

**ISTANBUL TECHNICAL UNIVERSITY ★ GRADUATE SCHOOL**

**DESIGNING FOR LUDONARRATIVE HARMONY: A FRAMEWORK-  
BASED EVALUATION OF INTERACTIVE STORYTELLING**

**M.Sc. THESIS**

**Cem ÇELİK**

**Department of Game and Interaction Technologies**

**Game and Interaction Technologies Programme**

**OCTOBER 2025**



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**Thesis Advisor: Assoc. Prof. Dr. Ayşegül AKÇAY KAVAKOĞLU**

**OCTOBER 2025**



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**LUDONARATİF UYUM İÇİN TASARIM: ETKİLEŞİMLİ ANLATININ  
SİSTEMATİK BİR ÇERÇEVE İLE DEĞERLENDİRİLMESİ**

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**EKİM 2025**



Cem Çelik, a M.Sc. student of İTÜ Graduate School student ID 529221004, successfully defended the thesis/dissertation entitled “A SYSTEMIC APPROACH TO LUDONARRATIVE HARMONY: METHODS FOR ALIGNING INTERACTIVE GAMEPLAY AND STORYTELLING”, which he prepared after fulfilling the requirements specified in the associated legislations, before the jury whose signatures are below.

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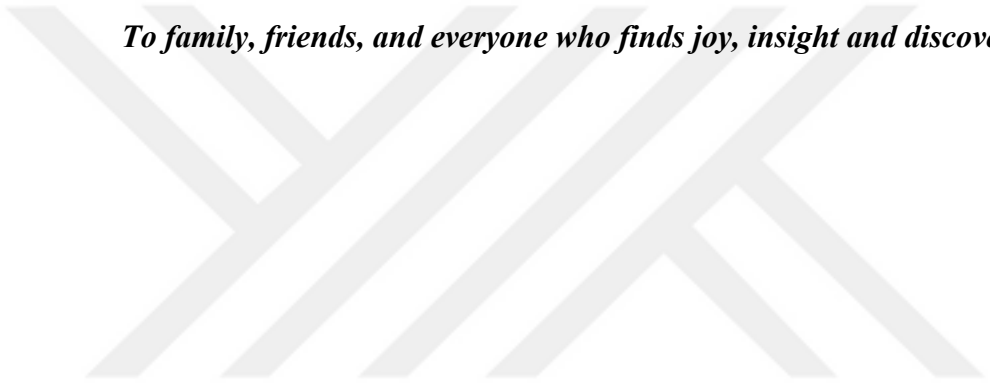
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*To family, friends, and everyone who finds joy, insight and discovery in play.*



## FOREWORD

The work that follows emerged from years spent moving between systems and stories. It began with the curiosity of a player, developed through the discipline of a designer, and eventually became a research effort to understand the overlap between the heart and the mind. What started as a simple question grew into a sustained dialogue between practice and inquiry, shaped by the people who taught me to approach both stories and systems with patience and intention.

This thesis was written during a period marked by its own shifts, moments that required steadiness, clarity, and perspective. The influence of the people who stood with me, and those whose guidance continues to shape me even in their absence, is present in every part of this work.

I would first like to express my deepest love and gratitude to my family. First and foremost, to my parents: my late father, Haşmet, for his unwavering belief and support in every goal and passion I have pursued, and my mother, Funda, for her unmatched love and patience throughout my life.

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September 2025

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(Game Designer)



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## **ABBREVIATIONS**

|              |                                                             |
|--------------|-------------------------------------------------------------|
| <b>AAA</b>   | : Triple-A (term for high-budget, mainstream games)         |
| <b>AI</b>    | : Artificial Intelligence                                   |
| <b>ARG</b>   | : Alternate Reality Game                                    |
| <b>FRACH</b> | : Framework focusing on immersion, collaboration, and story |
| <b>GFI</b>   | : Goals–Feedback–Interpretation                             |
| <b>HCI</b>   | : Human-Computer Interaction                                |
| <b>HEP</b>   | : Heuristics for Evaluating Playability                     |
| <b>HUD</b>   | : Heads-Up Display                                          |
| <b>IRB</b>   | : Institutional Review Board                                |
| <b>LAF</b>   | : Ludonarrative Analytical Framework                        |
| <b>LARP</b>  | : Live Action Role-Playing (Game)                           |
| <b>LHEF</b>  | : Ludonarrative Harmony Evaluation Framework                |
| <b>MDA</b>   | : Mechanics–Dynamics–Aesthetics                             |
| <b>MTG</b>   | : Magic: The Gathering                                      |
| <b>NDA</b>   | : Non-Disclosure Agreement                                  |
| <b>NPC</b>   | : Non-Player Character                                      |
| <b>PLAY</b>  | : Playability Heuristics (Pinelle et al., 2008)             |
| <b>RPG</b>   | : Role-Playing Game                                         |
| <b>SGDA</b>  | : Serious Game Design Assessment Framework                  |
| <b>TTRPG</b> | : Tabletop Role-Playing Game                                |
| <b>UI</b>    | : User Interface                                            |
| <b>UX</b>    | : User Experience                                           |
| <b>VFX</b>   | : Visual Effects                                            |
| <b>VO</b>    | : Voice-Over (recorded spoken dialogue in a game)           |
| <b>VR</b>    | : Virtual Reality                                           |



## **SYMBOLS**

→ : Leads to or implies







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## **DESIGNING FOR LUDONARRATIVE HARMONY: A FRAMEWORK-BASED EVALUATION OF INTERACTIVE STORYTELLING**

### **SUMMARY**

This thesis examines the conditions that lead to ludonarrative harmony, a state in which gameplay systems and narrative structures work together to enhance the player's experience through meaningful integration of interactivity and storytelling. The concept of ludonarrative harmony has developed alongside ongoing critiques of ludonarrative dissonance, yet much of the scholarly discourse has focused on identifying problematic cases rather than offering constructive, repeatable methods to achieve coherent experiences. To fill this gap, the thesis proposes a complete, structured evaluation framework designed both for analyzing existing works and for supporting the creation of new interactive stories.

The study relies on an interdisciplinary literature review spanning game studies, human-computer interaction (HCI), narratology, and design theory, establishing the conceptual background necessary for understanding how narrative meaning can emerge from systems and player action. Building on this foundation, the thesis introduces a six-pillar model for measuring ludonarrative harmony. These six axes examine how different components of a game work together to align narrative and gameplay: Mechanic-Theme Alignment, Feedback-Narrative Consistency, Player Role Fidelity, Narrative Impact of Choice, Emergent-Embedded Harmony, and Progression-Structure Synchronization. Each axis captures a distinct aspect of narrative-mechanic interaction. For example, Mechanic-Theme Alignment evaluates whether core gameplay verbs reflect the work's thematic intentions, while Feedback-Narrative Consistency considers how visual, audio, and systemic feedback reinforce the narrative tone at key moments. Other axes highlight the player's enacted role, the narrative consequences of choice, the balance between emergent and authored storytelling, and the relationship between story structure and in-game progression.

To test the model's utility and robustness, the framework was applied across multiple case studies involving both digital and analog formats. Digital examples include *Before Your Eyes*, *Outer Wilds*, *Dead Space*, *BioShock*, and *Marvel's Spider-Man*, each offering different systems, narrative ambitions, and player experience goals. Analog cases such as tabletop role-playing games, escape rooms, and the collectible card game *Magic: The Gathering* extend the inquiry beyond screens and highlight how narrative-mechanic alignment operates across diverse formats. These cases were selected precisely because they feature distinct mechanics and narrative strategies, enabling meaningful cross-format comparison and demonstrating the flexibility of the framework.

Results indicate that ludonarrative harmony is not merely an aspirational ideal but a tangible design outcome that can be systematically achieved when narrative intent is built directly into mechanics, feedback systems, incentives, and player roles. Games tend to deliver more emotionally resonant and thematically coherent experiences when their rules, progression structures, and feedback channels express the same meanings that the narrative seeks to convey. The proposed framework proved effective both as a tool for critical analysis and as a practical design aid, offering developers and researchers a structured method to evaluate, refine, and intentionally pursue narrative coherence.

In conclusion, this thesis presents a systematic and pragmatic approach to integrating narrative and gameplay, transforming ludonarrative harmony from a retrospective critical lens into an actionable design goal. It provides a replicable foundation for assessing narrative–mechanic alignment, supports cross-media comparison, and offers a methodological contribution that can guide future research, development practice, and critical discourse on interactive storytelling.



## **UDONARATİF UYUM İÇİN TASARIM: ETKİLEŞİMLİ ANLATININ SİSTEMATİK BİR ÇERÇEVE İLE DEĞERLENDİRİLMESİ**

### **ÖZET**

Bu tez, ludonaratif uyum olarak adlandırılan ve oyun mekaniği ile anlatı yapılarının birbirini destekleyecek şekilde bütünleştiği bir etkileşim modelini incelemektedir. Ludonaratif uyum, oyuncunun deneyiminin hem anlamsal hem de yapısal açıdan tutarlı ve destekli bir biçimde zenginleştiği özel bir durumu tanımlar. Literatürde uzun süredir tartışılan ludonaratif uyumsuzluk kavramı, hikâye ile oynanış arasında çatışmaların ortaya çıktığı durumları açıklamak için sıkça kullanılmış olsa da, bu tartışmalar çoğunlukla sorunların teşhisi ile sınırlı kalmıştır. Buna karşın, uyumun hangi tasarım, yapısal ve deneyimsel koşullar altında doğduğu; nasıl sürekli ve güvenilir biçimde üretilebileceği; ayrıca nasıl ölçülüp değerlendirilebileceği üzerine kapsamlı yöntemler neredeyse hiç geliştirilmemiştir. Bu çalışma, bu eksikliği gidermek amacıyla, hem mevcut oyunları değerlendirmek hem de yeni interaktif anlatılar tasarlamak için kullanılabilecek yapılandırılmış, kapsamlı ve sistematik bir çerçeve ortaya koymaktadır.

Araştırma, oyun çalışmaları, insan–bilgisayar etkileşimi (HCI), anlatıbilim ve tasarım teorisi gibi farklı disiplinlerden yararlanarak sağlam bir kuramsal arka plan oluşturur. Bu disiplinlerarası yaklaşım, ludonaratif uyumu açıklamak için yalnızca tek bir alanın bakış açısına bağlı kalmak yerine, oyuncu psikolojisinden sistem tasarımına, dramatik yapıdan kullanıcı arayüzü geri bildirimlerine kadar geniş bir yelpazeyi bütüncül biçimde değerlendirmeyi mümkün kılar. Bu teorik temel üzerine inşa edilen altı eksenli ölçüm modeli, oyun mekaniği ile anlatı arasındaki ilişkinin farklı boyutlarını ayrıntılı biçimde incelemeyi hedefler.

Modelin ilk eksenini olan Mekanik–Tema Uyumu, oyunun sunduğu eylemlerin, mekaniğin doğasına yerleşmiş davranışların ve oyuncuya verilen araçların tematik bütünlükle ne ölçüde ilişkili olduğunu değerlendirir. İkinci eksen, Geri Bildirim–Anlatı Tutarlılığı, görsel efektlerden kullanıcı arayüzüne, ses tasarımından dokunsal geri bildirimlere kadar tüm geri bildirim çeşitlerinin anlatsal ton, atmosfer ve dramatik etkiyle uyumunu inceler. Üçüncü eksen olan Oyuncu Rol Sadakati, oyuncunun oyundaki kararlarının, davranışlarının ve etkileşim biçimlerinin karakter, bağlam ve hikâyenin sunduğu rol çerçevesiyle ne kadar paralel ilerlediğini sorgular. Dördüncü eksen, Seçimin Anlatsal Etkisi, oyuncunun tercihlerinin hikâyeyi nasıl şekillendirdiğini, ilerlettiğini ve sahnelerin duygusal ağırlığını nasıl etkilediğini ölçer. Beşinci eksen olan Ortaya Çıkan–Gömülü Uyum, hem oyun sistemlerinin kendiliğinden doğurduğu beklenmedik anlatsal anları hem de tasarlanmış anlatı ile oyun mekaniğinin etkileşiminden doğan uyumunu ele alır. Son olarak İlerleme–Yapı Senkronizasyonu, oyun ilerleyiş ritmi ile anlatsal yapının uyumunu değerlendirerek, temponun ve dramatik yapının sistemsal akışla ne kadar örtüştüğünü analiz eder.

Bu modelin geçerliliğini test etmek amacıyla tez, hem dijital hem de analog etkileşim biçimlerini kapsayan geniş bir örneklem üzerinden analiz yürütmüştür. Dijital vakalar arasında Before Your Eyes, Outer Wilds, Dead Space, BioShock ve Marvel's Spider-Man gibi yapısal, tematik ve mekansal açıdan birbirinden farklı oyunlar bulunmaktadır. Bu oyunlar, etkileşim yoğunlukları, anlatı yöntemleri, oyuncu rolü tanımları ve mekanik modelleri açısından çeşitlilik taşıdığı için çerçevenin esnekliğini sınamak adına ideal örnekler sunmuştur. Analog örnekler ise masaüstü rol yapma oyunları, kaçış odaları ve Magic: The Gathering gibi koleksiyon kart oyunlarıdır. Bu örnekler, dijital olmayan ortamlarda anlatı-mekanik ilişkilerinin nasıl kurulduğunu görmek bakımından önemlidir ve çerçevenin medya türünden bağımsız olarak uygulanabilir olduğunu göstermektedir.

Her vaka çalışması, modeldeki altı eksen üzerinden değerlendirilmiş ve sahne bazlı analizlerle desteklenmiştir. Kullanılan metodoloji, her eksen için beş düzeyli niteliksel bir Likert ölçeği ile uyumun dereceli biçimde ölçülmesini sağlar: 1 = “Uyumsuzluk”, 2 = “Kısmi Uyumsuzluk”, 3 = “Nötr/Orta Düzey”, 4 = “Kısmi Uyum”, 5 = “Tam Uyum”. Bu ölçek, hem nicel hem de nitel değerlendirmeyi bir araya getirerek oyunların hangi yönlerde güçlü, hangi yönlerde zayıf olduğunu açık biçimde ortaya koyar. Ölçeklendirme sürecinin somut kriterlere dayanması, analizlerin hem tutarlı hem de tekrarlanabilir olmasını sağlar.

Bu çerçeve aynı zamanda oyun üretim süreçlerinde disiplinler arası iletişimi güçlendiren pratik bir araç niteliği de taşımaktadır. Oyun tasarım ekipleri genellikle anlatı, mekanik tasarım, seviye tasarımı ve ses tasarımı gibi ayrılmış alanlardan oluştuğu için, bu alanların ortak bir değerlendirme diline sahip olması önemlidir. Modelin altı eksen, üretim sırasında ortaya çıkan uyumsuzlukların erken dönemde tespit edilmesine, prototip aşamasında yapılan denemelerin daha tutarlı şekilde değerlendirilmesine ve geliştirme sürecinde alınan tasarım kararlarının tematik hedeflerle uyumlu olup olmadığının sistematik biçimde gözden geçirilmesine yardımcı olur. Bu yönüyle çerçeve yalnızca analiz için değil, aynı zamanda tasarım sürecinde yönlendirici bir karar mekanizması olarak da işlev görür.

Çalışmadan elde edilen bulgular, ludonaratif uyumun yalnızca teorik bir kavram olmadığını; doğru tasarım tercihleri, bütüncül planlama ve sistem-anlatı ilişkisi üzerine bilinçli kararlar ile pratikte gerçekleştirilebilen bir hedef olduğunu göstermektedir. Mekaniklerin, geri bildirim kanallarının ve oyuncu etkileşim biçimlerinin anlatısal hedeflerle örtüşmesi, oyunun tematik bütünlüğünü güçlendirmekte, dramatik etkisini artırmakta ve oyuncu deneyimini duygusal açıdan derinleştirmektedir. Tezde önerilen çerçeve, hem araştırmacılar hem de oyun tasarımcıları için yapısal bir rehber niteliği taşımakta; deneyimi etkileyen bileşenlerin nasıl birbirine bağlanacağını sistematik biçimde ortaya koymaktadır.

Ayrıca çerçeve, farklı türlerdeki oyunlarda hangi eksenlerin birbirini güçlendirdiğini, hangi eksenlerin uyumu kırılğan hale getirdiğini görünür kılmakta ve oyun tasarımı süreçlerinde hangi bileşenlerin daha fazla dikkat gerektirdiğine dair somut ipuçları sunmaktadır. Karşılaştırmalı vaka analizi yaklaşımı, oyun tasarımındaki uyum örüntülerinin geniş bir bağlam içinde nasıl şekillendiğini anlamaya katkı sağlamaktadır. Elde edilen analizler, çerçevenin yalnızca teorik bir öneri olmadığını; gerçek üretim, geliştirme ve çözümleme süreçlerinde kullanılabilecek pratik bir araç olduğunu da göstermektedir.

Ayrıca model, ticari oyun geliştirme süreçlerinde de kullanılabilecek niteliktedir. Büyük ve çok katmanlı projelerde anlatı ve mekanik unsurların birbiriyle uyumunu



korumak önemli bir tasarım zorluğudur. Önerilen çerçeve, bu tür projelerde ekiplerin tasarım kararlarını ortak bir referansla değerlendirmesine, ortaya çıkan deneyimin tematik ve yapısal bütünlüğünü test etmesine ve oyunun geliştirme döngüsü ilerledikçe bu bütünlüğün korunup korunmadığını izlemesine yardımcı olabilir. Bu yönüyle çerçeve, yalnızca akademik bir araç olmakla kalmayıp, profesyonel oyun geliştirme ortamlarında da uygulanabilir bir yönetim ve değerlendirme sistemi sunmaktadır.

Sonuç olarak bu tez, oyun tasarımı ile anlatı arasındaki ilişkiyi hem kuramsal hem de uygulamalı düzeyde değerlendirmeye olanak sağlayan kapsamlı bir yöntem sunmaktadır. Çerçevenin farklı tür, format ve tasarım yaklaşımlarına uyarlanabilir olması, hem akademik araştırmalar hem de profesyonel oyun geliştirme için değerli bir araç olduğunu kanıtlamaktadır. Ludonaratif uyumu anlamak ve güçlendirmek isteyen araştırmacılar, tasarımcılar ve eğitimciler için sürdürülebilir, esnek ve derinlikli bir temel oluşturarak alanda önemli bir metodolojik boşluğu doldurmaktadır.





# 1. INTRODUCTION

## 1.1 Background and Setting

Games' interactive quality creates a dynamic tension: the player's actions are not only seen but also performed, therefore inextricably linking them with the developing story. Unlike literature or cinema, where the audience is a passive consumer of meaning, games reorient the player as both observer and agent. This basic change questions conventional storytelling strategies and demands innovative narrative building techniques able to fit interactivity and, ideally, harmonize with it.

A common criticism in recent years has been the conflict between what a game says and what it expects the player to do as video games have grown into a genuine narrative medium. Originally used to describe the conflict between a game's narrative goals and its gameplay mechanics, the phrase ludonarrative dissonance has since come to dominate game studies. Although the phenomenon is well known, particularly from a design-oriented viewpoint its causes and remedies stay underdefined. What allows some games to escape this dissonance and reach ludonarrative harmony? What common characteristics or systems let interactivity support narrative instead of upsetting it?

Starting from the premise that the solution is found in the design of systems, feedback loops, player agency, and mechanic-narrative alignment and not only in writing or storyboarding. This paper therefore investigates the tools, frameworks, and semiotic devices by which interactivity may be a coherent narrative tool—one that improves narrative immersion rather than contradicts it.

We refer to this alignment as ludonarrative harmony. Chapter 2 formalizes the term, and Chapters 3 and 4 operationalize it through a structured evaluation procedure and a practical worksheet so that the concept can be applied consistently across cases. In narrative-heavy games, perceived quality hinges not only on plot and characterization, but on whether mechanics, feedback, and the player's role actually enact that plot in play. When those layers pull together, players report stronger

immersion, clearer stakes, and fewer moments that break tone. This matters because story-first genres are judged as much by felt coherence in moment-to-moment play as by the script itself. Later chapters will connect this design concern to reception signals drawn from public discourse.

## **1.2 Problem Statement**

This thesis responds to a twofold problem within the field of game narrative design. The first issue concerns the absence of a structured and widely accepted way to evaluate how a game's narrative intent is reinforced or weakened by its gameplay systems. Current scholarship reveals three clear shortcomings: (1) an operational-method gap, meaning there is no published or replicable codebook that defines units of analysis, coding steps, or a basic reliability calibration for qualitative work in this domain; (2) a usability gap, since existing analytical models are often expert focused and do not offer accessible guidance or clear rubrics for consistent use by practitioners with varying levels of experience; and (3) a validation gap, because there is no lightweight approach that compares ludonarrative findings with publicly available player or critic data, even though such artifact-based triangulation could be performed without formal user studies. This thesis addresses these shortcomings through the introduction of a close-playing protocol, a codebook, and a guided worksheet that together provide structure without demanding extensive methodological overhaul.

The second issue concerns the limited scope of existing discussions on interactivity as a narrative device. Although interactivity plays a role across digital games, tabletop systems, physical experiences, and other forms of play, most academic work on ludonarrative questions either remains overly abstract or concentrates narrowly on digital media. As a result, both researchers and designers lack a clear framework for understanding and achieving alignment between narrative intent and mechanical design across different formats. By reframing ludonarrative harmony as a design space defined by deliberate interaction patterns rather than a simple measure of success or failure, this thesis works to bridge that gap. The goal is to offer a systematic way to understand and cultivate ludonarrative harmony as a reproducible design outcome across a broad range of genres and platforms.

### 1.3 Study Question

This thesis's main research question is: How can interactivity evolve into a consistent narrative tool, and what design concepts guide its fit with narrative structure?

