coded to each brother, left and blue for Naia, right and orange for Naiee.

Brothers is an exemplar of a structured ludonarrative arc. The game is dedicated to two moments of ludonarrative harmony, the first an experience of loss, the second an experience of catharsis. In designing the game for specific moments of ludonarrative the game becomes an exercise in building player emotional investment and mechanical ability that allows for the narrative to have emotional and narrative impact supported by ludic components that create affective embodied responses in synthesis with the moment. The game's analysis is dedicated to three components of this overarching design. First, *Brothers* deployment of ludic designs to develop player's emotional investment in the brother's relationship, i.e., attachment. Secondly, the ludonarrative design that implements the removal of established game mechanics in conjunction with a narrative of loss to induce an intended affective response of loss and grief in the player, which is embodied through the player losing use of half of the controller inputs. Finally, the game's strategic re-deployment of a single mechanic at a crucial narrative moment creates catharsis for the PC and player.

In this first section we will detail how *Brothers* creates a strong ludic and narrative deployment of the Affect/Cognitive, Character Driven/World Driven and Railroad/Sandbox categories of the LAF through the embodied experience of using the controller, and the emotional investment the narrative and gameplay creates in the brother's relationship.

Brothers utilises most of its playtime to develop the brother's relationship and invest the player in this relationship. The game's narrative accomplishes some of this task, by outlining the brother's recent loss of their mother in conjunction with their desire to save their father. However, this acts primarily as motivation and a 'call to adventure' in a traditional narrative sense, and even this lacks language to accurately convey meaning. Instead, the player is left with a handful of short cutscenes where characters interact with one another and the player is left to deduce through tone, expression, and exaggerated gestures the general narrative. This places the onus for developing the brothers' relationship on the gameplay. The overall gameplay of *Brothers* is puzzle solving. Most of the puzzles require utilizing Naiee's smaller size and Naia's greater strength in conjunction to solve the puzzles and continue their journey to the tree of life.



Figure 28: A puzzle wherein the player must control the two brothers to carry a large pipe through confined spaces to a set of gears to clog them and stop them turning. A familiar challenge to anyone who has ever had to move furniture with someone else.

Notably, the only exception to this trend is crossing bodies of water. As a result of being unable to save his mother from drowning, and witnessing it, Naiee can't swim. As such, at every body of water the brothers are required to cross, Naia is required to carry Naiee. From a mechanical standpoint Naiee's movement control is disabled as he begins to drown, all his side of the controller can do is use the interaction button to hold on to Naia.

The process of solving these puzzles and adapting to controlling two characters at the same time is one that takes practise before the player is comfortably adapted to it, (a simple comparison would be to rub your head and pat your belly). By beginning with simple puzzles that only require a single action at a time, easily compartmentalised, the game begins building the player's capacity to naturally manage two sets of separate controls simultaneously. The designers have then introduced increasingly complex challenge to further refine the player's ability to manage both brothers until it becomes more natural. As a result, the design and implementation of these puzzles are intended to develop the player's emotional investment in the brothers. This is another variation of Wei and Durango's theorisation of puzzles as narrative vessels.¹⁸¹ Not only do the puzzles convey information about the brothers and their relationship with one another they also assist in developing the player's intended emotional investment in that relationship.

One interesting point is the position of the camera. The camera's perspective, hence, the player's, is always centred on the space between the brothers. This indicates that, for most of the game, the focus isn't on the brothers themselves, but their relationship, or literally the space between them. If the developers had deployed a different camera, such as one that detached into a split screen if the brothers spread too far apart or a permanent split screen, the player would have had a different experience, perhaps even an easier one. By restricting the camera's ability to expand, as well as its permanent central focus the perspective provided accomplishes two functions. Firstly, the camera naturally orientates itself so that each brother is on their respective side of the screen relative to the controls, which aids player's adaptation process. Secondly, the restricted camera forces the player to focus on managing the brothers which not only helps the player adapt to the controls but also means they invest their energy and focus into the brothers. Here *Brothers* demonstrates Arjoranta's theories about focalisation in games, wherein the perspective through which we view the game and the changes within that perspective convey meaning.¹⁸²

By controlling the camera, and hence the player's perspective, the lead designer was able to utilise his experience as a filmmaker to develop visual metaphors in conjunction with level

¹⁸¹ Wei, and Durango, "Exploring the Role of Narrative Puzzles in Game Storytelling," 10-11.