The research question can be further expanded upon via the following questions

Method: How can ludonarrative harmony be operationalized into a replicable qualitative procedure, using a close-playing protocol and a codebook, without human-subjects research?

Framework: How can LHEF be made junior-friendly through guiding questions, a clear rubric, and a worked example, while retaining expert nuance?

Reception and impact: To what extent do public player and critic accounts of story–gameplay fit align with LHEF profiles across cases?

Sub-questions.

Which axis-level prompts reduce ambiguity for novice evaluators?

Can a small, coded sample of public reviews surface consistent harmony cues, such as agency, role fidelity, and feedback tone, per case?

This formulation lets practical use as well as theoretical study. While eventually trying to suggest a methodical approach to interactive storytelling, it opens the door to case study research across several formats, video games, tabletop RPGs, spatial puzzles.

### 1.4 Limits and Scope

Grounded in design analysis, semiotics, and comparative critique, this paper is a qualitative study. It excludes statistical modeling, behavioral data, or empirical user testing. Existing literature on game design and narrative theory as well as case studies—chosen for their relevance in conversation about ludonarrative harmony and dissonance—are the main sources.

Though the phrase "ludonarrative" comes from digital game studies, the breadth of this thesis covers analog formats—e.g., tabletop roleplaying games, physical game structures—insofar as they reveal ideas of mechanic-narrative alignment. The thesis intends to draw more universal insights on how interactivity can convey narrative meaning by looking beyond the screen.

The suggested framework is interpretive and exploratory in character. It is meant to be a design-oriented lens through which theorists and developers may investigate the interactions between system, structure, and narrative rather than a strict evaluative tool. Focus. Narrative-heavy digital games on PC and console, with occasional analog comparisons used only to transfer theory.

Methods. Qualitative close playing and documentary analysis; no new experiments or human subjects.

Data. Publicly available texts such as developer materials and press kits, plus small samples of player and critic reviews for triangulation.

Boundaries. Harmony is assessed along LHEF axes. Commercial success is not a metric here; reception is discussed as context.

## **1.5 Methodological Approach**

Combining formal analysis with interpretive critique, this thesis uses a design-theoretical methodology. It finds common design patterns and symbolic correspondences between mechanics and story by means of theoretical literature and practitioner knowledge. A set of comparative case studies—chosen to emphasize both successful and problematic efforts at ludonarrative integration—drives the analysis forward.

The aims to deliver concrete components that anchor the approach. First, a close-playing protocol defines focused passes, light capture, and units of analysis for transparent evidence collection (see 3.2). Second, a qualitative codebook links the framework's axes to observable codes and includes a simple calibration using public texts (see 3.5). Third, a practical LHEF worksheet presents axis rubrics and guiding questions, with an accompanying radar-chart output for quick comparisons (see Chapter 4). Fourth, lightweight visual aids, including the radar view and a brief decision flow, support interpretation for junior users (see Chapter 4)

The approach also uses semiotics and procedural rhetoric to examine how player input, comments, and system behavior shape meaning creation. Intentionality—both in design and reception—receives particular emphasis as a criterion for deciding whether interactivity operates narratively or only mechanically.

## 1.6 Thesis Structure

The thesis's remaining parts are structured as follows:

- Chapter 2: Literature Review provides an extensive survey of the existing scholarship on ludonarrative harmony, historical and contemporary narrative theory, interaction design frameworks, and relevant game studies literature. It establishes the theoretical foundation necessary for understanding and evaluating narrative and gameplay alignment.
- Chapter 3: Methodology outlines the qualitative research methodology used, detailing the rationale behind selecting specific theoretical frameworks and evaluation models. It also introduces the design criteria and analytical methods that guide the evaluation of ludonarrative harmony within selected interactive experiences.
- Chapter 4: The Ludonarrative Harmony Evaluation Framework (LHEF) presents a detailed explanation of the proposed framework developed in this thesis. It identifies and defines key dimensions for assessing narrative-mechanic alignment, clarifies evaluative criteria, provides a guided questionnaire for smoother navigation and demonstrates the framework's theoretical underpinnings and practical application.
- Chapter 5: Case Studies applies the developed LHEF framework to selected digital and analog interactive experiences, systematically evaluating each in terms of ludonarrative harmony and dissonance. The analysis draws specific design insights and examines the effectiveness of the evaluation framework across varied formats.
- Chapter 6: Framework Evaluation and Discussion synthesizes observations from the case studies, identifying patterns, recurring principles, and significant insights. It discusses the broader implications of these findings in accordance with the proposed framework for the evaluation of the LHEF and practice of narrative design in interactive media.
- Chapter 7: Conclusion summarizes the research outcomes, critically reflects on the study's limitations, and provides recommendations for further research directions, practical applications, and potential future developments in the field

of game and interaction design. It also revisits how the findings relate to the core aims of the study, tying the framework back to the broader discussion on narrative–mechanic alignment.





## **2. LITERATURE REVIEW**

### **2.1 Evolution of Narrative in Games Historically**

#### **2.1.1 From rules to meaning: Early game narratives**

The first digital games had little in the way of clear narrative. Titles such as Pong (1972) or Space Invaders (1978) depended on simple thematic framing with abstract mechanics. Although certain arcade games had visual themes or scores suggesting a location, they had no defined narrative arcs or character growth. Narrative was only interpretive leftover; meaning was drawn from, not written.

Narrative started to be more and more ingrained in the game experience with home consoles and computer games in the 1980s. Text-heavy adventures like Zork and early Japanese RPGs like Final Fantasy presented linear narrative structures closely mirroring those in literature or film. Here, player input directed pre-authored results within pre-scripted sequences, therefore limiting interactivity. The basic idea was that, while keeping a feeling of control, games could and should mimic narrative media.

Beyond classical adventure and JRPG traditions, the rise of story-first forms—interactive drama and “walking simulators”—made the narrative layer even more structurally visible. These works deliberately reduce mechanical friction so authored scenes, spatial cues, and environmental props carry exposition and theme in moment-to-moment play, a practice long theorized as narrative architecture and spatial storytelling (Jenkins, as summarized and expanded in Nitsche, 2009; Ryan, 2015). In this register, levels, affordances, and diegetic assets are read as text: players infer meaning from space, rhythm, and reveal rather than from cutscenes alone (Nitsche, 2009; Ryan, 2015). The result is that the relationship between what the player does and what the game says becomes easier to inspect; when intended role, tone, or thematic arc are not enacted through verbs, feedback, and pacing, the break is immediately felt (Mateas & Stern, 2005; Bizzocchi & Tanenbaum, 2011). In other words, these narrative-heavy subgenres foreground the very problem this thesis

addresses. They highlight the challenge of sustaining ludonarrative harmony when the story experience is the primary draw.

### **2.1.2 The ludology–narratology controversy**

Designers and academics started to seriously question how narratives operated inside interactive systems as games evolved. The ludology–narratology controversy in the early 2000s marked the climax of this foundational conflict in game studies. Ludologists like Gonzalo Frasca (2003) contended that, separate from narrative media like film or literature, games should be examined as formal systems of rules and player agency. Janet Murray (1997) describes multiform narrative as a structure that “attempts to give a simultaneous form to... multiple contradictory alternatives,” allowing players to explore branching story paths through their choices (p. 30). This concept positions digital media as a natural extension of narrative traditions that incorporate player interaction.

This argument was not only intellectual; it showed a design tension. Developers wanted to write emotionally resonant narratives without compromising gameplay; this was a difficult task that highlighted the delicate balance between systems and narrative. Frasca's concept of simulation vs. representation set the stage for realizing how interactivity creates meaning not by means of authored events but rather by means of player-system interactions.

### **2.1.3 Narrative integration and cinematic games**

Games seeking to mimic cinematic narrative increased in the 2000s. Titles such as *Metal Gear Solid*, *Half-Life*, and *Uncharted* brought voice acting, camera control, and scripted sequences to the front. Narrative fidelity rose, but sometimes at the expense of player agency. Many of these games used non-interactive cutscenes to tell the story, so dividing the player's role as agent from their role as audience.

Responding to this trend, Jesper Juul (2005) claimed in *Half-Real* that games are both fictional worlds and rule-based systems running concurrently. His work underlined the need of both system and narrative in defining a game; their tension was essential to the creation of meaning. He also emphasizes that this dual structure is central to how games produce meaning, since neither the rule-based layer nor the fictional layer alone can account for the player's full experience. In this view, narrative and mechanics

operate in parallel, and their interaction is what allows players to interpret their actions within a coherent fictional frame. Juul (2005) suggests that a certain degree of dissonance is inherent in the medium of games due to their dual nature as both rule-based systems and narrative experiences. He asserts that “good games do not eliminate this duality but rather manage it, allowing players to reconcile rule-based mechanics with fictional worlds” (p. 190).

#### **2.1.4 The rise of environmental and emergent storytelling**

Designers in the 2010s started to welcome environmental storytelling and emergent narrative as a reaction to the constraints of scripted storytelling. Rather than explicit narrative, games like *Dark Souls*, *Outer Wilds*, and *Minecraft* let players build meaning from spatial design, mechanics, and dynamic systems. These games allow player-driven interpretation by trading authored plotlines for discoverable narrative fragments.

Emergent storytelling, as investigated by Burgess & Jones (2022), shows how players give narrative value to systematic occurrences, therefore creating personal, sometimes emotionally charged stories not clearly scripted. This trend signals a change from narrative as a pre-authored framework to narrative as experiential creation.

#### **2.1.5 The change toward ludonarrative harmony**

From rule-dominant design to narrative-rich experiences, this historical path reveals the growing relevance of ludonarrative harmony. Game designers and academics want to match player involvement with narrative meaning as games change rather than view it as a separate layer. The basis of the framework suggested in this thesis is this growing emphasis.

The next parts will investigate in depth how ludonarrative harmony has been defined, assessed, and questioned across both academic theory and design practice.

### **2.2 Definitions and Conflicts: Ludonarrative Dissonance and Harmony**

Clint Hocking coined the phrase "ludonarrative dissonance" in a 2007 blog post examining *BioShock*, where he noted the thematic tension between the game's narrative, advocating freedom of choice, and its gameplay, which finally constrained significant player agency. This idea soon took center stage in game design debates.

Ludonarrative dissonance is the conflict between the narrative a game presents and the player-necessary actions. For example, in *BioShock*, the game system forces same progression irrespective of ethical decisions while the player is urged to feel they have moral responsibility. Dissonance does not come from narrative or mechanical inconsistency; rather, it comes from their lack of coherence in meaning. Hocking said that the player's ludic (gameplay-based) incentives sometimes clashed with the narrative themes of autonomy, so breaking immersion and reducing thematic resonance.

Jesper Juul (2005) presented this conflict as a natural characteristic of the medium rather than a defect. A certain amount of dissonance is almost unavoidable since games run concurrently as systems and fictions. Juul underlined, though, that good games let players interpret this duality so that they may fit the two without pushing total consistency.

Other academics have built on this basis. Frédéric Seraphine (2016) challenged the idea that harmony should be the aim of design; he proposed that some level of dissonance could inspire thought, unease, or emotional complexity. Seraphine contended that the quest of harmony might run the risk of overdetermining the player experience, therefore limiting room for emerging significance. By means of formalised frameworks and procedural logic, Ash (2016) and Cardona-Rivera et al. (2023) treat ludonarrative harmony as a reachable and desirable design goal, therefore providing models to actively match narrative intent with player action.

Saldivar (2022) proposed the concept of "ludonarrative harmonies" as a dynamic event changing throughout game play. His study of *Cyberpunk 2077* showed that instead of staying in a static state, games sometimes oscillate between periods of harmony and dissonance. This spectrum-based view lets for a more granular evaluation of how narrative and mechanics interact over time, so avoiding binary thinking.

In this thesis, ludonarrative harmony refers to the sustained alignment of mechanics, player role, systemic feedback (UI, audio, camera, VFX), and progression structures with a work's themes and plot—not merely the absence of contradictions. Harmony implies that what the rules incentivize and enable enacts what the story is about at both the moment-to-moment and arc levels (Salen & Zimmerman, 2003; Ryan, 2015). To avoid conflating happy accidents with craft, we distinguish incidental alignment—

coherence that emerges by happenstance—from designed alignment, in which verbs, economies, difficulty curves, and feedback channels are deliberately mapped to narrative objectives (Isbister, 2016; Nitsche, 2009). The goal of evaluation is not to police perfect consistency, but to identify where alignment is robust or fragile and which design levers (verbs, incentives, gating, feedback tone) can improve coherence in practice (Consalvo & Dutton, 2006).

When examining the fit between narrative and mechanics, it is helpful to separate incidental alignment, which emerges unintentionally, from designed alignment, which is established through deliberate choices. Incidental alignment appears when mechanics and story seem to work together by coincidence. An example would be a resource management loop that loosely reflects the game’s theme without having been crafted with that intention. Designed alignment, on the other hand, is intentional. Core verbs, reward structures, difficulty curves, and feedback channels are shaped to advance narrative goals so that the roles, tone, and stakes of the fiction are expressed through play rather than confined to non-interactive sequences.

In reality, both forms of alignment often appear within the same game. The purpose of evaluation is not to demand perfect consistency but to identify which elements demonstrate strong alignment and which remain vulnerable to disruption. This allows designers or analysts to determine which concrete levers such as verbs, incentives, gating, or feedback tone could strengthen coherence. Under this framing, ludonarrative harmony becomes an actionable design objective that can be assessed, rather than a purely abstract ideal.

The struggle between ludonarrative dissonance and harmony therefore mirrors a more general design issue: should games try to unify all facets of play and narrative, or is narrative friction a useful expressive tool? This thesis recognizes both perspectives and argues that, when desired, ludonarrative harmony can be deliberately sought via design techniques preserving player agency, thematic consistency, and systematic coherence.

## **2.3 Frameworks and Methodologies in Narrative–Mechanic Studies**

Many academic and industry-adopted frameworks have been created to examine the structural links between gameplay systems and narrative elements, therefore helping ludonarrative alignment. Often from different backgrounds—interaction design,

narrative theory, systems thinking—these models converge on the objective of interpreting how mechanics generate meaning in games.

Among the most powerful of these is the Mechanics-Dynamics-Aesthetics (MDA) framework suggested by Hunicke, LeBlanc, and Zubek (2004). MDA differentiates the emotional reactions or meanings evoked (aesthetics), the system behavior resulting from player interaction (dynamics), and the rule-based mechanics of a game. Originally designed as a means to grasp player experience, it has been modified by game academics to evaluate how narrative arises from or conflicts with mechanical structure. A game with stealth mechanics, for example, might create tension and uncertainty—emotions that have to be narratively supported to prevent dissonance.

Originally introduced as a method for evaluating educational games, the “6–11 Framework” proposed by Dillon in 2010 applies a multi-layered systems perspective that was later adapted for broader game analysis. The framework identifies eleven user-focused criteria such as agency, motivation, and immersion, along with six interconnected system layers that include rules, goals, feedback, challenge, narrative, and interaction. Together, these components form a structured way to examine how gameplay and story relate to one another. Although Dillon’s work was initially developed for serious games, it offers a systematic basis for assessing ludonarrative coherence in games more generally. Although the 6–11 Framework is highly comprehensive and was originally developed with dense educational or persuasive narratives in mind, it still offers a systematic perspective for evaluating ludonarrative coherence. In design contexts where narrative structures are meant to convey instructional or persuasive aims, the framework provides a structured way to assess how effectively game systems support the intended narrative. Despite its breadth, the layered structure of the model enables evaluators to examine ludonarrative alignment in a clear and methodical manner.

In more narrative-centric research, semiotic theories have also been important. Espen Aarseth (1997) defines “ergodic literature” as texts requiring “nontrivial effort” from the reader to traverse the narrative structure (p. 1). Aarseth also stresses that ergodic texts derive part of their narrative effect from the player’s traversal itself, making the act of navigating the system a contributor to meaning rather than a neutral operation. Meanwhile, Janet Murray (1997) emphasizes the potential of digital narratives to enable cyberdrama, a form of interactive storytelling in which “the player’s actions

shape the unfolding story” (p. 45). These points of view emphasize that a meaning-making tool, not only a technical one, is interactivity. In this framework, frameworks combining symbolic analysis with systems design—such as procedural rhetoric (Bogost, 2007)—allow for more critical examination of how games can use rules to convey narrative ideas.

Cardona-Rivera et al. (2020) propose the Goals–Feedback–Interpretation (GFI) model, which establishes narrative objectives as procedural anchors for gameplay. The model aims to align player goals with narrative outcomes through structured feedback loops, promoting narrative consistency without requiring linearity (p. 21). Their Goals–Feedback–Interpretation (GFI) model formalizes how player goals, system feedback, and interpretive framing can be organized to generate meaningful alignment. Games can maintain both player involvement and narrative consistency when the ludic and narrative objectives are coherently mapped.

Together, these systems offer a theoretical and methodological toolset for designing toward ludonarrative harmony, as well as for identifying and examining it. Though each model stresses various layers—mechanical, emotional, symbolic—together they provide a multi-dimensional awareness of how narrative and interactivity can coexist.

### **2.3.1 Collective qualitative methods for games**

Collective qualitative analysis provides a practical, academically grounded way to study narrative–mechanic alignment without running new user studies. Media and design research routinely employ content, thematic, and discourse analysis to code artifacts and surface patterns in how stories are constructed and communicated; these methods scale well to games because they let a single researcher systematically examine mechanics, feedback, and narrative devices using explicit codes (Lankoski, 2015; Consalvo & Dutton, 2006).

A complementary technique is close playing, the adaptation of literary close reading to games, where multiple focused passes reveal how story and gameplay interact at the level of verbs, systems, and feedback (Bizzocchi & Tanenbaum, 2011). Close playing is often paired with systematic capture methods to ensure that observations remain consistent across passes, a principle emphasized in both design-oriented and scholarly analyses. Prior work also highlights the value of explicit coding practices, since transparent categorization helps separate descriptive observations from interpretive

claims and strengthens the reliability of qualitative evaluation. In this thesis, these approaches underpin an operational procedure: defining units of analysis, building a codebook aligned with the axes of ludonarrative harmony, and conducting a light calibration using publicly available critic and player texts as a second lens, thus adding plausibility checks without human-subjects research (Lankoski, 2015; Consalvo & Dutton, 2006).

### **2.3.2 Adjacent lenses that inform evaluation**

Adjacent lenses sharpen evaluation where games borrow established vocabularies. Cinematic language, including framing, camera movement, montage, and sound, provides criteria for feedback–narrative consistency; these channels steer attention and carry tone, and misalignment here is often what players experience as “immersion breaking” (Nitsche, 2009; Ryan, 2015; Isbister, 2016).

From UX and playability heuristics, we inherit an expert-review practice that translates neatly into junior-friendly prompts: check goal clarity, feedback legibility, and affordances that invite in-character behavior (Desurvire, Caplan, & Toth, 2004; Pinelle, Wong, & Stach, 2008).

Finally, Platform Studies reminds us that engine and hardware affordances condition narrative–mechanic possibilities; foregrounding those constraints helps keep judgments fair and comparable across genres and formats (Montfort & Bogost, 2009; Wardrip-Fruin, 2009).

## **2.4 Dimensions of Ludonarrative Harmony: Agency, Feedback, Fidelity**

Although ludonarrative harmony is usually presented as a whole or intuitive trait, particular thematic aspects that shape narrative and gameplay interaction help to clarify it. Among these, three important axes stand out often in both scholarly publications and design analysis: player agency, feedback coherence, and narrative fidelity. Every one of these aspects influences how well the mechanics of a game support, mirror, or subvert its narrative goals.

The dimensions outlined above can be operationalized into observable indicators. Player-role fidelity is visible in incentives, gating, and economy loops; feedback–narrative consistency is read through UI, audio, camera, VFX, and failure-state tone;



and progression–structure synchronization appears in difficulty ramp, unlock pacing, and the timing of state persistence relative to the plot arc (Consalvo & Dutton, 2006; Isbister, 2016; Nitsche, 2009). In Chapter 3, these indicators become a codebook and a junior-friendly worksheet with 1–5 rubrics and guiding questions; a worked example and radar visualization demonstrate how the dimensions produce a readable profile in practice (Lankoski, 2015).

#### **2.4.1 Narrative coherence and player agency**

Often considered one of the main benefits of the interactive medium, agency is the player's capacity to make significant choices inside a game. Janet Murray (1997) imagined agency as "the gratifying power to take significant action and witness the outcomes of our decisions and choices." But, this meaning confuses narrative structure. Should the player be able to act, how can the story keep thematic emphasis?

Narrative coherence is dependent on a system's interpretation and reaction to player activity. Juul (2005) discusses how game designers can shape player agency by embedding systemic incentives that align with narrative themes. He notes that "while player agency is a fundamental component of games, it can be guided through mechanics that subtly direct player behavior towards desired narrative outcomes" (p. 84). Ash (2016) also claims that instead of shattering the narrative logic, the player's functional decisions help to harmonize the narrative unfolding. In this sense, limited agency—when well-motivated by narrative framing—can really improve ludonarrative alignment.

For example, *Before Your Eyes* eliminates conventional decision-making in favour of metaphorical resonance by means of blinking, enforcing involuntary progression. Narratively significant, the loss of control fits mechanically with the emotional arc of the story, therefore not breaking immersion. In contrast, *BioShock* creates thematic dissonance by pushing players toward same results while offering the appearance of choice.

#### **2.4.2 Interpretive loops and feedback systems**

Feedback—the game's reaction to player actions—creates a loop that either confirms or challenges narrative expectations. Feedback should be both mechanically responsive and narratively meaningful in ludonarrative harmony. The Goals–

Feedback–Interpretation model of Cardona-Rivera et al. (2023) stresses that the kind and framing of feedback decides whether the system maintains the desired narrative logic.

Player immersion can shatter when feedback is unclear or thematically inconsistent. For instance, *The Last of Us Part II* forces players to carry out violence opposing the moral arc of the main character. While some academics see this as a useful dissonance (Ferrari & Soraci, 2022), others contend that a collapse in feedback-narrative consistency leads alienation instead of introspection.

Strong feedback loops, like in *Dead Space*, keep immersion by means of diegetic interfaces and sound design. Projected onto the character's body and surroundings, the heads-up display emphasises narrative tone and emotional intensity without interrupting flow. Feedback across both mechanics and narrative world strengthens the player's feeling of embodiment and involvement.

#### **2.4.3 Thematic consistency and narrative fidelity**

Narrative fidelity is the extent to which the player's actions stay consistent with the logic, tone, and character motivations of the story world. Maintaining immersion and believability depends on this aspect. Seraphine (2016) argues that instead of striving for linear harmony, ludonarrative design should aim for narrative plausibility. He contends that “the outcomes of play should remain credible within the established fictional world, even if they introduce unexpected dissonance” (p. 35).

Fidelity may be expressed through environmental storytelling, character behavior, tone consistency, or emergent logic. For example, the time-loop mechanic in *Outer Wilds* is completely integrated into the philosophical framing of the narrative. Every mechanic is in-world based, therefore with system mastery and repetition players may come to know both the cosmos and their part in it.

Games like *Insomniac's Spider-Man* provide a different kind of fidelity: the pacing and design of side quests support the character's double life as a young adult and superhero. The mechanics mimic being overcommitted, overwhelmed, and always pulled in several directions—feelings that fit Peter Parker's narrative identity. Here, fidelity works on the level of rhythm and tone instead of clear narrative.

These aspects taken together provide the framework of ludonarrative harmony. They let academics and designers evaluate how particular systems and design decisions support or undermine a game's narrative potential instead of judging "harmonious" or "dissonant".

## **2.5 Evaluation Approaches: Models and Metrics**

Ludonarrative harmony has been studied increasingly in recent years from theoretical debate toward pragmatic models meant to evaluate and direct the fit between narrative structures and gameplay mechanics. Academics and experts have created different heuristics, measures, and frameworks to assess how narrative purpose is carried through player action, system feedback, and structural design as the need for consistent interactive experiences with emotional resonance has increased. This part underlines important ideas and their contributions as well as methodological limitations.

A long UX tradition shows that heuristic evaluation, expert review against structured checklists, surfaces coherence and usability issues early without large user studies. For games, the HEP (Heuristics for Evaluating Playability) and PLAY (a set of playability heuristics) heuristics and later playability principles translate into prompts about goal clarity, feedback legibility, and player learning; in a narrative context, these become checks for role fidelity and tone-consistent feedback (Desurvire, Caplan, & Toth, 2004; Pinelle, Wong, & Stach, 2008). Recent work formalizes narrative–mechanic fit as axis-based rubrics that produce comparable profiles across titles; this thesis follows that line by turning the dimensions in §2.4 into axis rubrics with guiding questions, yielding a printable worksheet and a radar chart that summarizes a game's harmony "fingerprint" (Lankoski, 2015). Systemic models also help: general design thought emphasizes how mechanics generate dynamics that culminate in intended narrative aesthetics (Salen & Zimmerman, 2003), while work on interactive drama and expressive processing underlines the coupling of content structures with runtime behavior (Mateas & Stern, 2005; Wardrip-Fruin, 2009). Complementing expert and worksheet evaluation, artifact-based reception checks code public critic and player texts to locate moments of consonance or dissonance; this provides lightweight triangulation for harmony claims without new experiments (Consalvo & Dutton, 2006; Bizzocchi & Tanenbaum, 2011).

Rubric-based harmony profiling;

Recent work formalizes narrative–mechanic fit as axis-based rubrics producing comparable profiles across titles. These frameworks score components (mechanics, UI/feedback, visuals, narrative beats) on Likert scales keyed to alignment criteria, enabling cross-case comparisons and within-project tracking. This thesis follows that line by turning the conceptual dimensions in 2.4 into axis rubrics + guiding questions, yielding a printable worksheet and a radar chart that summarize a game’s “harmony fingerprint.”

Systemic models adapted to narrative;

General game-analysis models (e.g., mechanics → dynamics → aesthetics) are useful when read through a narrative lens: mechanics generate dynamics that should culminate in intended narrative aesthetics (tension, dread, wonder). More recent goal/feedback formulations emphasize binding gameplay goals to narrative objectives, and ensuring that system feedback (state change, audiovisual response, camera, UI) guides the player toward the intended interpretation of their actions. This alignment is directly reflected in the feedback–narrative consistency and progression–structure indicators formalized later in the method.

Reception-anchored triangulation (no human subjects.);

Complementing expert/worksheet evaluation, several studies qualitatively code public player/critic texts and observed play to locate moments of consonance/dissonance (e.g., hesitation, bypassing combat, posts calling out “out-of-character” actions). Such signals provide lightweight triangulation for harmony claims without new experiments.

### **2.5.1 Models and frameworks of formalism**

A development-oriented framework meant to guarantee narrative alignment at every stage of game creation, Lauryn Ash's *Designing for Ludonarrative Harmony* (2016) offers a fundamental contribution to ludonarrative assessment. Ash advises starting with the thematic core of the narrative and then charting every gameplay mechanic to its narrative objective. Though her method has a playtesting-based evaluation stage where testers assess harmony using qualitative comments and observation of

dissonance reactions, it stresses designer intentionality. This approach connects theory and practice so that narrative analysis is anchored in manufacturing cycles.

Donoghue (2021) introduces the Ludonarrative Analytical Framework (LAF), a rubric-based evaluation method that assesses ludonarrative consistency by scoring game components such as mechanics, visuals, and narrative tone along specific axes, such as linear vs. emergent storytelling and mechanical vs. thematic focus (p. 54). Using a Likert-style scale, LAF assesses perceived harmony in particular design elements—mechanics, visuals, UI, and narrative tone. Donoghue's approach helps design input as well as academic study by allowing cross-comparison of games across genres and narrative techniques. Its best use is when backed by thorough case study research or player data, even if Donoghue uses it via interpretive close readings.

Cardona-Rivera et al. (2023) provide a more systematic view with their Goals–Feedback–Interpretation (GFI) model. Treating narrative goals as procedural anchors for game play, this method aims to formalize ludonarrative alignment. GFI inspires designers to match a player's gameplay objective—e.g., escape, exploration—with narrative goal—e.g., character development, mood. Feedback systems either supporting or opposing interpretation let one methodically critique alignment quality. By including a narrative logic layer to the loop linking player action and system reaction, the GFI model enhances earlier works like MDA.

### **2.5.2 Empirically based and experienced methods**

Some research look at ludonarrative alignment using player behavior and experience analysis rather than formal scoring methods. For example, Saldivar (2022) examines *Cyberpunk 2077* using a musical metaphor-based spectrum that classifies interactions as consonance, dissonance, or cacophony depending on the degree of narrative-mechanic integration. Tracking where and how harmony falls apart, the study shows a method of post hoc game evaluation based on empirical observation by means of video analysis and thematic coding.

Ferrari and Soraci (2022) also look at ludonarrative dissonance in *The Last of Us Part II* using player-generated commentary across playthroughs. Their research finds times of behavioral resistance—such as players purposefully skipping combat or upsetting scripted events—as signs of dissonance. These behavioral signals provide a new measure: narrative–mechanic misalignment is thought to be symptomatic by the

presence of frustration or rejection. Though not easily generalisable, these examples show how emotional and performative player data might be used as a diagnostic tool to assess ludonarrative coherence.

Dodds (2021) builds systems motivated by trait-driven mechanics using a design prototyping approach in which the narrative personalities of people are encoded into the gameplay loop. Her study reveals how narrative-mechanic coupling can be purposefully produced and how many playtesting can confirm whether players read character behavior as narratively consistent. This underlines the need of feedback fidelity as a narrative signal—not only transmitting mechanical results but also maintaining narrative consistency.

### **2.5.3 Models of meta-analysis and comparative models**

Using their hermeneutic strip technique, Roth, van Nuenen, and Koenitz (2018) offer a meta-analytical model monitoring player interpretation of gameplay-narrative interactions across time. Examining *A Way Out*, they show how player interpretation changes in reaction to the balance of scripted and spontaneous content the game offers. Though less directly relevant in design, their approach connects structuralist critique and reception analysis, which is beneficial in post-launch evaluation and academic criticism.

Greig (2023) broadens the conversation to include non-game interactive media, especially ergodic theatre and virtual reality experiences. Emphasizing emotional consistency and mechanical metaphor as main criteria, her study on games like *The Under Presents* and *What Remains of Edith Finch* combines dramaturgical analysis with game design criticism. Although coming from different disciplines, Greig's results demonstrate the universality of ludonarrative tension in interactive narrative systems.

### **2.5.4 Gaps and synthesis**

Among these methods, several obvious trends stand out:

**Mechanics as Narrative Devices: Mechanical Narrative Tooling** Most models stress the need of making sure mechanics are narratively expressive, not only ludically useful.

Feedback Coherence: Sometimes, evaluation depends on how well remarks—GFI, Dodds, Saldivar—support narrative interpretation.

Player-Centered Evaluation: Both empirical and formalist theories increasingly rely on observed or simulated player interpretation to assess harmony.

Lack of Unified Metrics: Although there are many theories, no presently accepted assessment criterion directs ludonarrative design. Many models either need considerable contextual justification or are custom.

These results emphasize the need of a sensible, multidimensional assessment tool—one that integrates design goal, player input interpretation, and structural analysis. Aiming for more general relevance in game and interaction design contexts, the remainder of this thesis will suggest and construct such a framework using the strengths of the models described before.

## **2.6 Analog and Cross-Media Perspectives: Narrative-Mechanic Alignment Beyond Digital Games**

Cross-media literatures are most useful where they yield operational prompts. From cinema, framing, montage, and sound design become checks for feedback–narrative consistency: It checks whether camera behavior, editing rhythm, and diegetic or extra-diegetic audio all reinforce the intended tone, rather than undercut it, at pivotal moments (Nitsche, 2009; Ryan, 2015; Isbister, 2016). Within UX and HCI research, concepts such as affordances and learnability translate into considerations of player-role fidelity. Interface conventions and signifiers should encourage behaviors that align with the roles and actions the fiction establishes for the player, as discussed by Pinelle et al. (2008) and Desurvire et al. (2004). From tabletop and interactive drama, procedural constraints and gating suggest prompts for progression–structure synchronization (Mateas & Stern, 2005). Finally, environmental storytelling and narrative architecture keep spatial composition in scope: Similarly, it examines whether level design and environmental storytelling (e.g., layout and prop ecology) convey exposition in a way that the player can actively experience (Nitsche, 2009; Ryan, 2015).

### **2.6.1 Co-authored narratives and tabletop role-playing games**

TTRPGs such as Dungeons & Dragons present a unique challenge for the ludonarrative model: the narrative is mostly emergent, shaped by improvisational storytelling, and mechanically controlled by dice rolls, stat sheets, and rulesets. The mechanical structure in TTRPGs acts as a narrative scaffold allowing players to turn abstract systems into story rather than contradicting narrative. Here, co-authorship and player improvisation take front stage; group negotiation rather than formal systems determines harmony or discord.

Bowman (2010) contends that in TTRPGs, player performance and shared narrative expectations significantly influence the fit between mechanic and story. Mechanics not only allow actions; they also frame interpretation and govern what kinds of stories are possible or probable inside the system. The existence of critical hit tables or alignment charts, for instance, directs player behaviour towards particular archetypes or results, therefore influencing the tone and direction of the story. This shows a clear kind of ludonarrative harmony in which narrative is co-produced by design grammar, communal authorship, and mechanical constraint.

### **2.6.2 Escape rooms and spatial narrative constraints**

Escape rooms provide a mixed analog and digital interaction by immersing players in a thematic scenario using physical environments, puzzles, and embedded narrative fragments. Usually low in plot, the story is rich in atmosphere, pacing, and role assignment. While working on spatial and logic-based puzzles pushing a loose plotline, players are urged to play fictional roles—detectives, prisoners, scientists.

According to Nicholson (2015), good escape rooms run on embedded narrative design, therefore linking story world logic to mechanics including time constraints, object interactions, and spatial arrangement. Mechanics turn narrative tools when every interaction enhances the emotional or thematic arc; but, when puzzles seem arbitrary or unmotivated by context, the experience falls apart. Unlike digital games, escape rooms often depend on real-world physics and human coordination, therefore producing a kind of transient, performative embodied ludonarrative alignment.



### **2.6.3 Expressive mechanics and sports**

Even conventional sports can be seen from the perspective of ludonarrative interaction. In chess, for instance, the movement patterns of the knight or bishop not only serve purpose but also reflect a character or theme identity. The knight can leap over other pieces with its L-shaped move, implying uncertainty or fraud. Depending on cultural background, the bishop, who moves diagonally across the board, fluidly covering great distances, symbolizes range or devotion. Though unwritten stories, these mechanical archetypes encourage metaphor and interpretation through play.

Framing play as a spectrum from structured rule-bound games (*ludus*) to spontaneous, improvisational activity (*paidia*), The narrative system tells or supports depends on its design as well as the interpretive practices of its users. In analog systems, ludonarrative harmony is often co-constructed rather than hardcoded, resulting from patterns of use, social dynamics, and aesthetic framing.

### **2.6.4 From analog lessons to digital design**

These analog forms imply that ludonarrative alignment transcends written narrative or specified interaction loops. Rather, good tools for meaning-making might be mechanical-metaphor consistency, role expectations, and social interpretation. Though more technically sophisticated, digital games can draw from these legacies by creating systems that promote player reflection, improvisation, and metaphorical understanding.

Games like *Journey*, *Outer Wilds*, or *Slay the Princess* draw on such legacies, letting mechanics define and limit theme, emotional arc, and perception. Examining non-digital narrative alignment strategies exposes fundamental ideas as designers try to create interactive systems that interact with story: that harmony is as much about context and player framing as it is about internal consistency or authored plot.

## **2.7 Market & Reception of Narrative-Rich Games**

This thesis does not claim that ludonarrative harmony guarantees sales or review scores. Rather, it synthesizes contextual signals—from player/critic reception and market visibility—that suggest why narrative alignment is salient in narrative-heavy genres. The goal is to motivate the evaluation framework (Ch. 3 and 6) with realistic

expectations: harmony is a design choice valued by many audiences and gatekeepers. It also interacts with numerous other factors (IP strength, platform, marketing, price, timing).

Peer-reviewed research has repeatedly linked critical quality signals (e.g., Metacritic metascores) with commercial outcomes. Greenwood-Ericksen et al. report a positive and significant relationship between metascores and sales across hundreds of console titles, cautioning that correlation likely reflects underlying quality detected by critics and buyers rather than metascores causing sales per se. This converges with broader econometric findings that online review information influences entertainment purchases (including games), aligning with earlier evidence on digital markets. For released PC titles, practitioners commonly treat Steam review volume as a coarse demand proxy; empirical and industry analyses show strong associations between review counts and units owned/sales, with estimates typically modeling a reviews-to-owners ratio and reporting high correlations (method cautions apply).

Recognition systems also amplify visibility for story-forward work. The Game Awards—a global, live-streamed show with editorial and player-voted categories including Best Narrative—reported 154 million livestreams in 2024, indicating substantial reach for nominees and winners and, by extension, for their narrative positioning. Major institutions such as BAFTA Games similarly foreground narrative craft; for example, in 2024 *Baldur's Gate 3* won both Best Game and Narrative, illustrating how critics and juries often reward titles where story, role, and systems cohere. While awards are not direct measures of sales, they shape discoverability (press coverage, platform featuring) and can contribute to longer-tail attention.

Industry demographics indicate a broad and durable player base for narrative-driven content. The ESA's Essential Facts reports show video games as a mainstream, cross-generational medium in the U.S. (average player ~mid-30s; high weekly engagement), underscoring a large addressable audience for story-rich titles across platforms. Although these reports do not isolate “story” as a sole driver, they document widespread engagement that, coupled with reception evidence above, helps explain why narrative craft receives sustained institutional attention (award categories, editorial coverage) and why story-heavy releases reliably anchor platform showcases.

In narrative-heavy games, many of the critic/consumer signals that correlate with success are precisely those our framework interrogates:

Role fidelity and agency: Reviews often praise or criticize whether the player is incentivized to act in character; misalignments (e.g., out-of-character grind) are frequently labeled “immersion breaking,” mirroring the Player-Role Fidelity axis.

Feedback–narrative consistency: Tone-breaking UI/audio/camera is a common critique in story-forward titles; conversely, alignment is lauded as “cinematic” or “cohesive,” tracking our Feedback Consistency axis indicators.

Progression–structure synchronization: Reception frequently cites pacing, whether difficulty, unlocks, and narrative beats “land together”, which maps to our Progression–Structure axis.

Because these concerns are explicitly represented in critic/player discourse and in award justifications, they provide qualitative triangulation targets for our evaluation : if a game profiles poorly on role fidelity or tone, we expect to find corroborating patterns in public texts (e.g., “out of character,” “grindy,” “tone-deaf UI”), and vice-versa.

Macro reports situate these reception dynamics within a stable global market. For instance, Newzoo estimates \$187.7 billion in 2024 global game revenues with healthy PC/console segments—an environment where well-received narrative flagships and critically acclaimed indies can both achieve durable visibility and tail sales. Within this landscape, reception-driven discovery (press, platform featuring, award cycles, community word-of-mouth) interacts with pricing and live-ops to shape outcomes. Historical industry analyses have at times emphasized metascore–sales ties, while also noting confounds (publisher power, franchise effects, marketing); together these findings argue for caution in treating any single metric as determinative.

The research above culminates to show what the general market and reception in games does (and does not) imply for this thesis. Design choice, not KPI: Ludonarrative harmony is a creative stance that many players and critics reward in narrative-rich genres; it is neither necessary nor sufficient for commercial success. Because reception routinely cites role, tone, and pacing, the very constructs operationalized in our axes, these public signals are suitable for lightweight triangulation without new experiments.

Methodological restraint: We use awards, metacores, and review volumes as contextual indicators (visibility, engagement, critical alignment), not as proof of causation. Our framework remains qualitative and artifact-focused, with reception used to check plausibility and to interpret profiles in plain language for non-experts.

Award visibility is uneven across platforms/regions and can reflect marketing as much as craft; viewership does not directly translate to purchases. Steam-based proxies vary by genre, price, regional mix, and sentiment distributions; they are best treated as order-of-magnitude signals with documented variance. Metascore-sales correlations differ by platform, time period, and release slate; they illuminate association, not mechanism.

Market and reception evidence justify taking harmony constructs seriously in narrative-heavy games: they recur in critical language, factor into award recognition, and relate to audience engagement proxies. Practically, this supports our use of a worksheet that makes role/tone/structure checks explicit for junior designers without over-claiming predictive power.

## **2.8 Interdisciplinary Corpus and Convergence Rationale**

Because harmony sits where story and system meet, our corpus reads across boundaries. Core game-studies work names the tension and supplies axes for recurring questions; qualitative methods explain how to study released artifacts responsibly; film and UX lenses sharpen attention to tone, role, and affordances; narrative theory helps us talk about structure and spatial storytelling; platform context bounds judgments; reception provides an external language to triangulate; and cross-media exemplars test the generality of our questions (Lankoski, 2015; Nitsche, 2009; Ryan, 2015; Isbister, 2016; Desurvire et al., 2004; Pinelle et al., 2008; Mateas & Stern, 2005; Wardrip-Fruin, 2009; Consalvo & Dutton, 2006). Read together, these strands cohere into a procedure and a worksheet that a junior designer can apply, interpret, and defend.

### **2.8.1 Core ludonarrative work**

Our starting point is the scholarship that names the tension outright—dissonance when mechanics and fiction pull apart; harmony when they are made to work in concert. This corpus provides the conceptual anchors (e.g., alignment of role, feedback, and structure) and the early attempts at formalizing evaluation. It also supplies the caution

we carry forward: harmony is not the absence of contradictions, but the sustained, intentional alignment of verbs, incentives, tone, and pacing with theme and plot. The axes we use throughout this thesis grow directly from this center and give us a shared vocabulary for recurring design questions.

### **2.8.2 Collective qualitative methods**

Rather than recruit participants or run new experiments, we follow the media-studies tradition of studying artifacts closely. Content and thematic analysis give us a disciplined way to code what is on the screen and in the rules; discourse analysis helps us attend to how texts (including public reviews) talk about what play feels like. Close playing, multiple, focused passes through a game with deliberate capture, lets us observe how story and mechanics interact at the level of moment-to-moment verbs and feedback, not just at cutscene boundaries. This tradition guides the concrete choices we make in Chapter 3: defining units of analysis, building a codebook aligned to our axes, and adding a small calibration step with publicly available critic/player texts to keep our readings honest without incurring the overhead of human-subjects research.

### **2.8.3 Film and cinematic language**

Games borrow heavily from cinema to shape tone and guide interpretation—through camera behavior, framing, editing rhythms, and sound. Reading our cases with film’s vocabulary sharpens one of our most practical checks: feedback–narrative consistency. A “cinematic” failure state that undercuts dread, or UI and VFX that shout against a quiet dramatic beat, are not merely aesthetic quibbles; they are breaks in the interpretive scaffolding players rely on to make sense of their role. Treating camera and audio as meaning-bearing channels turns into specific prompts in our worksheet (“Does failure feedback reinforce the intended emotional state?”), and into tangible indicators in the codebook (e.g., tone-consistent HUD motifs, diegetic sound cues at reveals).