¹⁸² Arjoranta, "Narrative Tools for Games: Focalization, Granularity, and the Mode of Narration in Games," 700-705.

design. For example, in the gameplay section depicted below in figure 29 the two brothers find themselves at odds over whether to trust a woman they had recently saved from a ritual sacrifice. Naia has become enamoured with her, while Naiee is suspicious of her physical feats of leaping and climbing that hint at her nature as a shapeshifting spider. As we can see visually depicted through the level design of this section a rift has broken between the two brothers, with Naia following the shapeshifter, and Naiee walking alone. Strong visual metaphors of light, indicative of two symbolic paths each brother is respectively treading, and height, which can be simplified to the high road and low road, are deployed to convey information to the player. This section is an important intersection of level design, narrative, visuals, and themes. That is, the level design and visuals communicate information to the player and reinforce the narrative and themes being developed. This is a form of ludonarrative that incorporates not only the ludic and narrative elements, through the level design and story respectively, but also includes further aesthetic aspects of camera perspective and visual metaphors, in a similar fashion as theorised by Zonaga and Carter,¹⁸³ to extend the ludonarrative portrayed. The perspective and visuals are exemplification of the authorial potential inherent within the camera that Cole posited as an avenue for future research.¹⁸⁴ As a result, the treatment of the *Brothers*'s material offers an insight into how ludonarrative can be deployed in conjunction with other storytelling techniques and devices to serve the meaning making processes.

¹⁸³ Zonaga and Carter, "The role of Architecture in Constructing Gameworlds: Intertextual Allusions, Metaphorical Representations and Societal Ethics in *Dishonored*," 78-81.

¹⁸⁴ Cole, "Connecting player and character agency in videogames," 12.



Figure 29 The Brothers are divided over trusting the young woman, depicted through the level design and visual metaphors.

The next section details how *Brothers* further builds the Affect, Railroad, Embedded, and Character Driven elements of the LAF's categories through a broken toy mechanic that embodies a sense of loss in the game's controls and develops an empathetic response with Naiee.

Brothers is designed with the intended effect of investing the player in the brothers' relationship. The narrative payoff of this investment is in the death of Naia. After reaching the tree of life, with Naia poisoned by the shapeshifting spider, Naiee climbs the tree alone, collects the cure, and returns to Naia who has passed away. From the moment Naiee leaves Naia the player no longer has access to Naia's controls. After hours of adaption the absence of the secondary control set is intended to leave a feeling of loss and solitude in the player to help them empathize with Naiee's grief. This is an extension of Veale's theory of affective materiality¹⁸⁵ resulting in a variation occurring though the deployment of affect inducing interactive design aligning Naiee's grief with the player's embodied sense of separation/loneliness. By using most of the game to develop the player's abilities the game affords the opportunity to utilize that developed skillset as a mechanism for delivering an embodied experience of grief. By developing a pattern of play into which the player is

¹⁸⁵ Veale, "Gone Home, and the power of affective nostalgia," 657-658.

inculcated before disrupting that rhythm *Brothers* creates an avenue for mechanical inputs to produced embodied affective experiences that Isbister theorised about in more physical games¹⁸⁶ but on a smaller digital scale. In ludonarrative terms we have a ludic journey of the player developing and adapting to an unusual play rhythm and set of mechanics that the designers have established over the game's length to then rob the player of half of their ability to interact with the game. We can note the development of a hermeneutic strip¹⁸⁷ through this pattern of play that is then upset through disrupting that play rhythm. This will be further explored below. From a narrative perspective we have a story about two brothers confronting and overcoming obstacles together to save their father with one passing away leaving the other to push forward carrying their grief. There is a synthesised journey present that becomes ludonarrative harmony through confronting challenges and building attachment that transforms into a feeling of loss and grief. Through affective materiality and embodiment players experience an affective sense of loss that acts as a point of ludonarrative harmony developed over the course of the game.