### **2.8.4 UX, HCI, and playability heuristics**

The UX tradition of heuristic evaluation gives us a practical model for expert review without large samples. In our context, those heuristics are rephrased around role, tone, and affordances: do signifiers invite in-character behavior; are goals legible in ways that align with the fiction; does the interface help the story’s stakes land rather than

distract from them? The value here is not theoretical novelty but usability: by recasting these ideas as guiding questions and rubrics, we make the framework approachable for junior designers and consistent across evaluators. This is where the literature most directly becomes pedagogy.

### **2.8.5 General narrative theory and game narrative architecture**

We draw selectively from narrative theory to talk about structure without prescribing formula. Plot functions, arcs, and information release are useful not as templates to enforce, but as lenses for asking whether progression and systems echo the dramatic rhythm the work sets for itself. In game-native terms, narrative architecture reminds us that space is text: levels and prop ecologies are authored to communicate, and mechanics should enable players to enact that communication. This line of thought feeds our progression–structure checks and our attention to environmental storytelling in the codebook.

### **2.8.6 Platform and production contexts**

No evaluation is fair without acknowledging what the platform and production context make possible. Camera systems, I/O latency, engine affordances, memory budgets—these shape how far a team can push certain narrative-mechanic integrations. For that reason, each worksheet begins by naming platform and engine constraints. This is not an apology; it is a boundary condition that helps us compare like with like and interpret scores with the right expectations.

### **2.8.7 Market and reception**

Awards, critic discourse, and player reviews do not validate a framework, but they do reveal what communities pay attention to. In story-forward genres, reception language reliably circles the constructs we measure—role fidelity, tonal coherence, and pacing. We treat those public texts as triangulation rather than proof: if our profile suggests a weakness in, say, role incentives, we expect to see players calling that out; if the radar shows strong tone alignment, we expect to find critics using “cohesive” and “cinematic” in ways that match what we observed. Market statistics and award visibility are included only to motivate why this kind of evaluation is worth doing; they do not drive our scoring.

### **2.8.8 Cross-media exemplars**

Finally, we sample beyond digital games where it clarifies design levers. Tabletop scenarios and escape rooms make procedural constraints and gating visible; they demonstrate how rules manufacture role and pace. Looking sideways in this way helps us phrase questions about co-authorship and emergent/embedded balance in plainer terms. It also keeps the framework honest: harmony is not a quirk of a single engine or genre; it is a recurring alignment problem wherever people interact with designed systems to experience a story.

Read together, these strands form more than a collage. The core game-studies work defines the construct; qualitative methods tell us how to study it responsibly as artifact; film and UX lenses sharpen our attention to tone, role, and affordances; narrative theory helps us talk about structure; platform context bounds our judgments; reception offers an external language to triangulate against; and cross-media cases test the generality of our questions. The result, in Chapter 3, is a procedure (protocol + codebook), and a worksheet that turns that procedure into something a junior designer can apply, interpret, and defend.

## **2.9 Summary and Research Gap**

From its conceptual beginnings to tool development for its assessment, this chapter has followed the evolution, discussion, and methodological terrain surrounding ludonarrative harmony. Among design and academic circles, growing knowledge is that the harmony between narrative and game mechanics is not only an aesthetic issue but rather a major engine of player involvement, emotional resonance, and thematic consistency.

Beginning with the historical evolution of narrative in games, the review underlined the conflict between authored narrative and system-based interaction. Often referred to as the ludology-narratology controversy, this basic conflict shapes the way academics and designers tackle narrative integration in interactive media. As games have developed, new kinds of narrative—including environmental design, systematic narrative, and emergent gameplay—have challenged conventional storytelling methods and demanded fresh evaluation criteria.

Important concepts like ludonarrative dissonance and ludonarrative harmony were investigated not only in definitional terms but also as developing critical perspectives. Although historically seen as a failure of integration, recent studies indicate that deliberate dissonance may also be a useful design tool. Many designers, therefore, long for harmony in which the narrative relevance is enhanced by the mechanics, feedback loops, and player choices.

The chapter then offered theories and assessment techniques trying to operationalize ludonarrative alignment. Among these were Ash's process-based harmony framework, Donoghue's LAF scoring tool, the official GFI model from Cardona-Rivera et al., and experience-driven models such Saldivar's consonance-dissonance-cacophony spectrum. Research-through-design methods (Dodds) and hermeneutic models (Roth et al.) also provided several routes to evaluate how meaning arises from the interaction of system and narrative.

Last examined to broaden the conceptual range of ludonarrative harmony were analog and cross-media methods. Narrative-mechanic alignment is not limited to digital games, as examples from chess, escape rooms, and TTRPGs show. These points of view emphasize that fundamental elements are player interpretation, role expectation, and mechanic-metaphor coherence across all interactive narrative types.

Notwithstanding these developments, a significant study question still exists: although many models exist to investigate ludonarrative harmony retrospectively, there is still a lack of practical, design-oriented tools that can guide the construction of harmonized systems during development. Most current methods are either post-hoc, interpretive, or limited in scope. Furthermore, few models address the whole range of experiences from AAA titles with authored narratives to systematic games with emergent narratives or metaphor-driven mechanics.

The review shows that narrative-heavy games benefit when mechanics, player role, feedback, and progression converge on the work's themes, and that artifact-focused qualitative methods can surface where that convergence is robust or fragile (Lankoski, 2015; Consalvo & Dutton, 2006). Three practical gaps persist: the lack of a replicable procedure with units of analysis, a codebook, and calibration; the need for a junior-friendly instrument with axis rubrics, guiding questions, a worked example, and visual summaries; and limited use of public critic and player texts for triangulation without



experiments (Desurvire et al., 2004; Pinelle et al., 2008). The remainder of this thesis addresses these gaps: Chapter 3 introduces a close-playing protocol and an aligned codebook; Appendix A presents a printable worksheet and a radar template; the case studies demonstrate application to qualify what a harmony profile means for design (Bizzocchi & Tanenbaum, 2011).





### **3. METHODOLOGY**

#### **3.1 Research Approach and Justification**

Using interpretative analysis and comparative synthesis, this thesis examines qualitative research from a design-centered perspective. Given the conceptual nature of ludonarrative harmony and the current fragmentation in assessment techniques, qualitative research offers a flexible yet rigorous exploration of how narrative and gameplay interact across multiple environments.

Unlike empirical methods that depend on large-scale player testing or experimental controls, qualitative approaches let:

- Thematic interpretation of design patterns,
- Close analysis of interactive systems and narrative intent,
- Critical comparison of case studies,
- Integration of theoretical and practice-based knowledge.

This thesis's main objective is to identify good concepts and trends supporting ludonarrative harmony. It aims to analytical generalization instead of statistical generalization: developing a conceptual framework that researchers and designers can change across narrative forms, genres, and formats.

Practical constraints also influence this choice. Given the short time frame and breadth of this thesis, original empirical testing—user studies, ethnographic observation—is not practical. The qualitative study of well-documented games—including design documentation, developer interviews, and academic critiques—provides a rich data set to investigate how ludonarrative alignment is either achieved or compromised.

Furthermore, the research aids in comparative analysis by way of selected case studies demonstrating both harmony and dissonance. These span from well-known cases of conflict (BioShock, Uncharted) to critically lauded creations (Outer Wilds, Before Your Eyes, Spider-Man). Their choice is founded on their:

- Relevance to ludonarrative discourse,
- Diversity in genre and interaction model,
- Availability of developer or academic insight.

In addition, analog formats (TTRPGs, escape rooms) are examined to trace cross-media patterns in narrative-mechanic alignment. This supports the broader claim that ludonarrative harmony is not exclusive to video games but represents a more general design problem in interactive storytelling.

The methodology follows an iterative logic:

- Review and synthesize evaluation models from literature (Chapter 3),
- Define a unified evaluation framework (Chapter 4),
- Apply the framework to curated examples (Chapter 5),
- Reflect on findings and design implications (Chapter 6).

In practical terms, this is an artifact study of released games and public documents, read closely and comparatively. The evidence base comprises the games themselves and publicly available materials—developer interviews, press kits, manuals, and critical essays, so no human subjects are recruited and no experiments are run. This aligns with the aim of analytical, not statistical, generalization: the goal is a transparent way to describe why a title feels harmonious or not, anchored in observable design features and repeatable reasoning (Consalvo & Dutton, 2006; Lankoski, 2015).

Each case is read through close playing and documentary analysis, followed by cross-case synthesis. Close playing involves multiple, deliberate passes with lightweight capture (timestamps, stills, short clips, field notes) so judgments about role fidelity, feedback tone, or structural pacing are traceable to concrete evidence (Bizzocchi & Tanenbaum, 2011; Consalvo & Dutton, 2006). Comparative synthesis then looks horizontally for recurring patterns—where mechanics enact themes, where feedback sustains tone, and where progression tracks dramatic rhythm (Lankoski, 2015).

In sum, this thesis builds its findings through conceptual synthesis, structured design reasoning, and critical comparative analysis, guided by the qualitative principle of interpretive coherence rather than statistical proof.

### **3.2 Framework Design Methodology**

Based on past from game design research and using qualitative design concepts, this thesis provides a methodical framework for evaluating ludonarrative harmony. The goal is to develop a useful tool enabling scholars and designers to assess the consistency between narrative delivery and game mechanics by means of retrospective criticism and prospective design evaluation.

The analysis proceeds by close playing—an adaptation of literary close reading to interactive systems—structured as three short, repeatable passes. A story-first pass logs beats, role framing, and stated stakes as presented to the player; a system/loop pass inspects verbs, incentives, gating, and economy—what the rules actually reward; and a feedback/tone pass attends to camera behavior, HUD/UI affordances, audio, VFX, and failure states. Across passes, we keep a light capture protocol (timestamps, targeted screenshots or short clips, brief field notes) and log platform/engine, difficulty, and version. These practices formalize established game-studies methods (close analysis, disciplined note-taking) while remaining feasible for a single researcher and requiring no ethics approval (Bizzocchi & Tanenbaum, 2011; Consalvo & Dutton, 2006; Lankoski, 2015). Two safeguards reinforce rigor: traceability (each axis judgment cites at least one capture reference) and context awareness (a one-line note of platform/engine constraints qualifies expectations fairly across genres and technologies) (Wardrip-Fruin, 2009).

#### **3.2.1 Justification of design framework**

Framework-based evaluation models are often used in game studies and related design disciplines as a means of breaking down complex events into analysable components. Foundational examples include Sweetser and Wyeth's GameFlow model for engagement (2005), which operationalises Flow theory into eight gameplay criteria, and Mitgutsch and Alvarado's SGDA Framework (2012), which assesses coherence in serious game design by aligning narrative, mechanics, aesthetics, and educational intent.

Similarly, Ash (2016) and Donoghue (2021) developed distinct systems to evaluate ludonarrative harmony, stressing how design decisions affect the perceived fit between narrative purpose and player action. These works underline the importance of

frameworks as heuristic tools—they provide a common language for multidisciplinary evaluation, help comparative analysis across cases, and allow organised judgement.

In line with these policies, this thesis applies a constructivist framework-building approach driven by three basic stages often observed in design-oriented research (Yin, 2015; Andreoli et al., 2017).

1. Theoretical Synthesis: Drawing from existing literature, the framework identifies recurring dimensions of ludonarrative alignment (e.g. narrative coherence, mechanic expressiveness, player agency).
2. Componentization: These dimensions are operationalized into discrete, evaluable components—drawing from models like SGDA (purpose—mechanics—aesthetics) and FRACH (immersion—collaboration—story).
3. Application and Iteration: The proposed framework is applied to curated case studies and refined based on analytical yield. While formal user testing is outside the scope of this thesis, the framework is designed for adaptability in future design practice.

### **3.2.2 Precedent-driven structure**

To ensure clarity and modularity, the proposed framework adopts a structure similar to successful examples in the field:

- From Ash (2016): The emphasis on thematic resonance between mechanic and story is retained.
- From SGDA: A balance is maintained between form (mechanics, aesthetics) and function (intent, interpretation).
- From FRACH: The framework encourages designers to evaluate role dynamics and environmental storytelling.
- From GLIMPSE (Carvalho & Furtado, 2020): The importance of UX perspectives—particularly emotional and cognitive coherence—is integrated.
- From Nautiyal et al. (2024): Practical applicability is prioritized, making the framework feasible for rapid design iteration or postmortem analysis.

Together, these sources inform a hybrid design logic that is theoretical in origin but pragmatic in structure.

### **3.2.3 Rationale for qualitative methodology**

Often, quantitative validation of such frameworks calls for psychometric study or large-scale playtesting, which is outside the scope of this thesis. Precedent, therefore, supports the use of qualitative validation by means of expert comparison, case application, and design reflection. Both Yin (2015) and Dodds (2021) show that when backed by a well defined evaluative rubric, thematic case analysis can produce rigorous insight.

Grounded in the insights examined here, the following chapter will offer the suggested Ludonarrative Harmony Evaluation Framework (LHEF). Its parts will be specified, justified, and then used on case studies spanning digital and analog formats to evaluate both adaptability and critical sharpness.

## **3.3 Case Study Selection Criteria**

The case studies in this thesis are chosen to assess the efficacy and adaptability of the suggested Ludonarrative Harmony Evaluation Framework (LHEF) over a spectrum of design philosophies, genres, and interaction modalities. The case studies are not intended to be an exhaustive typology of game narratives but rather to provide analytically rich contrasts that show both successful and problematic applications of ludonarrative design given the aim of evaluating narrative-mechanic alignment as a design principle.

### **3.3.1 Selection method**

Following Robert Yin's (2014) model of purposive sampling in design research, the case study method selects cases for their theoretical relevance and ability to question or validate the framework under development. Instead of aiming for generalizability by means of sample size, this dissertation aims for conceptual diversity: every game (or format) is selected to highlight a particular mode of narrative-mechanic interaction.

Four ideas directed choice:

1. Narrative Prominence Games must feature narrative as a core component—whether explicit (e.g., authored storyline) or implicit (e.g., environmental storytelling or systemic narrative).

2. **Mechanic Significance** Games must offer meaningful interactivity, allowing the player's input to influence or interpret narrative experience (rather than passive consumption).
3. **Critical Discourse Presence** Selected titles should have some degree of existing scholarly, journalistic, or community critique relevant to ludonarrative design. This ensures the ability to triangulate analysis and contextualize the evaluation.
4. **Formal and Experiential Diversity** The sample spans genres (platformers, adventure, horror, narrative-driven RPGs), scales (AAA to indie), and even non-digital forms (TTRPGs, escape rooms), in order to test the framework's flexibility.

### **3.3.2 Primary case studies**

The following titles have been selected based on their relevance to ongoing discussions of ludonarrative harmony and their ability to illustrate a wide range of narrative–mechanic relationships. Each work represents a distinct configuration of player agency, systemic structure, and narrative intent, allowing the framework to be tested across both highly authored and highly emergent designs. The selection also reflects a balance between commercial visibility and methodological diversity, ensuring that the analysis is grounded in recognizable cases while still covering varied design traditions. Table 3.1 outlines these titles along with the specific rationale for their inclusion.



**Table 3.1:** Selected works as case studies and their rationale.

| Case Study Title              | Medium          | Harmony/Dissonance<br>Focus | Justification and Relevance to Study                                                                                                                                                                                                                                                                    |
|-------------------------------|-----------------|-----------------------------|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| God of War<br>(2018)          | Digital<br>Game | Harmony                     | Core verbs of controlled ferocity and mentoring align with the father-protector theme; restrained feedback supports tone. The PS4 fight–traversal–story loop and RPG surges sometimes tug against voiced urgency, which is exactly where the framework surfaces useful levers. Flagship worked example. |
| Uncharted 4:<br>A Thief’s End | Digital<br>Game | Dissonance                  | Cinematic traversal fits pulp adventure, but mandatory multi-wave gun arenas strain the promised role of a decent, reluctant thief and flatten consequence after intimate story beats.                                                                                                                  |
| Before Your<br>Eyes           | Digital<br>Game | Harmony                     | Blinking as input literalizes memory, attention, and loss. The mechanic is the theme, producing a clean demonstration of mechanic–theme alignment.                                                                                                                                                      |

**Table 3.1 (Continued):** Selected works as case studies and their rationale.

| Case Study<br>Title              | Medium          | Harmony/Dissonance<br>Focus | Justification and Relevance to Study                                                                                                                                                            |
|----------------------------------|-----------------|-----------------------------|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| Outer Wilds                      | Digital<br>Game | Harmony                     | Knowledge-based progression and a fixed time loop make structure and progression the same curve, reinforcing curiosity, discovery, and mortality without a power grind.                         |
| BioShock<br>(2007)               | Digital<br>Game | Dissonance                  | Power acquisition and cheap failure glamorize excess while the story critiques it; harvest–rescue signaling and ADAM pacing create a sustained theme–mechanic clash.                            |
| Marvel’s<br>Spider-Man<br>(2018) | Digital<br>Game | Harmony                     | Swing, quick incident response, and reward structure support the neighborhood-protector ethos; tensions appear when urgency VO meets visible side content, a tractable role-fidelity issue.     |
| Dead Space<br>(2008)             | Digital<br>Game | Harmony                     | Diegetic HUD, strategic dismemberment, and resource pressure keep survival-horror fiction intact and the engineer role coherent across structure and feedback.                                  |
| Remember Me<br>(2013)            | Digital<br>Game | Dissonance                  | Memory Remix set pieces enact identity themes, yet the dominant arena-combat loop and celebration grammar dilute the ethics of manipulation between edits. Useful partial-alignment comparator. |

These titles reflect the core dichotomy of ludonarrative harmony vs. dissonance, offering both examples to emulate and pitfalls to critique. Their structural and experiential diversity allows for a broad test of the framework's dimensions.

### **3.3.3 Limitations**

This case set is deliberately qualitative and comparative, not exhaustive. While some games may offer clearer harmony/dissonance contrasts than others, their inclusion is justified not by representativeness but by analytical value—each case poses a design problem or solution central to ludonarrative discourse.

The next section introduces the Ludonarrative Harmony Evaluation Framework (LHEF) itself, defining its components and rationale before it is applied in Chapter 4.

## **3.4 The Ludonarrative Harmony Evaluation Framework (LHEF)**

Created in this dissertation, the Ludonarrative Harmony Evaluation Framework (LHEF) is a methodical instrument for assessing how well a game fits its narrative objective with its mechanics. Appropriate for post-release criticism, comparative research, and early-stage design reflection, it was meant to be both analytical and generative.

The LHEF offers a modular assessment tool flexible across game genres and formats and isolates key components of ludonarrative structure based on the theoretical foundations and previous frameworks discussed in Chapter 2 and Section 3.2.

### **3.4.1 Framework overview**

As seen in Table 3.2, three main aspects make up the LHEF; each has two basic axes. Though intended to be clear individually, these axes gain total evaluative power when viewed in relation to one another.

**Table 3.2:** Categorization of the ludonarrative harmony evaluation framework axes.

| Dimension               | Axis 1          |      | Axis 2                     | Key Question                                                                                             |
|-------------------------|-----------------|------|----------------------------|----------------------------------------------------------------------------------------------------------|
| 1. Synchronization      | Mechanic–       |      | Feedback–                  | <i>Do the moment-to-moment systems reflect the narrative tone and themes?</i>                            |
|                         | Theme           |      | Narrative                  |                                                                                                          |
|                         | Alignment       |      | Consistency                |                                                                                                          |
| 2. Agency & Coherence   | Player Fidelity | Role | Narrative Impact of Choice | <i>Is the player’s in-game behavior consistent with the story’s depiction of the character or world?</i> |
| 3. Systemic Integration | Emergent–       |      | Progression–               | <i>Does the game’s structure support its narrative trajectory systemically?</i>                          |
|                         | Embedded        |      | Narrative                  |                                                                                                          |
|                         | Harmony         |      | Structure Sync             |                                                                                                          |

Each axis includes descriptive rubrics and guiding criteria for case study analysis. The instrument remains qualitative; the 5-point scale functions as an ordinal aid, not a standalone metric. For each game, assign a rating per axis from 1 to 5, anchored as 1 Disharmony, 2 Partial Disharmony, 3 Neutral, 4 Partial Harmony, 5 Harmony, and provide a brief evidence-based justification for the selected level.

To make judgments about harmony reproducible rather than impressionistic, the analysis proceeds on three practical units of analysis that match how narrative and systems present themselves in play. At the sequence level (mission/chapter/scene), we observe how beats are introduced, escalated, and resolved, and whether progression mechanics carry that rhythm or work against it. At the mechanic level (verbs, loops, economy rules, gating), we look at what behaviors the rules actually reward and whether those incentives enact the fiction the game claims (Salen & Zimmerman, 2003). At the feedback artifact level (camera behavior, HUD elements, audio/VFX cues, fail/restart states), we attend to tone and meaning: how the game “speaks back” to the player about what just happened and what kind of character they are meant to be (Isbister, 2016; Nitsche, 2009). Evidence may surface first at any of these scales; the important part is that every axis judgment can be traced back to concrete captures

at one or more of these units (Consalvo & Dutton, 2006; Lankoski, 2015). This multi-scale structure ensures that observations remain anchored in demonstrable design elements rather than broad impressions, allowing different evaluators to arrive at comparable judgments even when working independently.

Each LHEF axis is then read through a small family of indicators—not to force consensus, but to show the route by which an evaluator reached a label. For Mechanic–Theme Alignment, the question is whether core verbs and loop incentives enact the work’s themes (Salen & Zimmerman, 2003). Feedback–Narrative Consistency concerns the tone carried by UI motifs, camera rhythms, audio stingers, VFX, and failure states; the check is whether those channels reinforce the intended emotion at the moments that matter (Isbister, 2016; Nitsche, 2009). Player Role Fidelity examines whether reward structures, gating, and NPC/system responses steer the player toward in-character behavior—an idea that can be operationalized with heuristic prompts adapted from playability/UX traditions (Desurvire, Caplan, & Toth, 2004; Pinelle, Wong, & Stach, 2008). Narrative Impact of Choice asks whether consequential actions are recorded as state, surfaced back to the player, and echoed later in ways proportionate to the fiction’s stakes. Emergent–Embedded Harmony looks for authored content that leaves room for systems to tell parts of the story during play (Mateas & Stern, 2005; Wardrip-Fruin, 2009). Finally, Progression–Structure Synchronization reads difficulty, unlock pacing, and economy inflections against the plot’s arc—do mechanical ramps and release valves land where the drama needs breath or pressure (Ryan, 2015; Nitsche, 2009)? For usability, these families are mirrored by guiding questions and 1–5 descriptors in the printable worksheet (Appendix A), with a line at the top for platform/engine context to qualify expectations across formats (Lankoski, 2015)

### **3.4.2 Dimension 1: Synchronization**

Mechanic–Theme Alignment;

This axis assesses whether fundamental gameplay mechanics reflect, support, or metaphorically represent the narrative themes of the game. For instance, *Before Your Eyes* uses blinking as a literal and thematic tool to convey memory and transience.

Feedback–Narrative Consistency;

Concentrates on whether the feedback mechanisms of the game—HUD, animations, audio, reactions—support the desired narrative tone. *Dead Space's* diegetic HUD supports survival themes and immersion.

### **3.4.3 Dimension 2: Coherence & agency**

Fidelity of Player Role;

Examines if the player's in-game behavior—as mandated or incentivized by systems—matches the narrative framing of their character. A common cause of dissonance is disparity between protagonist design and gameplay behaviour (e.g., *Uncharted*).

Choice's Narrative Influence;

Assesses the mechanical and thematic narrative impact of player choices. Especially when decisions fit narrative stakes, games with dynamic repercussions or branching narratives (*Slay the Princess*, TTRPGs) tend to score better here.

### **3.4.4 Dimension 3: Systemic integration**

Emergent-Embedded Harmony;

Looks at how embedded narrative (authored material) and emergent gameplay (player improvisation) co-exist. *Outer Wilds* shows great harmony by letting players find narrative via systems instead of cutscenes.

### **3.4.5 Sync of narrative structure and progression**

Assesses whether the arc of the story is supported or undercut by game progression mechanisms—quests, upgrades, level structure. For instance, *Spider-Man* organizes side quests to mirror Peter Parker's "always-busy, always-divided" tension.

### **3.4.6 Evaluation procedure**

1. Case Analysis: Each selected game or experience is examined through the six LHEF axes.
2. Axis-Based Scoring: Each axis is rated qualitatively (*Disharmony* / *Neutral* / *Harmony*) with evidence from gameplay, developer commentary, and/or academic analysis.

3. Synthesis: Scores and justifications are synthesized to determine the game’s overall ludonarrative profile—harmonious, dissonant, or contextually complex.
4. Interpretive Summary: Findings are contextualized within the game’s genre, goals, and audience expectations.

From first pass to profile. In practice the analysis moves through a compact cycle. A first pass logs salient sequences and raw observations tagged to candidate indicators (role, tone, pacing). A coding pass reviews captures to assign codes at the three units of analysis and jot brief memos where evidence is ambiguous. Axis judgments are then drafted using the LHEF scale, with each label backed by at least one capture reference. During synthesis, we write a short harmony profile that highlights patterns and exceptions across axes. Finally, a quick counter-argument pass (“what would a skeptic say?”) checks for confirmation bias before finalizing the profile.

Calibration without new studies. To keep our readings honest—without recruiting participants—we optionally code a small, fixed sample of public, published texts (e.g., a dozen critic or player review excerpts per title) for the same indicators (role, tone, pacing). Agreement is not the goal; instead we look for triangulation: do public descriptions emphasize the same alignments or tensions our captures suggest? Disagreements are noted and used to refine indicator wording in the worksheet, improving clarity for junior evaluators while staying within a non-human-subjects scope.

This structure ensures that ludonarrative critique is not based on intuition alone, but on systematic assessment. It also allows for comparison between games of different scales, genres, and narrative structures.

### **3.4.7 Adaptability and limitations**

The LHEF is intended to be adaptable rather than prescriptive. It does not assign universal “good” or “bad” labels to ludonarrative states but seeks to reveal *how* and *why* alignment or dissonance occurs. Certain axes may be less applicable in abstract puzzle games, procedural experiences, or multiplayer systems; others may require weighting adjustments based on narrative centrality.

Nonetheless, its modular form allows researchers and designers to engage with ludonarrative structure in a wide fashion. It can be observed across diverse formats, from AAA titles to experimental indie games and analog systems like escape rooms or TTRPGs.

### **3.5 Analysis Procedure and Calibration**

This section describes how the qualitative method is enacted in practice so that another evaluator can reproduce the reasoning with the same artifacts and arrive at comparable justifications. It complements the framework descriptions that follow in Chapter 4—where the instrument (LHEF) is defined and its Evaluation process and Workflow of application are detailed—and keeps the present chapter focused on method rather than tool.

#### **3.5.1 From first pass to profile.**

Each case begins with close playing through three short, focused passes: story-first (beats, role framing, stated stakes), system/loop (verbs, incentives, gating, economy), and feedback/tone (camera, UI, audio, VFX, failure states). Across passes, we keep a light capture protocol (timestamps, targeted screenshots or short clips, brief field notes) and log platform/engine, difficulty, patch/version, and accessibility options. These captures make every claim traceable to concrete evidence and keep the work reproducible for non-experts (Bizzocchi & Tanenbaum, 2011; Consalvo & Dutton, 2006).

#### **3.5.2 Units and coding.**

Observations are coded at three granularities—sequence, mechanic, and feedback artifact—with codes aligned to the framework’s axis indicators (mechanic–theme alignment; feedback–narrative consistency; player-role fidelity; narrative impact of choice; emergent–embedded harmony; progression–structure sync). Short analytic memos accompany ambiguous evidence so interpretive choices are explicit (Lankoski, 2015; Consalvo & Dutton, 2006). This structured approach helps maintain consistency across captures, ensuring that each coded instance can be traced back to concrete, documentable moments in play rather than purely interpretive impressions.



### **3.5.3 Axis judgments and synthesis.**

Coded evidence is synthesized into axis judgments using the thesis scale (Disharmony → Neutral → Harmony), each with a brief justification and at least one capture reference. A compact harmony profile summarizes patterns and exceptions across axes for the game. Before finalizing, a brief counter-argument pass (“what would a skeptic say?”) checks confirmation bias and, where needed, refines wording or adds an additional capture (Lankoski, 2015).

### **3.5.4 Calibration without new studies.**

To keep readings honest—without recruiting participants or running experiments—a small, fixed sample of publicly available texts (e.g., a dozen critic or player review excerpts per title) is coded against the same indicators (role, tone, pacing). The goal is triangulation, not statistical validation: we ask whether public language emphasizes the same alignments or tensions our captures suggest. Where disagreements appear, they are noted and used to refine indicator wording in the worksheet so that junior evaluators are less likely to misread the prompts (Consalvo & Dutton, 2006; Bizzocchi & Tanenbaum, 2011).

### **3.5.5 Reliability, reflexivity, and ethics.**

Reliability is pursued through transparency rather than coefficients: we maintain a simple audit trail (capture list, timestamps, version notes); one case receives an intra-rater second pass after a short gap to check stability; and a brief reflexive memo records prior familiarity and mitigations (e.g., blind story-first pass, then theory-guided pass). Because the method analyzes released artifacts and public documents only, no human subjects are recruited and no ethics approval is required; images/clips are used under fair-use principles with full citation (Wardrip-Fruin, 2009).

### **3.5.6 Alignment with the framework chapter.**

This procedure deliberately stops short of prescribing rubric levels; Chapter 4 introduces the LHEF’s axis rubrics, evaluation process, and Workflow of application, and includes the worksheet that bundles guiding questions and space for capture references. The present section ensures that when those tools are used, the analyst’s path—from first pass to final profile—is clear and reproducible.



## **4. THE LUDONARRATIVE HARMONY EVALUATION FRAMEWORK (LHEF)**

### **4.1 Chapter Orientation**

This chapter turns the concepts consolidated in Chapter 2 and the qualitative procedure established in Chapter 3 into a usable instrument for evaluation. The aim is practical: enable an evaluator, not only an expert, to examine how mechanics, feedback, player role, choice, emergence, and progression align with declared narrative intent, and to justify each judgment with concrete evidence.

Four components structure the chapter. First, a shared five-label qualitative scale defines how axis-level judgments are reported, with 1 Disharmony, 2 Partial Disharmony, 3 Neutral, 4 Partial Harmony, 5 Harmony. Second, evidence rules specify how each label is warranted: at minimum one capture per axis tied to a unit of analysis, with platform, version, and difficulty noted for context. Third, a guided evaluation questionnaire translates the framework into concise prompts that a junior evaluator can follow in a single focused pass. Fourth, a one-page worksheet organizes the prompts and judgments, and a simple radar profile visualizes the six axes for comparison within reasonable bounds such as genre or platform families.

Readers who have completed the close-playing protocol in Chapter 3 can proceed directly to the questionnaire and worksheet. Numbers function as descriptive labels rather than scores and are not to be averaged. Cross-title comparisons are interpretive aids, not rankings. Chapter 6 explains how to read a harmony profile and shows how short samples of public critic and player texts can be coded to triangulate the analytic reading without human-subjects research. Appendices contain a printable worksheet, a questionnaire card, and a blank radar template.

### **4.2 Rationale and Research Contribution**

The relationship between gameplay and storytelling has long been one of the central questions in game studies. Since the early 2000s, academic discourse has frequently

positioned ludology (the study of games as rule-based systems) in tension with narratology (the study of games as storytelling devices). While the so-called ludology vs. narratology debate has since matured into more integrative perspectives, it left behind a valuable insight: that in interactive media, narrative and gameplay are not always in alignment, and when they are not, it has meaningful effects on the player experience (Aarseth, 1997; Juul, 2001; Jenkins, 2004). This chapter treats that alignment as a practical design and analysis problem, drawing directly on the qualitative procedure in Chapter 3 and turning it into a usable instrument for evaluators.

One of the most enduring concepts born out of this tension is ludonarrative dissonance—a term popularized by Clint Hocking (2007) in his critique of *BioShock*. Hocking identified a thematic rupture between the narrative’s moral ambiguity and the player’s violent actions, arguing that the game’s systemic incentives contradicted its story’s ethical framing. The concept was quickly adopted by critics and scholars alike to explain a range of similar contradictions across many high-profile titles. Where Chapter 2 surveyed the concepts and Chapter 3 established how to read released artifacts, Chapter 4 introduces LHEF 2.0 in applied form: a shared five-label qualitative scale, evidence rules that require traceable captures and context notes, a guided evaluation questionnaire that maps observations to axis judgments, and a one-page worksheet with a radar profile for clear communication.

What has emerged more slowly, however, is an equally robust vocabulary for describing the opposite condition: moments of ludonarrative harmony, where the narrative and ludic structures of a game are meaningfully aligned. In games like *Outer Wilds*, *Before Your Eyes*, or *Dead Space*, players experience a sense of unified intention across the mechanics, feedback systems, and narrative progression. These games often excel not only because of their stories or gameplay alone, but because of the way those elements mutually reinforce one another.

Despite increasing interest in ludonarrative harmony, especially among designers and critical theorists, the field still lacks a formalized evaluative framework for identifying and analyzing such harmony in a systematic way. Most existing methods for assessing narrative quality focus on plot structure, character arcs, or writing, while gameplay is evaluated through challenge design, feedback systems, or player engagement metrics. There are models for player experience (PX), narrative architecture, and procedural

rhetoric, but few that bridge the space between how mechanics function and how stories are told. This leaves a methodological gap where the interplay between systemic incentives and narrative intent is discussed conceptually but rarely operationalized in a way that supports consistent analysis.

This gap represents both a practical and theoretical shortcoming. From a design standpoint, it limits the tools available to creators who want to intentionally align mechanics with story. From a critical standpoint, it hampers efforts to diagnose ludonarrative misalignments or articulate why certain game experiences feel more “coherent” or “immersive” than others.

The Ludonarrative Harmony Evaluation Framework (LHEF) is proposed as a structured, qualitative response to this challenge. Built upon a close reading of existing theoretical work, combined with cross-media case analysis, the LHEF is designed to serve three primary academic and applied purposes:

1. To provide a systematic method for identifying ludonarrative alignment (or misalignment) across multiple dimensions.
2. To offer a critical vocabulary that can be used by scholars, critics, and designers alike to articulate experiential coherence in games.
3. To support cross-format narrative evaluation, enabling consistent discussion of ludonarrative dynamics in digital games, tabletop role-playing systems, escape rooms, and abstract or hybrid media.

The framework is especially valuable in contexts where:

- Player agency and interpretation shape narrative progression;
- Mechanics are metaphorically or symbolically loaded, such as blinking in *Before Your Eyes* or the time-looping in *Outer Wilds*;
- The game offers multiple layers of storytelling, from environmental cues to scripted cutscenes to systemic emergence;
- Narrative feedback is not delivered linearly, and where the player's interaction must “complete” the story experience.

Furthermore, the LHEF supports design-phase integration. Designers can use the framework to test narrative consistency during prototyping or vertical slice

development, evaluating whether gameplay systems communicate the intended thematic and emotional tone. At the same time, scholars can apply the model to analyze case studies or compare divergent implementations of similar narrative goals across different titles or genres.

While the LHEF is focused primarily on qualitative assessment, it maintains analytical rigor by offering clearly defined criteria across three interrelated dimensions—each broken into actionable sub-elements that can be interpreted consistently. These are not intended to reduce games to numerical ratings, but rather to foster descriptive precision, especially in evaluating moments of alignment or contradiction.

As a research contribution, Chapter 4 operationalizes the framework so results are traceable, comparable within reasonable bounds, and teachable. Numbers are descriptive labels rather than scores and are not to be averaged. Cross-title comparisons work best within genre or platform families.

Finally, this framework is meant to embrace cross-disciplinary thinking. It draws from media theory, interaction design, and game criticism alike, and takes seriously the idea that ludonarrative alignment is not a binary quality, but a spectrum—one that is culturally mediated, aesthetically nuanced, and deeply embedded in system logic.

As such, the LHEF is positioned not as a universal solution, but as a productive intervention: a way to begin thinking more clearly, precisely, and structurally about how games produce narrative meaning *through play*.

### **4.3 Framework Overview**

A qualitative analytical tool meant to gauge the level of congruence between a game's interactive systems and its narrative structure, the Ludonarrative Harmony Evaluation Framework (LHEF) Rather than suggesting a single gauge of success or failure, the LHEF offers a multidimensional framework for interpreting, describing, and contrasting harmony or dissonance between ludic and narrative components. Designed to guide both scholarly criticism and design praxis, it is relevant for a great range of game kinds—digital and analog alike.

This section summarizes the evaluation framework as it is used in practice. It connects the dimensions defined in Chapter 2 with the qualitative procedure from Chapter 3, and it prepares the reader for the shared five-label scale, the evidence rules, and the

guided questionnaire introduced later in Chapter 4. Comprising three fundamental dimensions, the framework aims at different aspects of the ludonarrative interaction:

1. Mechanics–Narrative Synchronization
2. Player Agency & Narrative Coherence
3. Systemic Storytelling Integration

Every one of these aspects is split into two operational criteria, therefore producing six total points of analysis. The model is meant to enable structured reflection without lowering complexity to numerical scoring. Based on contextual interpretation and data from the game's design, evaluators are urged to judge each criterion using qualitative descriptors. Axis judgments use a five-label qualitative scale, with 1 Disharmony, 2 Partial Disharmony, 3 Neutral, 4 Partial Harmony, 5 Harmony, and each label is justified by at least one capture tied to a unit of analysis, with platform, version, and difficulty noted.

The framework reads six axes that group the questions an evaluator will ask during a focused pass:

**Mechanic–Theme Alignment.** Do the core verbs and incentives enact the work's themes in moment-to-moment play, rather than sitting alongside the story in cutscenes only.

**Feedback–Narrative Consistency.** Do camera behavior, HUD and UI elements, audio and music cues, visual effects, and failure states carry the intended tone at the moments that matter.

**Player Role Fidelity.** Do rewards, gating, and system or NPC reactions keep the player in character, or at least acknowledge when play departs from the role the fiction sets.

**Narrative Impact of Choice.** When the game signals that a choice matters, is that state recorded, surfaced to the player, and echoed later in a way that fits the stated stakes.

**Emergent–Embedded Harmony.** Do unscripted, system-driven moments fit the authored narrative rather than fighting it, and does the authored layer leave space for those moments.

Progression–Structure Synchronization. Do difficulty, unlock pacing, and economy shifts align with the plot’s arc, so mechanical peaks and lulls land where the drama needs pressure or breath.

Each axis will later receive a label on the five-point qualitative scale, accompanied by a brief justification tied to specific captures and context notes.

The next sections define the common scale and evidence rules (4.3) and present the guided questionnaire with the worksheet used in application (4.4).

#### **4.3.1 Dimension 1 – mechanics–narrative synchronization**

This dimension examines whether the narrative being told is supported or contradicted by the fundamental mechanics and feedback systems in a game. It stresses semantic alignment, whereby the action vocabulary of the game fits its narrative and thematic objectives.

Reading this dimension begins from the narrative contract. State the intended player role, stakes, and tone in one or two sentences, then assess whether the described systems enact that intent in moment-to-moment play. Prompts in 4.4 will walk the evaluator through this contract-first step.

##### **Mechanic–Theme Alignment:**

This criterion investigates whether the verbs of play—what the player actually does—are thematically in line with the tone and purpose of the narrative. The blinking mechanism in *Before Your Eyes* (2021), for instance, reflects the themes of memory, impermanence, and emotional closure of the narrative. Likewise, *Papers, Please* (2013) investigates moral weariness, complicity, and bureaucracy via document inspection.

Dissonance results from the main mechanics promoting behavior contrary to the narrative identity of the protagonist or the ethical framing of the story, as seen in *Tomb Raider* (2013) or *Uncharted* (2007), where narratives of vulnerability and heroism are contrasted against mechanics that reward indiscriminate violence.

##### **Feedback–Narrative Consistency:**

Feedback systems—including UI, HUD components, sound design, and visual effects—can either enhance or undermine narrative immersion. Famous for minimizing outside disturbance with the horror ambiance of *Dead Space* (2008), all



necessary player information is deftly woven into diegetic displays on the character's body or environment. On the other hand, especially in games striving for immersion, generic HUD overlays or non-diegetic interface cues could compromise narrative coherence.

Consistency across feedback mechanisms guarantees that player perception, input, and interpretation stay anchored inside the fiction of the game.

#### **4.3.2 Dimension 2 – player agency & narrative coherence**

This aspect emphasizes how the game places the player inside the narrative world and whether the role, identity, and choices given to them fit the written narrative framework.

Use the contract's tone line as the reference. Camera behavior, HUD and UI elements, audio and music cues, visual effects, and failure states should carry that tone at moments of emphasis. The questionnaire in 4.4 provides concise checks that translate this dimension into answerable prompts.

##### **Player Role Fidelity:**

A game attains role fidelity when the player's in-game actions support and reflect the role they are asked to perform narratively. Side quests, chance encounters, and multitasking features all reflect Peter Parker's hectic schedule in Marvel's Spider-Man (2018), therefore supporting the character's theme of responsibility and time constraint.

Dissonance results when player behavior implies a different identity or personality than the one pushed by the game's narrative. A protagonist depicted as pacifist or conflicted in cutscenes, for example, may still engage in massive violence during gameplay sections with no repercussions or discordant tone.

##### **Narrative Impact of Choice:**

This standard assesses whether decisions made by the player during gameplay have narrative significance. Are the results thematically grounded, significant, and diverse? Or are they superficial—providing the appearance of agency without narrative or systematic consequence?

Though they lead to practically same conclusions, BioShock (2007) is a well-known case of choice systems claiming moral dilemma (rescue vs. harvest the Little Sisters). By contrast, Slay the Princess (2023) offers genuine reactive storytelling by means of branching routes completely integrated into the central narrative logic of the game.

#### **4.3.3 Dimension 3 – systemic storytelling integration**

This dimension assesses how the delivery and unfolding of the narrative interacts with the general structure of the game's systems and progression mechanics.

Begin from the contract's role and stakes. Check whether rewards, gating, and system or NPC reactions keep the player in character, whether claimed choices are recorded and echoed at proportionate moments, whether emergent moments fit the authored context, and whether difficulty and unlock pacing land where the plot needs pressure or breath. 4.4 provides prompts for each of these checks.

##### **Emergent–Embedded Harmony:**

This is the degree of alignment between emergent systems—such as physics, artificial intelligence, procedural interaction—and embedded storytelling—such as cutscenes, logs, authored dialogue. The whole story of Outer Wilds (2019) is findable by means of systematic investigation; no cutscenes or dialogue trees are needed to grasp the core narrative.

Disharmony can result from systematic gameplay contradicting, undermining, or interrupting authored narrative components or from embedded narrative moments feeling disconnected from the systems through which the game is played.

##### **Progression–Narrative Structure Sync:**

This last criterion evaluates whether the pacing and design of the game's levels, unlock systems, or missions reflects the emotional arc or thematic evolution of the narrative. Does the game framework support the character's journey or the development of narrative stakes?

In Dead Space, for instance, the narrative descent into chaos is reinforced by the gradual unlocking of ship areas, which supports both survival and narrative pressure. On the other hand, a badly integrated system could include grind-heavy leveling, monotonous side quests, or structural bloat robbing the core narrative drive.

#### **4.3.4 Evaluation process**

Evaluation proceeds with a contract-first read, followed by a guided pass that addresses each axis using the five-level qualitative scale. The common scale and evidence rules appear in 4.3. The guided questionnaire and worksheet used for application appear in 4.4.