We can see a further development of this linkage between mechanical game controls and grief in the section of gameplay dedicated to Naiee burying his brother. Throughout the game, unless they happen to be navigating a precarious walking space (such as a cliffs edge), the brothers are always capable of running. However, in the section of gameplay dedicated to Naia's burial, Naiee walks slowly, which in turn makes the controls feel heavy in stark comparison to the rest of the game where the controls feel light and responsive. This juxtaposition between the feel of the controls further develops the emotions the player is intended to feel through embodiment, adding another layer to the ludonarrative experienced in this section of gameplay. Notably, many games would have made this section a cutscene, *Brothers* does not. This is not because *Brothers* has no cutscenes or points of non-interactivity, in fact it has several of those instances; however, it is because the lead designer wanted the player to experience this moment through gameplay.¹⁸⁸ By making this a gameplay section the designer has avoided a separation of narrative and gameplay in a crucial moment that could have led to a form of ludonarrative irrelevance, as

¹⁸⁶ Isbister, *How Games Move Us: Emotion by Design*.

¹⁸⁷ Roth, Nuenen, and Koenitz, "Ludonarrative Hermeneutics: A Way Out and the Narrative Paradox," 6-7.

¹⁸⁸ Fares, *Brothers A Tales of Two Sons*, Director's commentary.

theorised by Weimin,¹⁸⁹ or a disconnect for the player in the middle of an emotionally charged moment. The game keeps the player in the moment and builds toward a ludonarratively harmonic moment. By tying together controls and player investment in the brothers with the narrative of the game, *Brothers* accomplishes a cohesive ludonarratively harmonic journey.

The final section will examine how a redeployment of a ludic component for strong narrative and affective impact *Brothers* demonstrates strong affect, character driven, actor, embedded, and railroad elements of the LAF.

While we have discussed how the game builds a ludonarrative about attachment that proceeds into loss, we still have not addressed catharsis. After burying his brother Naiee is flown back to his village where a storm is raging at night. He is left on the beach and the player takes control to begin moving Naiee, cure in hand, back to his ailing father. The first obstacle encountered is a body of water that needs to be crossed. Knowing he cannot swim Naiee falls to his knees defeated before being comforted by a spectre of his departed mother encouraging him. Control is returned to the player. When trying to cross the water Naiee begins to drown the same as before, without his brother to carry him across the water. However, while Naiee is drowning audio of Naia calling out to Naiee is played. This, in conjunction with none of Naiee's controls working, encourages the player to try using Naia's half of the controller again. By using Naia's interaction button, the same previously used to carry Naiee across the water, Naiee begins to swim. By taking away the player's controls the designers afforded the opportunity to experience loss and loneliness. But, by returning the controls to the player, to allow Naiee to accomplish a task alone he previously could not, the game affords the player an opportunity to experience catharsis through ludonarrative. By synthesising the climax of the narrative, Naiee's growth, with an innovative manipulation of a simple set of player controls the game creates emotionally powerful metaphors through ludic components that are harmonic with narrative. As such *Brothers* is an exemplar of a ludonarratively harmonic arc across the entire game with two singular moments of ludonarrative being the objective of the game's design.¹⁹⁰ This is an exemplification of

¹⁸⁹ Weimin, *A Multimodal Discourse Analysis of Video Games: A Ludonarrative Model*, 268-269.

¹⁹⁰ Fares, *Brothers A Tales of Two Sons*, Director's commentary. Fares does not speak about ludonarrativity directly, but does indicate that this is 'the moment' for this game

Koenitz's framework, wherein the player is provided a gameplay feedback loop that becomes established and normalised through the controls.¹⁹¹ That is the protostory, the gameplay systems that provide the potential for narrative, are instanced through the player's engagement with it,¹⁹² resulting in a story about two brothers working together. This in turn establishes player expectations about how they should engage with the system, and how the system will respond to their engagement. By disrupting that sequence in the final sections of the game the game breaks its established convention for interactivity and instead affords a new process to create meaning. Essentially, *Brothers* uses its own system to develop player expectations with the intent of breaking them to establish new meaning. This is an exemplification of Schleiner's broken toy mechanic.¹⁹³ By establishing this breaking and reformation of mechanics *Brothers* has created a gameplay loop for the player that provides the opportunity to experience loss and grief, before receiving a moment of catharsis in a ludonarratively harmonic way.