Rather than depending just on impressions or summaries, the model promotes annotated assessment in which the evaluator records specific game quotations and examples. The LHEF is most effectively used by means of:

- Play session close reading
- Comparison across design iterations or genre counterparts
- Integration of player feedback or retrospective postmortems

Importantly, it is non-prescriptive: not all dissonance is bad. Dissonance might have a thematic purpose in certain situations—satire, horror, or intentional discomfort. The LHEF is therefore more about clarifying relationships between system and narrative than about judgment.

#### **4.4 Global Rating Scale and Evidence Rules**

A five-point qualitative scale is used to evaluate each axis, where 1 represents “Disharmony”, 5 represents “Harmony”. To maintain consistency, each level is defined through a clear descriptor that specifies the conditions required for that rating. A score of 1, labeled Disharmony, reflects a complete collapse in ludonarrative alignment in which game mechanics offer no meaningful support for the story and contradictions between narrative and gameplay are widespread. A score of 2, labeled Partial Disharmony, indicates that a few minor points of alignment may appear, yet the overall experience is shaped by notable dissonances. A score of 3, defined as Neutral, represents a middle ground in which narrative and mechanics neither reinforce nor conflict with one another in a strong or consistent way. A score of 4, labeled Partial Harmony, suggests that gameplay and story are broadly coherent and supportive, with only occasional inconsistencies. A score of 5, labeled Harmony, denotes a near-complete alignment in which mechanics consistently reinforce narrative elements and the two operate together in a coherent and integrated manner.

These threshold definitions help evaluators determine when an axis shifts from a 2, which represents a mostly dissonant state, to a more balanced 3, or from a largely harmonious 4 to a fully harmonious 5. In practice, this ordinal rating structure captures degrees of integration rather than treating ludonarrative alignment as a simple binary condition. This approach is consistent with other rubric-based game analysis methods that employ five-point Likert-style scales to assess the strength of ludonarrative consistency. Donoghue’s Ludonarrative Analytical Framework, for example, uses a five-level scale to evaluate how mechanics, visuals, user interface, and narrative tone align, enabling comparison across different works. In a similar way, Saldivar’s study of *Cyberpunk 2077* discusses narrative and play interactions as existing along a spectrum that ranges from consonance to dissonance depending on the extent of narrative–mechanic integration. Following these precedents, the five-point scale used in this framework offers a structured yet flexible way to assess the presence of harmony or dissonance, with each numerical value supported by qualitative criteria and evidence drawn directly from the game.

#### **4.4.1 Evidence rules**

Every axis judgment cites concrete, traceable evidence and minimal context so another reader can audit the reasoning.

Minimum capture requirement. At least one capture per axis judgment: a timestamped note, still image, or short clip.

Unit of analysis tag. Tie each capture to one unit of analysis: sequence, mechanic, or feedback artifact.

Context note. Record platform or engine, game version or patch, difficulty or major settings that affect behavior.

Contract reference. Anchor the judgment to the title’s narrative contract: role, stakes, tone, and thematic intent.

Justification. One compact paragraph per axis explains how the capture and context support the label.

#### **4.4.1.1 Handling special cases.**

When a patch changes relevant behavior, note the version and qualify the claim. If the work intends dissonance, log the intention and evaluate whether the implementation serves the stated aim rather than penalizing it by default.

#### **4.4.1.2 Comparisons and aggregation.**

Do not average labels across axes or titles. Cross-title comparisons are descriptive and work best within genre or platform families. The harmony profile is read qualitatively, with attention to where alignment is robust or fragile.

#### **4.4.1.3 Ethics and scope.**

Analysis uses released artifacts and public documents. No human subjects are recruited. Captures are used with citation and for research and critique.

With the common scale and evidence requirements in place, 4.4 presents a guided questionnaire and worksheet that translate observations into axis judgments in a single focused pass.

### **4.5 Axis Guides**

This section translates the framework into what an evaluator should look for on each axis. The guides are written in plain prose, not as checklists. Each guide assumes that the Narrative Contract (role, stakes, tone, themes) and the Ludic Contract (core verbs, loops, incentives, gating, failure and recovery) are already written on the worksheet. Axis labels use the shared five-point qualitative scale defined earlier, and every judgment is supported by evidence in the form of a screenshot or a short clip, tagged with a unit of analysis and brief context.

#### **4.5.1 Mechanic–theme alignment**

This axis examines whether the dominant actions and incentive structures enact the themes and claims stated in the contracts. Start by naming the two or three loops that dominate time on task. Describe, in ordinary language, what the loop motivates players to do and why. Then test the fit against the themes and the stated role: if the fiction centers responsibility and restraint, do the loops make restraint profitable, costly when ignored, and legible as a meaningful stance?

Positive signals include verbs that make the role feel necessary, reward ladders that reinforce the theme rather than undermine it, gates that open when the fiction suggests readiness, and failure conditions that reflect the work's risk calculus. Look for evidence that the loop teaches the values the story claims, not just that it coexists with the story.

Red flags include grind incentives that trivialize a stated crisis, economy exploits that invert risk or stakes, and tourist activities that dominate play while the fiction claims urgency. If misalignment appears purposeful, record the intention and the in-text cue that signals it. Otherwise, propose one design lever that would move the label upward, such as reweighting rewards, adjusting gate criteria, or relocating a resource faucet.

Evidence can be a clear screenshot of an economy or quest state that reveals incentives, or a short loop clip that shows the reward pattern. Tag the unit of analysis as mechanic or sequence and include a one-line context note.

#### **4.5.2 Feedback—narrative consistency**

This axis attends to how presentation channels carry tone at the moments that matter. Examine camera behavior, HUD and UI elements, audio and music, visual effects, typography, and the dramaturgy of failure and recovery. Begin with a representative failure incident, then a reveal or dramatic beat, and finally a traversal or routine segment to see how stance holds across contexts.

Positive signals include quiet, legible failure states in tragic frames, restrained overlays during high-stakes beats, sound and mix rules that support tension or release, and camera motion that frames the player's role rather than undercutting it. Consistency across modes is important: combat, exploration, dialogue, and menus should speak the same tonal language unless a shift is intentionally marked.

Breaks in tone include celebratory notifications during solemn beats, comic stingers over scenes that ask for gravity, or cameras that turn intimate scenes into spectacle without narrative warrant. If a tonal break is purposeful, note the cue that makes intent legible. Otherwise, identify one lever, such as suppressing notifications at tagged beats, retiming overlays, adjusting camera locks, or revising mix priorities.

Evidence can be a screenshot of an interface change that occurs during a beat or a short failure or reveal clip that captures timing and emphasis. Tag the unit of analysis as a feedback artifact and add a brief context line.

#### **4.5.3 Player role fidelity**

This axis asks whether systems keep the player in character or at least acknowledge departures. The Narrative Contract names who the player is supposed to be and what is at stake. The Ludic Contract reveals how the game treats the player through incentives, gates, reactions, and recovery. Together they set expectations for behavior and response.

Probe with a deliberate out-of-character action and observe what the game does. Consider UI hints, AI barks, faction or reputation flags, stealth heat, and soft fail states. Alignment is visible when off-role behavior carries a cost, draws a response, or is framed by the game as aberrant in a way that supports the fiction. In-role behavior should feel legible and supported by affordances, rewards, and timing.

Red flags include systems that ignore off-role behavior when the fiction claims consequences, reward ladders that pull players away from the claimed identity, and gates that require behavior the story disavows. If friction is intentional, log type, scope, and the cue that signals purpose. Otherwise, propose a lever, such as reweighting rewards, surfacing reputation changes, adding bark rules, or inserting soft fail escalations.

Evidence can be a screenshot that captures a reaction state or a short clip showing an NPC or system response. Tag the unit of analysis and include context.

#### **4.5.4 Narrative impact of choice**

This axis evaluates whether a choice that is presented as consequential becomes mechanically true. Look for three things. First, whether the state is stored in a way visible to the system or to the player. Second, whether the consequence is surfaced back to the player at the right time and in the right channel. Third, whether the echo appears later at a weight proportionate to the stated stakes.

Strong alignment feels like continuity of meaning rather than only continuity of logic. The player should be able to see or infer that the world remembers the decision and that the result fits the tone and themes. Not every choice must be far reaching, but the

game should signal scope clearly. Clear signaling ensures that players understand the narrative weight of their actions, preventing mismatches between perceived and actual consequences that could disrupt harmony.

Red flags include big promises that resolve into cosmetic changes only, choices that are recorded but never surfaced, and echoes that arrive long after the dramatic window has closed. If limited impact is intended, record the intention and the cue that frames expectation. Otherwise, propose a lever such as surfacing state earlier, relocating a reveal, or adding a simple systemic ripple that touches play.

Evidence can be a before and after pair of screenshots or a short clip at the moment of consequence. Tag the unit of analysis and add context.

#### **4.5.5 Emergent–embedded harmony**

This axis looks at how authored content and systems cooperate to produce story. Most works mix embedded narrative with emergent incidents. Harmony means authored beats leave space for systems to speak, and when systems do speak, their outputs are readable as story, not noise.

Use one genuine emergent incident to judge whether the system’s output has meaning handles the player can grasp. Then inspect a spatial discovery to see whether level composition, props, and traces carry exposition that the player can enact. A good fit feels like a conversation between authored arcs and systemic dynamics, not a collision.

Red flags include emergent events that read as random outliers with no aftermath or acknowledgement, collectible density that drowns meaning, and spatial layouts that gesture at story but never feed back into play. Levers include adding aftermath traces, tuning spawn logic, pruning scatter, revising bark rules, and tightening spatial composition so discoveries are legible.

Evidence can be a short incident clip or a clear discovery screenshot that shows how space carries exposition or how a system produces a meaningful twist. Tag the unit of analysis as mechanic, feedback artifact, or sequence, and include context.

#### **4.5.6 Progression–structure synchronization**

This axis compares mechanical ramps to narrative arcs. Difficulty curves, resource availability, unlock timing, and economy slopes should land with the dramatic



structure implied by the contracts. Pressure should rise as stakes rise; breath should arrive where reflection is due; inflection should mark act turns.

Begin by marking a few structural beats, then check whether resource and difficulty lines cooperate. Look at gating and unlock order, economy sinks and faucets, difficulty modifiers, and recovery rhythms. Ask whether the pacing of mechanical challenge and release helps the intended reading rather than fighting it.

Red flags include late unlocks that flatten stakes, mid-act spikes that ignore beats, grinds that stall momentum, and economic windfalls that trivialize tension. Levers include retiming gates, reordering unlocks, adjusting sink and faucet rates, or moving difficulty modifiers to align with turns.

Evidence can be a screenshot of a gate, tree, or economy state, and a short moment that shows a turn if timing is the point. Tag the unit of analysis and include context.

Across all axes, labels are descriptive rather than numerical scores. Do not average labels across axes or titles. Cross-title comparisons are interpretive aids and work best within genre or platform families. Intentional dissonance should be logged with its purpose and cues and judged on implementation quality rather than penalized by default.

## **4.6 The Worksheet**

This section defines the single-page worksheet used to record contracts, axis labels, justifications, and captures. It is written to be read alongside the axis guides in §4.4 and the shared scale and rules defined earlier. Screenshots are acceptable as evidence whenever a still communicates the observation; short clips are optional when motion or timing matters.

### **4.6.1 Header**

List the basic context at the top of the page so later readers can interpret evidence correctly.

Game title.

Build or patch.

Platform or engine.

Difficulty or key settings.

Evaluator.

Date.

Optional: a short playtime window or chapter range for the evaluated material.

#### **4.6.2 Contracts**

Write two short boxes at the top of the worksheet. Keep wording concrete and use the work's own language where possible.

Narrative Contract. State the intended player role, the central stakes, the prevailing tone, and the themes the work claims to express. Keep this to two or three sentences.

Ludic Contract. State the core verbs and loops, what they reward or gate, how failure and recovery work, and the broad promise of progression. Keep this to two or three sentences.

Both contracts should remain visible during evaluation. If they evolve as understanding improves, strike through the older line, add the revision underneath, and date it. Do not interpret in these boxes; transcribe what the work asserts and what play reveals.

#### **4.6.3 Axis Blocks**

Provide one compact block per axis. Each block contains a label, a short justification, and a design lever. Axes are: Mechanic–Theme Alignment; Feedback–Narrative Consistency; Player Role Fidelity; Narrative Impact of Choice; Emergent–Embedded Harmony; Progression–Structure Synchronization.

Label. Assign one value on the five-point qualitative scale: 1 Disharmony, 2 Partial Disharmony, 3 Neutral, 4 Partial Harmony, 5 Harmony.

Justification. Write two to four lines that point to at least one capture and explain how the observation supports the label. Mention the relevant part of the contracts and name the unit of analysis.

Design lever. Write a single line naming the most direct fix or reinforcement the evidence suggests. Use plain verbs. Examples include reweight rewards, retune gate, surface state earlier, suppress notification at beat, adjust spawn window, tighten

camera lock. The goal is to articulate the smallest actionable change that would strengthen the intended narrative–mechanic relationship without altering the broader design.

#### **4.6.4 Captures and unit tags**

Evidence can be screenshots or short clips. Screenshots are acceptable wherever a still communicates the observation clearly. Clips are optional and used when motion, timing, or sequence matters.

For each capture, include three small notes beside the axis justification.

Unit of analysis. Tag one of: sequence, mechanic, or feedback artifact.

Reference. Provide a simple, human-readable pointer that lets a reader relocate the moment. A timestamp, a mission name, a room name, or a menu path is sufficient.

Context. Copy any relevant header items that affect behavior, such as build or difficulty, and add a brief phrase that ties the capture to the contracts.

#### **4.6.5 Logs**

Use the two small logs at the bottom of the worksheet to keep justifications concise and to prevent edge cases from distorting labels.

Intentional Dissonance Log. Record purposeful friction the work appears to seek, the cue that signals intent, and the place where the intent is most visible. Example entries might include humor in a grim setting or a celebratory sting on a hollow victory that is framed as bitter.

Misalignment Log. Record stray contradictions or anomalies that do not belong inside an axis justification. Example entries might include a one-off UI tone break or a pacing bump caused by an outlier spawn. Note whether the issue recurs.

#### **4.6.6 Footer and quality checks**

Add a short reminder line at the end of the worksheet:

Labels are qualitative and auditable. Each axis has at least one capture, one unit tag, a brief context note, and an explicit reference to the contracts. Numbers are descriptive labels rather than scores and are not averaged. Cross-title comparisons are interpretive aids and work best within genre or platform families.

Before finalizing, run three quick checks:

Traceability. Can another reader find each capture from the reference note.

Proportion. Does each justification reflect the weight of the observed effect in play rather than a single memorable moment.

Clarity. Would a junior evaluator understand the lever line and be able to try it or explain it to a peer.

This worksheet is the primary record for a case. The guided evaluation in §4.6 turns the contracts and these boxes into a single, focused pass and a short harmony profile.

## **4.7 Guided Evaluation Questionnaire**

This questionnaire makes the framework usable by any evaluator, whether film or narrative lead, or systems or game designer, by first articulating what the work promises (the Narrative Contract) and what the system actually offers (the Ludic Contract), then translating those statements into judgments on the six axes. Prompts are precise (not yes or no), the mappings to axes are explicit, and every answer is tied to evidence, with captures at a declared unit of analysis.

### **4.7.1 Establish the contracts**

Narrative Contract (feeds all axes; anchors Mechanic–Theme and Feedback–Narrative).

In three to five sentences, state what the work is about (premise; key themes), the intended tone or mood range (which emotions belong and which do not), and the player’s intended role and stakes (who the player is supposed to be; for whom consequences matter). Write this in plain language you can point back to later.

Ludic Contract (feeds all axes; anchors Role Fidelity and Progression–Structure).

In three to five sentences, state the core verbs and loops that occupy most play and what they reward or gate; the logic of failure and recovery (what failure teaches; how recovery frames the role); and the broad promise of progression (how difficulty, economy, or abilities change over time and what pacing the system implies).

Keep both contracts visible on the worksheet. If you refine either later, strike through the earlier wording, note the revision, and initial it; contract drift often explains axis tension.

#### **4.7.2 Mechanics and incentives**

Name the dominant activity and what it teaches, then probe what happens when you behave out of character.

- Describe the two or three loops that dominate time on task, and explain how their incentives enact, or sidestep, the themes declared in the Narrative Contract. (Axis: Mechanic–Theme. Evidence: a short loop clip or an economy or quest-state still; unit: mechanic or sequence. )
- Explain what behaviors the game repeatedly rewards or gates, and say plainly what fictional value that pattern communicates to the player. (Axes: Mechanic–Theme; Role Fidelity. )
- Perform an out-of-character action relative to the stated role; describe the system or NPC response and what it teaches about who you are allowed to be. (Axis: Player Role Fidelity. Evidence: an off-role test clip or reaction still; unit: mechanic or feedback artifact. )

Intentional dissonance fork. If a loop contradicts the contract on purpose, record the purpose (satire, alienation, moral friction), the scope (scene, act, or systemic), and the cue to intent (framing, motif, meta-text). If the break appears unintended, note the likely cause (incentive structure; economy slope; gate placement) and a design lever.

#### **4.7.3 Feedback and tone (feedback–narrative consistency)**

Read what the game says back at key moments and whether that speech matches the promised tone.

- Choose a representative failure: what do camera, audio, VFX, and on-screen text make you feel, and how does that align with the tone the Narrative Contract sets. (Axis: Feedback–Narrative. Evidence: a failure or retry clip, or a clear still; unit: feedback artifact. )

- At a reveal or dramatic beat, does interface behavior amplify or step on the moment (notifications, HUD chatter, comic sfx, typography). Explain the effect. (Axis: Feedback–Narrative. Evidence: a UI state-change still or short clip. )
- Characterize the HUD’s stance (diegetic, neutral, ironic) and how consistently that stance holds across contexts (combat, traversal, dialogue). (Axis: Feedback–Narrative. )

Intentional dissonance fork. If a tonal break is purposeful (irony or subversion), note the signal that makes intent legible. Otherwise, suggest levers (notification suppression at tagged beats; toast timing; mix priorities; camera rule changes).

#### **4.7.4 Progression and structure (progression–structure synchronization)**

Align system ramps with dramatic turns.

- Mark the first structural turns you observe and name the mechanical changes that signal them (difficulty inflection, unlock, resource slope). Explain why the timing supports, or undermines, the arc. (Axis: Progression–Structure. Evidence: a gating or curve artifact still, with an optional turning-point clip; unit: sequence or system. )
- Describe one instance where the pressure or relief rhythm of systems lands with, or drifts from, the story’s beat; say what the system is doing to time and stakes. (Axis: Progression–Structure. )

#### **4.7.5 Choice and echo (narrative impact of choice)**

Test whether “this matters” is mechanically true and legible.

- Select a choice the game frames as meaningful; identify where it is stored as state, how it is surfaced back to the player, and when its echo arrives. Is the weight proportionate to the stakes claimed.(Axis: Narrative Impact of Choice. Evidence: before or after stills, or an echo clip; unit: sequence or system. )
- If choices branch lightly (cosmetic) versus heavily (plot or state), explain how legibility is handled before and after the choice. (Axis: Narrative Impact of Choice. )

Intentional dissonance fork. If limited consequence is a deliberate theme (futility; fatalism), note the narrative purpose and how the player is cued; otherwise propose a lever (surface the flag; move the reveal; add a systemic ripple).

#### **4.7.6 Emergence and space (emergent–embedded harmony)**

Ensure systems have room to speak and that their speech is readable as story.

- Describe one emergent incident (AI, physics, economy). Could another player recognize its meaning from on-screen cues, and how does that meaning relate to the contract themes. (Axis: Emergent–Embedded. Evidence: a short incident clip or a clear still; unit: mechanic or feedback. )
- Explain how authored space and props invite discovery that reinforces the theme, or how they dilute focus into collectible noise. Name one concrete example. (Axis: Emergent–Embedded. Evidence: a discovery screenshot; unit: sequence or space.)

#### **4.7.7 Synthesis: Labels, dissonance, and design levers**

For each axis, write a two to four line justification that (i) names the unit of analysis for the cited capture or captures, (ii) references the contracts in ordinary language, for example “loop X enacts theme Y by rewarding Z,” and (iii) assigns a one to five label using the global descriptors in §4.2. If the label is 1 or 2, add one additional capture and state whether the issue is isolated, act-bound, or systemic. Log any intentional dissonance in the dedicated box (type, scope, cue, design aim). Note one design lever per axis, an actionable change most likely to move the label upward.

Finish by assembling the radar and writing the harmony profile paragraph, six sentences, one per axis, pattern plus exception. Close with a single-sentence conclusion that answers: given its contracts, what is this game trying to achieve; how well does it enact that aim across axes; and which one lever would most improve alignment. If you performed a small public-text calibration (Chapter 6), add a one-line pointer, for example “Critic or player excerpts broadly echo the role-fidelity claim.”

##### **4.7.7.1 Minimum evidence reminder**

Mechanic–Theme: one short loop clip or one economy or quest-state still.

Feedback–Narrative: one failure clip or still, plus one UI state-change still.

Role Fidelity: one off-role test clip or a reaction still.

Choice Impact: before and after stills, or an echo clip.

Emergent–Embedded: one emergent incident clip or still, plus one discovery still.

Progression–Structure: one gating or curve artifact still, optionally a turning-point clip.

Every capture must be tied to a unit of analysis and supported by a simple reference the reader can relocate. Ambiguities belong in a one-sentence memo; disagreements are documented, not hidden. Context is recorded in the worksheet header.

#### **4.8 LHEF in Active Development**

This framework can and is meant to be used more than once on the same project if the artifact is in active development. The questionnaire and the worksheet stay the same; only the contracts and captures change as the game evolves. What follows is a practical path for applying LHEF in common production and research contexts without turning it into a burden.