The ludonarrative analysed so far has focused on the development of the brothers' relationship, grief, and catharsis. However, while the game's narrative is a simple one, through ludonarrative analysis its polysemic nature becomes apparent. For example, this ludonarrative is also about Naiee's growth, which can be seen in the two final obstacles of the game that are also two of the first. Running along the same path both the brothers took at the start of the game Naiee encounters the two obstacles that previously required both brothers to overcome, namely a lever that only Naia was strong enough to pull, and a jump that Naiee needed Naia to boost him over. However, by using Naia's interaction button, as above with crossing the water, Naiee can, with difficulty, accomplish these tasks alone now. In so doing *Brothers* invites a direct comparison between these two sections and a recognition of Naiee's growth and development. As such, *Brothers* presents itself as a bildungsroman for Naiee, while also being a story about brotherhood, adversity, loss, and grief. For Naiee's growth the controller again acts as a metaphor for a singular half growing into a whole, which is the ludic component of this ludonarrative harmony. This interpretation of two halves growing into a single is further supported through the qualities of the brothers, one is strong and brave while the other is cunning and using their small size

¹⁹¹ Koenitz, "Towards a Specific Theory of Interactive Digital Narrative," 99.

¹⁹² Koenitz, "Towards a Specific Theory of Interactive Digital Narrative," 99.

¹⁹³ Schleiner. "The broken toy tactic: Clockwork worlds and activist games."

to their advantage, one is often depicted in shadow while the other is in the light, and their colour schemes and design are in opposition, blue and orange. These interpretations lead to *Brothers* being an exemplification of Roth et al.'s extended version¹⁹⁴ of Koenitz's model.¹⁹⁵ That is, by allowing for multiple interpretations the game invites players to reflect on their interaction with the game and in turn on the narrative the game presents, in a game studies appropriate version of reader response theory.

By combining a simple but polysemic narrative with a simple control scheme, that builds player skill through adaptability and is representative of two individuals working together, *Brothers* develops a clear ludonarrative across its playtime. The ludonarrative presented can be broken down into three sections: attachment, grief, and catharsis, with each section informing the proceeding section. *Brothers* develops its ludonarrative through the adaptation to unusual gameplay mechanics and controls, before removing them to create an affective response of grief, and then returning them to create a cathartic resolution to the narrative and play experience. In mapping the ludic control scheme to the narrative, the designers have provided the opportunity for players to experience an embodied emotional response through the controls intended to mirror the PCs emotional state.

¹⁹⁴ Roth, Nuenen, and Koenitz, "Ludonarrative Hermeneutics: *A Way Out* and the Narrative Paradox," 6-7

¹⁹⁵ Koenitz, "Towards a Specific Theory of Interactive Digital Narrative," 99.

Brothers Ludic/Narrative Categories

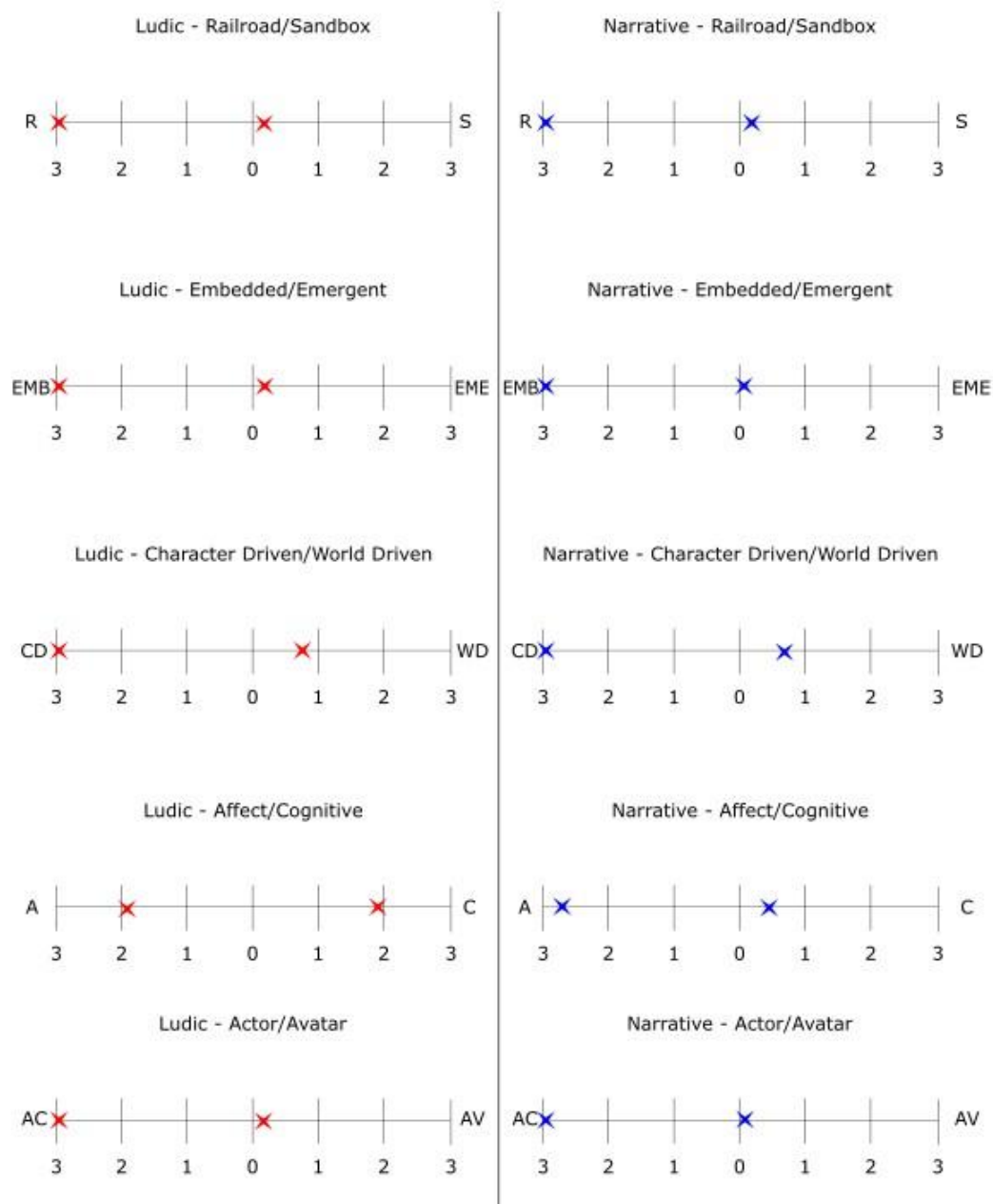


Figure 30: The assigned values for Brothers' Ludic and Narrative values within each category of the LAF. We can observe a strong harmony present across the majority of the categories leading to a ludonarratively harmonic design and play experience.