Concept / narrative pitch:

At the concept stage, write the Narrative Contract first (premise, tone, role, stakes), then draft a provisional Ludic Contract from the verbs and loops you believe will carry the experience. Run the Mechanic–Theme and Role Fidelity prompts from §4.5 in a paper exercise or with a white-box prototype: you are testing whether the promised verbs plausibly enact the theme and role. Capture sketches, not footage; label axes in prose (“expected alignment”) and record design levers as hypotheses.

Vertical slice / first playable:

Here the system has enough shape that Feedback–Narrative and Progression–Structure become testable. Re-affirm both contracts (they often drift after prototyping), then answer §4.5’s feedback prompts with real captures (failure vignette; reveal moment; HUD stance) and note whether ramps and unlocks land where early structure suggests they should. If labels are 1–2 on these axes, record the scope (isolated scene vs. systemic) and propose levers (notification suppression at tagged beats; unlock re-ordering).



Alpha / content-complete:

Run the full questionnaire. Choice Impact and Emergent–Embedded are now visible: pick one meaningful choice and a genuine emergent incident; ensure state is surfaced and emergence has meaning handles. When three or more axes sit at “3 – Mixed,” schedule a deep-dive pass using §3.5’s fuller coding to resolve ambiguity. If intentional dissonance is present in an axis, use the log to record type, scope, cue, and design aim so it does not read like an oversight to other stakeholders.

Beta / balance:

Expect Progression–Structure to shift fastest. Re-run only those prompts, re-capture the gating/curve artifact, and annotate the worksheet with deltas (what changed; why; effect on label). If economy tuning collapses scarcity or over-inflates power, the radar will show the drift; record the lever you used and keep the before/after mini-radar for the change log (§4.8).

Certification/launch / post-release reading:

For artifact studies and critical analysis, the contracts come from the shipped text: what the released build declares and rewards. Complete the questionnaire, assemble the radar, and—if desired—perform the public-text calibration in Chapter 6 (code a small, fixed sample of critic/player excerpts for the same indicators and summarize directional agreement). This does not validate the framework; it triangulates plausibility.

Team rhythm (lightweight):

Treat each run as producing a bundle: (i) captures index, (ii) worksheet PDF, (iii) radar, (iv) harmony profile paragraph, and (v) an optional calibration note. Keep bundles dated and versioned so you can compare builds. The instrument remains qualitative: numbers summarize arguments and are never KPIs.

## **4.9 Output Package and Change Tracking**

An LHEF run produces a small, durable bundle that makes your judgment auditable and easy to compare over time. The content is qualitative; the point is traceability, not scorekeeping.

Standard bundle (one folder per run):

- Capture index (filenames, timestamps, unit of analysis; any memo IDs).
- Worksheet PDF (contracts; six axis blocks; design levers; Intentional Dissonance Log; Misalignment Log).
- Radar image (six axes, labeled with version/build and date).
- Harmony profile paragraph (six sentences + one-line conclusion/primary lever).
- Calibration stub (if used): pointer to Chapter 6 excerpts and a one-line summary of directional agreement/disagreement.

Versioning and comparability:

- Keep a context header in the worksheet (platform/engine, difficulty, build/patch). Differences here change what “same game” means; make them explicit.
- When a build changes, add a delta card: for any axis that moved, list what changed, why it changed (lever or patch), and how the evidence shifted (old capture ID → new capture ID).
- For quick visual comparison, keep a before/after mini-radar overlay and annotate axis deltas (+1, −1).
- If contracts evolved, retain the struck-through original and the revised contract on the worksheet; contract drift often explains label movement.

Multi-evaluator notes (when two people run LHEF):

- Do not chase coefficients. Record a brief reconciliation note: where labels differed, the evidence each person leaned on, and the wording change (if any) added to the axis prompt to reduce future ambiguity.
- Keep both radars if disagreement reflects interpretive stance rather than evidence scarcity; LHEF treats such tension as informative.

Privacy/ethics:

- Use only materials you are permitted to capture. Respect NDAs/embargoes; watermark internal captures if needed.

- When quoting public texts (for calibration), follow citation norms. Images and clips used for illustration fall under fair-use commentary but should be short, necessary, and cited.

## **4.10 Applicability**

Deliberately broad in scope yet exact in use, the Ludonarrative Harmony Evaluation Framework (LHEF) is. Its worth is not only in its capacity to analyze current works but also in its flexibility across various media, sizes, and academic settings. This part describes the fields in which the LHEF may be used and explains how its adaptability enables a broad spectrum of evaluative objectives—from critical analysis to practical design input.

### **4.10.1 Application across game types and scalesizes**

Virtually any kind of interactive narrative, including but not limited to:

Digital narrative games—e.g., Firewatch, Disco Elysium, The Last of Us

System-driven games featuring emergent storytelling—for example, Dwarf Fortress, Outer Wilds

Closely connected ludonarrative experiences—e.g., Before Your Eyes, Dead Space

Large-scale open-world games—e.g., Red Dead Redemption 2, Spider-Man

Indie and experimental games, particularly those with metaphorical mechanics (e.g., Papers, Please, Journey)

Analog games: narrative board games, escape rooms, tabletop role-playing games (TTRPGs), and even abstract games with thematic layers (e.g., Chess, Gloomhaven)

The framework is not limited by platform, production budget, or narrative genre since it runs through qualitative description and contextual analysis. The LHEF is still pertinent whether one is judging a AAA title with complicated systematic layers or a short narrative prototype in a university project.

### **4.10.2 Game designer and development team use**

Design processes at several stages can include the LHEF:

Pre-production: to match mechanical prototypes with narrative goals.

Production: to evaluate consistency in fundamental systems prior to complete production.

Postmortems: to examine shipped titles, particularly when design objectives and player response differed.

User testing: to collect concentrated input on ludonarrative alignment in player experience.

The LHEF lets designers spot discrepancies between intention and execution early in the process by stressing specific system-narrative connections. Its standards enable teams to identify whether dissonance results from structural pacing, feedback clarity, or conceptual conflict between narrative arcs and gameplay verbs.

Moreover, the modularity of the system allows for cross-departmental cooperation—narrative designers, system designers, and UX leaders can all engage in shared assessments utilizing the same terminology and standards. The LHEF thus not only an analytical tool but also a means of cross-disciplinary communication during the development process.

#### **4.10.3 Application in game studies and academic research**

The LHEF offers for academics in narrative theory, interaction design, and game studies:

A systematic framework for evaluating games across genres and historical periods.

A system for thesis-level research, case studies, and comparative discourse.

A method for emergent narrative analysis, particularly in games with sandbox systems or procedural mechanics.

A basis for player experience research, where narrative consistency is assessed together with agency and feedback interpretation.

Critically, the framework promotes close reading of game systems—not just text, dialogue, or aesthetics. It encourages academics to consider procedural progression, environmental storytelling, feedback loops, and rules as narrative agents. Emphasizing the distinctiveness of interactivity as a storytelling language, this supports narrative-centered models—e.g., narratological or semiotic—while

In applied academic settings, the LHEF might also assist: Industry case studies or student project critiques in the classroom.

Design school pedagogical exercises urging students to consider the narrative implications of their mechanics.

Workshop facilitation, steering organized narrative-mechanic alignment discussion across media.

#### **4.10.4 Application in game journalism and critical discourse**

Especially for those trying to express why a game succeeds or fails at emotional or thematic delivery, the framework can also meet the requirements of critics, reviewers, and curators. Often used vaguely or inconsistently in modern journalism, the terms "immersion," "narrative coherence," or "player agency". The LHEF gives critics a methodical list of questions and definitions to help them provide more complex analysis.

Its standards also help:

Longform analysis, which lets critics look at systematic design decisions outside of surface-level writing or plot summaries.

Examining calibration provides impartial rubrics for what is usually presented subjectively.

Especially those following thematic treatment across genres or sequels, comparative essays.

Notably, the non-prescriptive character of the framework guarantees that critics may recognize deliberate dissonance or rule-breaking as beneficial—e.g., subversion in horror games or satire in narrative games—while yet offering a vocabulary to explain how and why these impacts are produced.

#### **4.10.5 Media-agnostic possibility**

Although created to address issues with digital game design, the LHEF has shown value when used to non-digital interactive experiences. Amongst these are:

Examining co-authorship, role fidelity, and mechanical support of character arcs in Tabletop Role-Playing Games (TTRPGs).

Escape Rooms: considering how spatial logic and puzzle flow support a room's narrative stakes or setting.

Board Games: especially modern story-driven or "legacy" games, where gameplay systems sometimes communicate changing character or world narratives.

Abstract Games: such as chess or Go, where narrative meaning is emergent and interpretive, based on system constraints and player creativity.

Cross-application to analog formats not only confirms the strength of the LHEF but also places it within a larger media ecology of interactive narratives. This motivates academics and designers to view narrative mechanics as media-transcending tools, not tied to particular platforms or technologies.

#### **4.11 Limitations and Scope**

Although the Ludonarrative Harmony Evaluation Framework (LHEF) provides a flexible and methodical approach to examine the interaction between narrative structures and gameplay mechanics, it has its drawbacks. The framework is not meant to be universally prescriptive, nor does it assert to cover all conceivable narrative expressions in games. This part defines the LHEF's range, clarifies its limits, and addresses situations when its use could be limited or need modification.

##### **4.11.1 Qualitative, not quantitative**

The LHEF is deliberately qualitative. It does not produce performance or rankings. Although this allows the model to fit a wide spectrum of formats, it also adds interpretive subjectivity. Contextually based in the game's design, story, and player experience, assessments like "Harmony" or "Dissonance" are not measured against set standards.

Scope and limits.

- Qualitative, not statistical. Labels summarize arguments anchored in captures and contracts; numbers are expository and should never be targets.
- Axis interactions. Axes are analytically distinct but can correlate in practice (e.g., Role Fidelity and Mechanic–Theme often move together). Do not read independence where there is none.

- Genre/platform variation. Camera systems, input schemes, and engine constraints shape what is feasible. Use the context header and the platform note in the worksheet to bound expectations.
- Patch variance. Builds change; always record version and, if relevant, why an axis moved after a balance pass.
- Evaluator stance. Subjectivity remains; LHEF disciplines it via evidence rules, contracts, memos, and an explicit counter-argument pass.
- Intentional dissonance. Dissonance is not automatically a fault. When purposeful (satire, alienation, moral friction), logging type/scope/cue preserves intent and prevents misclassification.
- Comparisons. Cross-title comparisons are most meaningful within genre and platform families; the instrument was not designed to rank unlike things.

Intended uses.

- Internal design reviews (concept → vertical slice → beta) to check that mechanics and feedback enact the story the team intends.
- Post-release artifact analyses and case studies for education and critique.
- Team retrospectives/postmortems, where delta cards record how levers changed alignment.
- Curriculum: studio classes can use the worksheet + questionnaire to give juniors a teachable path into narrative-mechanic evaluation.

#### **4.11.2 Not a prescriptive design manual**

The LHEF is diagnostic rather than prescriptive. It does not say that ludonarrative harmony is always good or specify perfect game structures. Sometimes, particularly in satire, horror, or subversion, deliberate dissonance might be a fundamental artistic or thematic tool. As a kind of narrative expression, games like *Spec Ops: The Line* (2012), *Undertale* (2015), or *Getting Over It with Bennett Foddy* (2017) purposefully frustrate or contradict player expectations.

In such situations, a result of "dissonance" within the LHEF framework could suggest deliberate disturbance instead of design failure. Therefore, judges have to read their results critically as well as descriptively in light of the creator's goal, player

expectations, and genre norms. The framework is not intended for forecasting sales or review scores.

#### **4.11.3 Context-specific interpretation**

The LHEF presumes that games have to be read contextually: Depending on theme, tone, or narrative framing, a mechanic that supports narrative in one game could be dissonant in another.

- Players' interpretations of ludonarrative relationships could be influenced by cultural assumptions, genre literacy, and platform limitations.
- Player experience is not monolithic; what one player finds immersive may disturb another.
- This means the system is not set up for universal design prescriptions or aggregate reception research. Rather, it enables critical analysis of particular pieces in particular settings.

#### **4.11.4 Platform and format constraints**

Although the framework was meant to be media-agnostic, some edge cases could test or go beyond its reach:

- Highly abstract games with little thematic framing—e.g., Tetris—may completely reject narrative alignment.
- Meaningful application of procedural games with emergent meaning—such as Dwarf Fortress—may call for more interpretive scaffolding or player-based narrative building.
- Linear cinema or static fiction are non-interactive media that lie outside the LHEF's design since the framework depends on interactive affordances to assess harmony.
- Real-time multiplayer games with little narrative intent—such as competitive shooters—may also have functional mechanics that don't map neatly onto narrative aspects unless narrative framing is imposed externally via lore, setting, or user-created context.



#### **4.11.5 Educational and collaborative use caveats**

The LHEF has to be backed with pedagogical direction when applied in teaching or cooperative critique:

Students or young designers might need framing on how to tell systematic from aesthetic comments. Especially when a game's narrative influence is very personal or interpretive, evaluations have to be done with knowledge of prejudice. Cross-disciplinary teams might have various interpretations of "narrative"; some would give dialogue top priority while others would emphasize systematic emergence.

In such environments, the framework works best as a planned discussion opener instead of a blindly or mechanically applied rubric.

#### **4.11.6 Framework maturity and validation**

Although the LHEF is based on cross-disciplinary theory and has been tested via several case studies, it is still a theoretical contribution than an empirically validated model. More scholarly research is required to:

- Use the LHEF in longitudinal design cycles
- Contrast it with current narrative analysis tools or UX.
- Modify it for studies on large-scale reception.
- Examine inter-rater reliability in settings of cooperative evaluation.

The framework therefore represents a first proposal meant to hone over time by means of academic criticism, classroom application, and iterative design integration.

### **4.12 Research Contribution**

The creation and expression of the Ludonarrative Harmony Evaluation Framework (LHEF) is a major contribution to design practice in game studies as well as scholarly research. Located at the crossroads of narrative theory, interaction design, and systematic game analysis, the LHEF provides a repeatable, theory-informed framework for comprehending how games create meaning by the alignment—or misalignment—of gameplay and narrative.

This part explains the specific academic worth of the framework by means of its contribution to continuous debate, its methodological gap-filling, and its possible use as a springboard for future work. It positions the framework as both a clarifying tool for existing discussions and a practical scaffold that researchers and designers can adapt to interrogate new forms of narrative–mechanic interaction.

#### **4.12.1 Bridging theory and practice**

The disparity between theory and practical design is one of the most nagging problems in game studies. Although academic literature has covered ludonarrative dissonance, procedural rhetoric, and experiential storytelling in great depth, very few tools have surfaced to enable practitioners assess or design around these events in concrete terms.

The LHEF answers this need directly by:

- Translating abstract ideas—e.g., systemic storytelling, role fidelity—into operational criteria.
- Assisting design choices in postmortem, prototyping, and development phases.
- Structured around well defined dimensions, offering academics and critics a shared language to assess harmony in games.

It places narrative consistency as a systematic, interactive result produced by player action, feedback loops, and design structures rather than just a byproduct of excellent writing.

#### **4.12.2 Advancing the discourse on ludonarrative harmony**

Although ludonarrative harmony has received less theoretical support than its counterpart, ludonarrative dissonance, which has been extensively investigated—often rhetorically or illustratively—ludonarrative harmony has not. The LHEF is among the earliest models to:

- Provide a formal framework for recognizing and examining ludonarrative harmony,
- Consider harmony a gradient condition assessable across six fundamental criteria rather than a binary result.
- Emphasize descriptive analysis over prescriptive assumptions, so allowing dissonance when narratively justified.

The LHEF shifts the discussion toward intentionality and clarity in system-story alignment. It does so by seeing harmony as a design problem rather than an unintentional success.

#### **4.12.3 Cross-media and cross-format integration**

The media-agnostic usefulness of the LHEF is another major contribution. Unlike models restricted to digital storytelling or cinematic game structure, the LHEF supports a range of interactive formats, including:

- Narrative-driven digital games—e.g., *Outer Wilds*, *Spider-Man*
- Games based on experiments or metaphors—for example, *Before Your Eyes*
- Emergent and systemic games—e.g., *Dwarf Fortress*
- Non-digital experiences such as narrative board games, escape rooms, and TTRPGs

This wide relevance lets the LHEF engage in a bigger theoretical debate on what it means to tell stories with systems—across media, modalities, and play cultures.

#### **4.12.4 Foundation for future research**

The LHEF opens new avenues for both academic and practical investigation:

- In academic research, it can support case study comparison, genre analysis, player perception studies, and framework validation initiatives.
- It can be included into reflective design writing, student assessments, or design critique workshops in education.
- In design practice, it provides scaffolding for early narrative-system alignment, therefore lowering friction between narrative objectives and mechanical affordances.
- Future work might include: Creating mixed-method extensions (e.g., player interviews, telemetry overlays),
- Longitudinal studies on how harmony influences engagement and retention would be done,
- Investigating cultural diversity in harmony perception and interpretation.

The LHEF provides a living structure instead of a closed model by staying open-ended and interpretive, which invites change, criticism, and iteration. Its flexibility ensures that the framework can adapt to emerging genres, design practices, and analytical priorities without losing its core evaluative functions.



## **5. CASE STUDIES**

### **5.1 Case Study Selection and Analysis**

Applying the Ludonarrative Harmony Evaluation Framework (LHEF) to a hand-picked selection of games, this chapter reveals its analytical utility, genre-crossing adaptability, and interpretive depth. Every case study not only confirms the dimensions and criteria of the framework but also reveals the diversity of appearances of ludonarrative relationships in interactive media.

#### **5.1.1 Purpose of the case studies**

This chapter intends to be twofold:

Validation of Frameworks:

Using the LHEF on practical examples, this chapter assesses its operational clarity, analytical range, and interpretive consistency.

Creating Insight:

Every case study presents a nuanced reading of how particular games either succeed or fail in achieving ludonarrative harmony. These concepts clarify more general ideas of narrative design, mechanical metaphor, player agency, and systematic storytelling.

#### **5.1.2 Selection criteria**

The games and activities in this chapter were chosen based on the following factors:

Thematic and mechanical diversity: Titles range from evolving sandbox systems and experimental indie projects to linear, cinematic narratives.

Every game provides a notable instance of either harmony or dissonance, so enabling the framework to be assessed over a spectrum of narrative design approaches.

Though digital games are the primary focus, the chapter assesses the LHEF's cross-media validity by discussing non-digital analogue formats such as escape rooms and

tabletop role-playing games. All selected works have been discussed in academic or critical discourse, therefore facilitating citation and comparison interaction.

### **5.1.3 Structure of analysis**

Every case study follows a consistent framework, we begin by stating the narrative and ludic contracts in a few sentences. We then apply the six LHEF axes, answering the worksheet prompts, giving a concise label with a short, evidence-based justification, and proposing a single design lever if the axis shows strain. Where clips would normally appear, we describe the scene and include search prompts for sourcing stills later; the thesis itself does not embed video. We conclude with a harmony profile and a small radar table for replication. This repetition is deliberate. It lets readers see the method at work across different structures and genres without bloating the chapter.

### **5.1.4 Contribution of the chapter**

This chapter demonstrates by way of the framework in use that ludonarrative harmony can be methodically evaluated instead of merely intuitively felt. It also demonstrates the need of contextual interpretation, whereby harmony is a relational outcome between systems, narrative, and player role rather than a natural quality.

Additionally it confirms the LHEF's flexibility and highlights areas for next development—particularly in cases when dissonance is intentional or advantageous. The educational and critical value of the framework is enhanced by providing consistent examples for game studies research, design critique, and teaching.

### **5.1.5 Reporting note for readers**

This chapter applies the LHEF exactly as defined in Chapter 4. The first case, *God of War* (2018), appears as a fully worked example elsewhere in this chapter; what follows is the compact outcome format used for all remaining cases. The difference is only in reporting detail, not in rigor.

On captures and clips: the thesis will not embed video. In applied use outside the thesis, evaluators should pull the corresponding clips or stills, store them locally, and log them in the Capture Log template provided in the Appendix C.

On builds and patches: for released games where patch drift does not materially affect mechanics, structure, or UI, list Retail, latest patch in the case header. If a patch materially affects labels, record the version and note any changes.

## **5.2 God of War (2018)**

### **5.2.1 Worked example: God of War (2018)**

Game Title: God of War (2018)

Build/Patch: Retail, latest patch

Platform/Engine: PS4, Santa Monica Studio proprietary

Difficulty: Give Me A Balanced Experience

Evaluator: Cem Çelik

Date: 18.08.2025

Session Length: 14h 20m (Run A)

Capture Index: to be compiled after stills are sourced

#### **5.2.1.1 Contracts**

Narrative Contract

A father and son carry ashes to the highest peak, learning how to live with power, grief, and secrecy. The intended tone is intimate, weighty, and occasionally tender during exploration, with sharp peril in combat. The player's role is a responsible protector who must teach and be taught. Stakes remain familial even as mythic scope enters.

Ludic Contract

Core loop: explore hub-and-spoke spaces, fight close-quarters arena encounters, solve traversal and rune-logic puzzles, earn resources to upgrade gear, and unlock movement keys. Failure resets at nearby checkpoints with modest friction; learning timing and control advances more than grinding. Progression promises broadened combat trees, new traversal affordances, and Lake of Nine reconfiguration that opens routes as the arc advances.

Note on formula: the spine clearly follows a successful PS4 pattern that cycles fight, short traversal puzzles, and story beats, with a steady drip of RPG gear. That structure

is efficient and readable, yet it sometimes pulls against voiced urgency and parental restraint. We will test that tension on Role Fidelity and Progression–Structure.