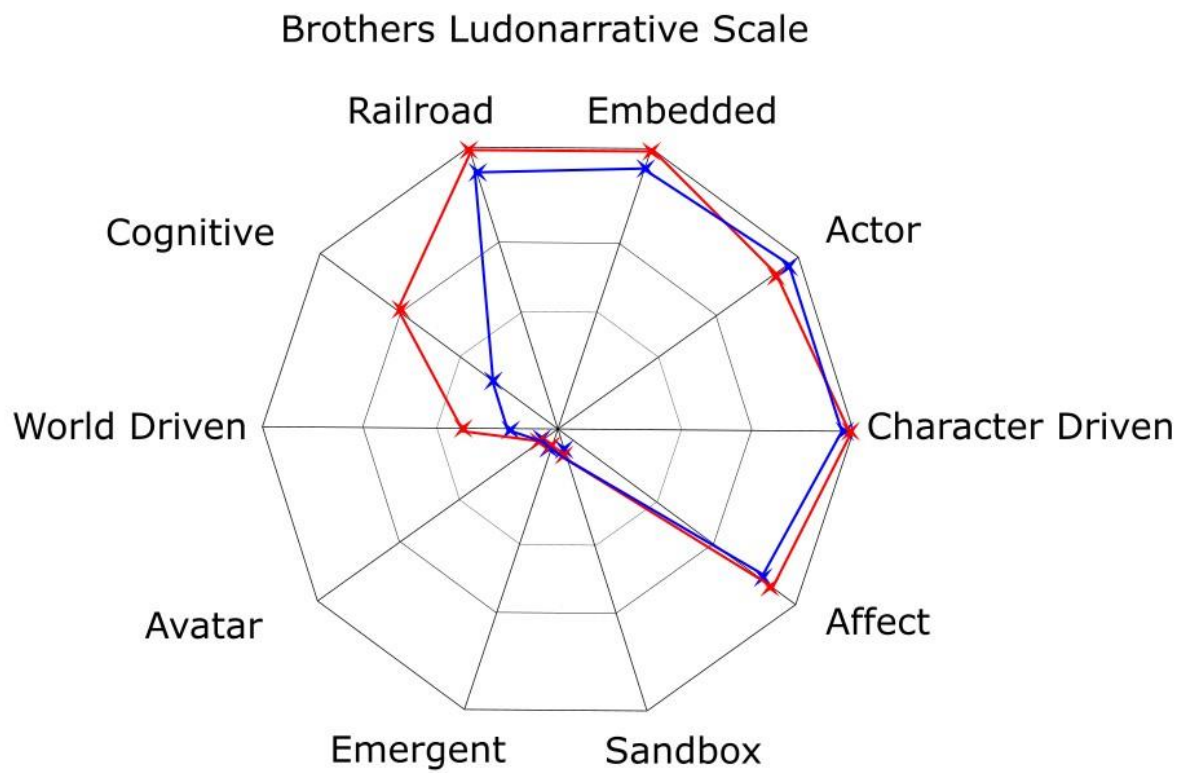


Figure 31: The Ludonarrative scale for Brothers assembled from the values of the categories in figure 30 to visually depict the overarching ludic and narrative elements of Hollow Knight and identify where there is and is not synthesis.

Conclusion

This thesis has sought to outline how ludonarrative is one of the most useful artistic, sense-making, and engaging aspects of a game. This thesis has also sought to demonstrate how we as scholars and designers might better equip ourselves to analyse, interpret, design, and build for high quality ludonarrativity. The ludonarrative analytic framework (LAF) and ludonarrative scale provide an original method to understand, qualify and communicate the effective ludonarrativity within a game. By building on the existing disciplinary analytic frameworks of spatiality, temporality, narrative structures, user experience, user interface, theorisation of ludonarrative, affect, embodiment, perspective, and player character this research furthers investigation into how games fulfill their storytelling potential.

Additionally, the thesis applied the LAF and ludonarrative scale to three games as case studies to accomplish the thesis' three main aims. Firstly, the thesis demonstrates the application and efficacy of the LAF for analysing a game's ludonarrativity. Secondly, through the implementation of the LAF this study has shown the aesthetic and sense making value of the ludonarrative in *Brothers*, *Hollow Knight*, and *Celeste*. Finally, this research project contributes to a broader attempt to [re]centre the focus on the artistic value of games on their unique capacity as storytelling media.

While game studies has a focus on the social, economic, and political value and impacts of games, there is still a significant amount of investigation required into the potential semiotic and aesthetic capacity of games as artistic artefacts. Though the focus of this thesis has been the advancement of such investigation and the provision of a toolset to aid future scholars and designers it remains a single step in a much larger quest, if you will indulge the metaphor.

The impact of this thesis can be broken into two parts. Firstly, in a more global context it provides the games studies discipline with a framework and approach to understanding the ludonarrative and storytelling capacity in games. This can lead to other research that further progresses the recognition of the artistic capacity of games, as well as the design of other frameworks for understanding other elements of games and how they interrelate to ludonarrative. It also provides game designers with a way to map their game's desired form of ludonarrative and cross check relevant game elements as the design process progresses. Secondly, on a more local scale, this thesis contributes to literature that advocates the value

of games beyond the purely economic at a time in Australia when the federal and state governments are beginning to recognise the value of the video game industry and designing incentives that favour AAA developers. In creating research that focuses on the artistic value of indie games, one of which was made in Australia, this thesis hopes to serve as a reminder of the necessity of funding and supporting those grassroots endeavours that really do change the game.

There are many possibilities for future study. Application of the LAF and ludonarrative scale to other games to investigate consistency of usage. The inverse of the case studies approach could be implemented to investigate and develop a list of ludonarrative concepts and design techniques for use in scholarship and design. As mentioned within the methodology, while it was cut for this study, interviews ascertaining designer perspectives on ludonarrative design would be a useful expansion of scholarly understanding of the design process and thinking behind any ludonarrativity present in games. There is an interesting space to be investigated about MMO's capacity for storytelling and the ways they might deploy ludonarrativity with considerations of their community driven nature. Ludonarrative design could also see application to games for social good and design for audience segmentation, which could see use in areas such as public communication on climate change. There is an interesting space for research into the cross-cultural and linguistic story telling capacity of games through ludonarrativity. Additionally, while this thesis investigated video games as case studies there is space for studying the application of ludonarrative to real world games, such as Tabletop role playing games and narrative as lived collective experiences. Finally, investigation into the empathy increasing value of games and game experience could be a rich area of research, with comparisons to be made in studies done between participants views before and after engagement with ludonarratively dissonant or irrelevant games, and ludonarratively harmonic games.

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