### **5.2.1.2 Appendix B prompts answered axis by axis**

Axis 1 — Mechanic–Theme Alignment:

Q1. Which core verbs/loops embody the theme? Which contradict it?

Embody: measured axe play, stun setup, and directing Atreus as assisted control support the father-protector theme. Contradict: the loot-driven upgrade chase nudges min-max aggression after heavy story beats, which can thin the restraint motif when new gear spikes power.

Q2. Where do incentives push behavior that undermines the stated theme?

Immediately post-trauma scenes sometimes place a visible collectible or chest within two camera turns. The incentive to detour and optimize interrupts the role of a focused guardian.

Proposed captures to source:

Opening hunt teaching moment with Atreus where a clean axe recall and a timed arrow create a safe window. Search: God of War 2018 opening hunt Atreus arrow tutorial still.

First return to the Lake of Nine after a major story beat where a nearby chest or favor marker appears in view. Search: God of War 2018 Lake of Nine first reveal chest nearby.

One design lever:

Gate new loot pings for a short grace window after heavy narrative lines, then surface them together.

Label 4 Partial Harmony

Rationale Mechanics largely enact controlled ferocity and mentorship, though the economy sometimes over-rewards detours that dilute restraint.

Axis 2 — Feedback–Narrative Consistency:

Q1. Do audiovisual/UI feedbacks reinforce tone and fiction? Where do they clash?



Reinforce: haptics, grounded camera, subdued HUD, and the sound of the axe recall amplify weight and responsibility. Clash: tutorial toasts and stat popups occasionally step on reflective VO from Atreus or Mimir.

Q2. Note specific moments where feedback reframes narrative intent.

Failure feedback that muffles VO during Helheim traversal keeps tone cold and remorseful. Conversely, a resource toast firing during a quiet boat story reframes the moment as optimization rather than reflection.

Proposed captures to source:

- The Stranger fight introduction with low-angle handheld feel. Search: God of War 2018 The Stranger first fight camera still.
- Boat story line interrupted by a resources or XP toast. Search: God of War 2018 boat story HUD popup.

One design lever:

Suppress non-critical notifications while any story VO channel is active.

Label 4 Partial Harmony → 5 if notification suppression is applied

Rationale Feedback mostly holds the fiction. Minor UI clashes are solvable.

Axis 3 — Player Role Fidelity:

Q1. Do permitted actions/constraints consistently reflect the promised role?

Directing Atreus, body-blocking for him, and prioritizing control align with a guardian role. Optional detours, especially right after urgent lines, permit behavior that reads more like a looter than a parent in a hurry.

Q2. Identify any role breaks.

Urgency is voiced, yet traversal offers immediate side puzzles and favors. The system lets the player ignore the urgency without acknowledgment.

Proposed captures to source:

Side path with a Nornir chest that becomes visible immediately after an urgent objective line. Search: God of War 2018 Nornir chest urgent objective.

One design lever:

Add short VO variations that either justify or lightly chide detours during fresh urgency, so the fiction tracks the choice.

Label 3 Neutral → 4 with VO variants

Rationale Role is strong in combat and teaching, weaker at the moment where urgency and loot collide.

Axis 4 — Narrative Impact of Choice:

Q1. Which choices echo meaningfully?

Build choices change survivability, control tempo, and VO cadence in long fights. Route choices alter when certain micro-beats fire. These are felt in play, not just cosmetic.

Q2. Which choices are decorative? Provide captures.

Several gear upgrades add percent bonuses that rarely surface narratively. The meaning does not echo as a story beat, only as numbers.

Proposed captures to source:

- Before/after stills of a talisman or rune change that materially shifts a fight window. Search: God of War 2018 talisman cooldown build difference.

One design lever:

Increase diegetic surfacing of build identity with father-son idle banter after key node purchases.

Label 3 Neutral

Rationale Choices matter to expression, yet most are not legible as narrative state, so their story weight is modest.

Axis 5 — Emergent–Embedded Harmony:

Q1. Do emergent stories sit comfortably with authored beats?

Yes. Crowd control wins, lucky parries, and last-hit stuns produce micro-stories that read cleanly, and boat stories slot into exploration downtime.

Q2. Log notable synergies or collisions.

Synergy: ambient rune reading plus a safe flank creates a teachable moment that echoes the theme. Collision: an emergent wildlife or ambient spawn can reset a boat story abruptly.

Proposed captures to source:

- A short skirmish that ends just as a boat story begins, with no interruption. Search: God of War 2018 boat story timing after combat.
- A boat story cut by shoreline disembark. Search: God of War 2018 boat story interrupted disembark.

One design lever:

Bias boat-story triggers toward post-fight cooldowns and delay shoreline interrupts until a sentence closes.

Label 4 Partial Harmony

Rationale Emergence usually supports the script. Timing edge cases exist.

Axis 6 — Progression–Structure Synchronization:

Q1. Is meta-progression pacing/tone aligned with act structure/quests?

Mostly. Water-level reveals at the Lake of Nine map clean structural progress. Blades unlock expands enemy sets right as story intensity rises.

Q2. Where does grind/reset undermine cadence?

Late-game upgrade curves invite optional grind that can flatten stakes and over-inflate power right before dramatic climbs, which dulls the pressure the story asks for. The well-known fight-platform-story loop remains legible but can feel formulaic when gear progress outpaces narrative tension.

Proposed captures to source:

- Lake of Nine reveal still showing new shorelines after a story milestone. Search: God of War 2018 Lake of Nine water level drop.
- Menu still of a late upgrade that pushes power just before a heavy story beat. Search: God of War 2018 late gear upgrade menu screen.

One design lever:

When urgency is voiced, temporarily mute new map pins and delay high-value resource reveals until the next calm segment.

Label 4 Partial Harmony

Rationale Structure and progression usually click, yet the RPG layer can drift from the arc when optional grind appears at hot narrative moments.

### **5.2.1.3 Logs**

Intentional dissonance log:

Type: subversion

Scope: scene level

Cue to intent: Atreus's over-confidence phase

Design aim: let the player feel a momentary mismatch between amplified mechanical power and a child pushing past wisdom so the player re-asserts control and protection

Proposed capture to source: Helheim return where Atreus charges ahead and barks over Kratos's caution. Search: God of War 2018 Atreus arrogant phase Helheim scene.

Misalignment log:

Moment: immediately after a voiced urgent objective at the Lake of Nine

Axis implicated: Player Role Fidelity

Hypothesized cause: incentive visibility and notification timing

Proposed lever: urgency-aware notification suppression and VO that acknowledges detours

### **5.2.1.4 Radar, harmony profile, final lever**

Scores (Run A)

Mechanic–Theme 4

Feedback–Narrative 4

Player Role Fidelity 3

Narrative Impact of Choice 3

Emergent–Embedded 4

Progression–Structure 4

Harmony profile (pattern then exception)

Mechanics back a story about control and care, though the upgrade chase sometimes cheapens restraint. Feedback mostly stays grounded; stray toasts and stat panels intrude on reflective lines. Role plays clean in combat and parenting, yet urgency and optional detours argue. Choice shapes expression, not story state, so its narrative weight stays light. Emergent beats usually settle into authored space, minus timing hiccups around boat stories. Progression maps to structure well enough, but a familiar fight-puzzle-story rhythm and late RPG surges can blunt the arc’s pressure.

Final recommendation

Adopt an urgency-aware notification policy and pin reveal delay during hot narrative states, paired with short VO that acknowledges detours. This single lever lifts Role Fidelity and smooths Progression–Structure without gutting exploration reward.

### **5.2.1.5 Outcome report**

Title: God of War (2018)

Platform/Engine: PS4, Santa Monica Studio proprietary

Build/Patch: Retail, latest patch

Difficulty: Give Me A Balanced Experience

Evaluator: Cem Çelik

Date: 18.08.2025

Evidence handling: scene-described captures with search prompts; no embedded video

### **5.2.1.6 Contracts**

Narrative contract

A father and son carry ashes to the highest peak while learning how to live with grief and power. Tone is intimate, weighty, and sometimes warm in exploration, with sharp peril in combat. The role promised to the player is a responsible protector who must teach and be taught. Stakes stay fundamentally familial even as mythic scope enters.

## Ludic contract

Core loop: explore hub-and-spoke spaces, fight close-quarters arena encounters, solve traversal and rune puzzles, earn resources to upgrade gear and unlock movement keys. Failure loops are short, pushing learning timing over grinding. Progression broadens combat expression and opens routes around the Lake of Nine. The familiar PlayStation rhythm is visible: fight, short traversal puzzle, story beat, plus an RPG layer that can surge just before hot narrative moments.

### 5.2.1.7 Axis answers and judgments

#### 5.2.1.8 Mechanic–theme alignment

Label: 4 Partial Harmony

Why: Core verbs largely enact controlled ferocity and mentorship. The recallable axe's tempo, stun setups, and the act of directing Atreus support restraint and teaching. Tension appears when loot and upgrade incentives pull the player into power-chasing almost immediately after heavy story beats, thinning the restraint motif in those minutes.

Suggested captures to source

- Opening hunt teaching moment where a timed arrow plus axe recall creates a safe window. Search: God of War 2018 opening hunt Atreus arrow tutorial still
- First Lake of Nine return after a big scene where a chest or favor marker appears in immediate view. Search: God of War 2018 Lake of Nine first reveal chest nearby

Design lever

Delay new loot pings for a short grace window after heavy narrative lines, then surface them together.

### 5.2.1.9 Feedback–narrative consistency

Label: 4 Partial Harmony

Why: Haptics, shoulder-biased camera, VO barks, and a restrained HUD hold the fiction's weight. The axe recall sound and pad pulse recentre responsibility. Occasional tutorial toasts or stat popups step on reflective VO, reframing quiet beats

as optimization. These intrusions do not break the experience outright, but they momentarily shift the player's attention from embodied presence to system monitoring, softening the intended emotional cadence.

Suggested captures to source

- The Stranger's introduction with low-angle handheld feel. Search: God of War 2018 The Stranger first fight camera still
- Boat story line interrupted by an XP or resources toast. Search: God of War 2018 boat story HUD popup

Design lever

Suppress non-critical notifications while any story VO channel is active.

#### **5.2.1.10 Player role fidelity**

Label: 3 Neutral

Why: Combat and teaching strongly align with a guardian role through body-blocking, timed commands to Atreus, and control-first play. Role weakens when urgent plot lines collide with visible side content that the fiction doesn't acknowledge, letting the player behave like a looter while characters voice haste.

Suggested capture to source

Nornir chest visible two camera turns after an urgent objective line. Search: God of War 2018 Nornir chest urgent objective

Design lever

Short VO variants that either justify or lightly chide detours during fresh urgency, so the fiction tracks the choice.

#### **5.2.1.11 Narrative impact of choice**

Label: 3 Neutral

Why: Build and route choices materially alter combat feel, survival windows, and cadence. Most choices, however, do not echo as narrative state; their meaning remains systemic rather than storied.

Suggested capture to source

- Before/after stills of a talisman or rune swap that shifts a fight's timing window.  
Search: God of War 2018 talisman cooldown build difference

Design lever

Surface build identity diegetically through father-son idle banter after key node purchases.

#### **5.2.1.12 Emergent–embedded harmony**

Label: 4 Partial Harmony

Why: Emergent success stories and last-hit parries usually settle into authored beats cleanly. Lake of Nine exploration supports teachable moments without breaking cadence. Timing hiccups appear when a boat story resets on shoreline interruptions or ambient spawns cut a reflective line.

Suggested captures to source

- Short skirmish that ends just as a boat story begins, with no interruption. Search: God of War 2018 boat story timing after combat
- Boat story clipped by instant disembark. Search: God of War 2018 boat story interrupted disembark

Design lever

Bias boat-story triggers toward post-fight cooldowns and delay shoreline interrupts until a sentence closes.

#### **5.2.1.13 Progression–structure synchronization**

Label: 4 Partial Harmony

Why: Structural reveals map cleanly to act beats. The Lake of Nine water-level drop makes progress legible, and Blades unlock pairs with broader enemy sets and faster encounter pacing. The fight-puzzle-story formula sometimes feels mechanical, and late RPG surges can blunt dramatic pressure if the player grinds just before a hot narrative climb.



Suggested captures to source

- Lake of Nine reveal still showing new shores after a story milestone. Search: God of War 2018 Lake of Nine water level drop
- Menu still of a late upgrade applied shortly before a dramatic ascent. Search: God of War 2018 late gear upgrade menu screen

Design lever

When urgency is voiced, temporarily mute new map pins and delay high-value resource reveals until the next calm segment.

#### **5.2.1.14 Logs**

Intentional dissonance log

Type: subversion

Scope: scene level

Cue to intent: Atreus's over-confidence phase

Design aim: allow a brief mismatch between amplified mechanical power and a child pushing past wisdom so the player re-asserts control and protection

Suggested capture to source: Helheim return where Atreus charges ahead over Kratos's caution.

Search: God of War 2018 Atreus arrogant phase Helheim scene

Misalignment log

Moment: immediately after a voiced urgent objective at the Lake of Nine

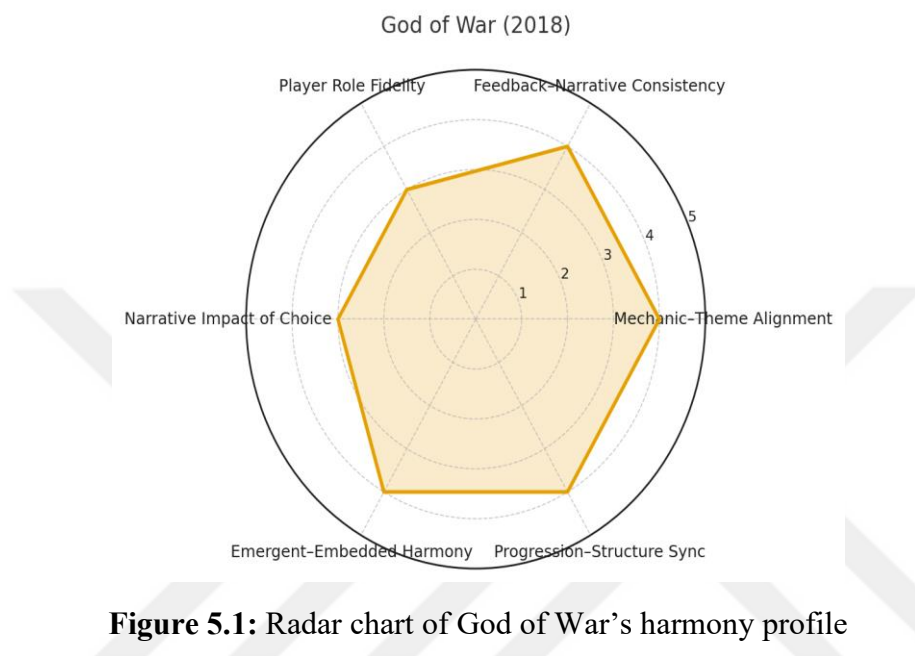
Axis implicated: Player Role Fidelity

Hypothesized cause: incentive visibility and notification timing

Proposed lever: urgency-aware notification suppression and short VO acknowledging detours

### 5.2.1.15 Harmony radar and profile

As shown in Figure 5.1, the harmony radar visualizes God of War's performance across the six axes of the LHEF, highlighting where narrative and mechanics reinforce one another and where minor tensions appear.



**Figure 5.1:** Radar chart of God of War's harmony profile

Scores: Mechanic-Theme 4; Feedback-Narrative 4; Player Role Fidelity 3; Narrative Impact of Choice 3; Emergent-Embedded 4; Progression-Structure 4.

#### Harmony profile

Mechanics support a story about control and care, though the upgrade chase can thin restraint right after big scenes. Feedback mostly holds weight while occasional toasts intrude on quiet lines. Role feels right in combat and parenting, then wobbles when urgency meets visible side content. Choice changes expression more than story state. Emergent beats usually help the script. Structure reads cleanly, yet the fight-puzzle-story loop and late power spikes can flatten dramatic pressure.

#### Primary design lever for this title

Adopt urgency-aware notification and pin suppression during hot story states, then surface non-critical pings together in the next calm window; pair with short VO variants that acknowledge detours. This single lever lifts Role Fidelity and smooths Progression-Structure without hurting exploration reward.

### **5.3 Uncharted 4: A Thief's End**

Title: Uncharted 4: A Thief's End

Platform/Engine: PS4, proprietary engine

Build/Patch: Retail, latest patch

Difficulty: Moderate

Evaluator: Cem Çelik

Date: 26.08.2025

Evidence handling: scene-described captures with search prompts

#### **5.3.1 Contracts**

Narrative contract

Aging thief Nathan Drake is pulled back into one last hunt by his brother, forced to weigh loyalty, honesty in marriage, and the cost of adventure. Tone aims for warm banter, cinematic awe, and a slowly gathering seriousness about consequence. The promised role is a capable but human adventurer who should value people over treasure.

Ludic contract

Core loop: traverse handcrafted routes with light puzzling, engage in set-piece firefights, and watch authored story beats between sequences. Stealth is possible in many encounters but sustained combat remains the dominant failure-resistant path. Progression is largely cinematic and tool-based rather than build-based. The familiar loop of firefight, traversal, and narrative bridge is a clear organizing spine for pacing.

#### **5.3.2 Axis answers and judgments**

##### **5.3.2.1 Mechanic-theme alignment**

Label: 3 Neutral

Why: Movement, rope swings, and climb timing embody the swashbuckling fantasy and Drake's competence. Extended waves of lethal gunplay push against the script's ethical tone when relationships and truth are foregrounded. Stealth openings often collapse into mandatory shootouts that celebrate marksmanship more than care for

consequence. These shifts don't break coherence outright, but they can momentarily tilt the player's role from grounded adventurer to action spectacle lead, softening the narrative's more relational beats.

Suggested captures to source

- Madagascar convoy escape where traversal and spectacle align with daring rather than cruelty. Search: Uncharted 4 Madagascar chase jeep market scene
- A stealth-enabled arena that escalates into a forced multi-wave fight. Search: Uncharted 4 stealth blown cover large combat encounter

Design lever

Shorten wave counts after narrative beats that emphasize honesty or consequence, and bias encounter exits to stealth completion when those beats are fresh.

#### **5.3.2.2 Feedback–narrative consistency**

Label: 4 Partial Harmony

Why: Camera language, VO quips, and environmental sound sell pulp adventure well. Bloodless hit feedback and quick recoveries keep tone breezy, which fits pulp but also trivializes cost when the story asks for gravity. UI is restrained, yet callouts and ammo barks can undercut reflective lines.

Suggested captures to source

- Close camera and VO during a heartfelt Elena scene with minimal UI. Search: Uncharted 4 Elena argument living room scene
- A loud ammo or enemy callout stepping on quiet dialogue in exploration. Search: Uncharted 4 quiet exploration dialogue interrupted by callout

Design lever

Gate combat callouts and ammo barks while story VO is active; restore after the line completes.

#### **5.3.2.3 Player role fidelity**

Label: 2 Dissonance

Why: The role promises a decent, reluctant adventurer who puts people first. The allowed and often required behavior is mass lethality across many arenas. The fiction

rarely acknowledges this gap, which makes the charming thief read like a tireless action operative between cutscenes. Occasional non-lethal stealth does not repair the overall pattern.

Suggested captures to source

- Post-argument sequence followed by an unavoidable heavy firefight. Search: Uncharted 4 after Elena argument next mission gunfight

Design lever

Contextualize body count with sparse but pointed VO lines after especially heavy sequences, or add non-lethal takedown chains and stealth-only exits more frequently when personal stakes are hot.

#### **5.3.2.4 Narrative impact of choice**

Label: 2 Dissonance

Why: Player choices are mostly route choices inside authored corridors. Brief dialogue picks exist but rarely echo beyond the moment. Stealth vs guns changes moment-to-moment feel, not story state. Expression exists, consequence barely registers.

Suggested captures to source

- A dialogue choice that yields different lines but no follow-through. Search: Uncharted 4 dialogue choice variant no consequence

Design lever

Add light state tracking that unlocks short scene variants when a chapter has multiple stealth-cleared arenas, signaling a different kind of thief than the all-guns path.

#### **5.3.2.5 Emergent–embedded harmony**

Label: 3 Neutral

Why: Traversal improvisation and rope physics produce fun micro-stories that fit the pulp register. In large arenas, systemic stealth and enemy patrols sometimes clash with cinematic triggers that assume a gunfight, snapping the experience back to authored intent

Suggested captures to source

- A rope-swing improvisation that cleanly transitions into a cutscene. Search: Uncharted 4 rope swing cinematic transition
- Stealth path that still triggers a big combat set-piece. Search: Uncharted 4 stealth triggers firefight anyway

Design lever

Broaden stealth-complete route triggers so the same cinematic fires without forcing gun escalation.

### **5.3.2.6 Progression–structure synchronization**

Label: 4 Partial Harmony

Why: The series' loop is a strong pacing tool. It organizes attention and builds rhythm, but the predictability exposes theme cracks: after intimate or morally loaded scenes, the structure often demands another arena where lethality solves friction. Tool unlocks and traversal toys arrive on good story beats, which helps cadence even as the combat cadence strains the promise of responsibility.

Suggested captures to source

- New tool introduction that cleanly pairs with a plot reveal. Search: Uncharted 4 piton first use reveal
- A chapter that follows a heavy relationship scene with a long arena. Search: Uncharted 4 long combat after emotional scene

Design lever

When the story flags consequence or honesty, swap the next arena for a high-tension traversal gauntlet or stealth-forward space to keep structure in step with theme.

### **5.3.3 Logs**

Intentional dissonance log

Type: genre maintenance

Scope: game-wide cadence

Cue to intent: pulp adventure tradition where danger is exciting and largely inconsequential

Design aim: keep momentum and accessibility even when the plot asks for weight

Misalignment log

Moment: post-conflict domestic scene followed by multi-wave gun arena

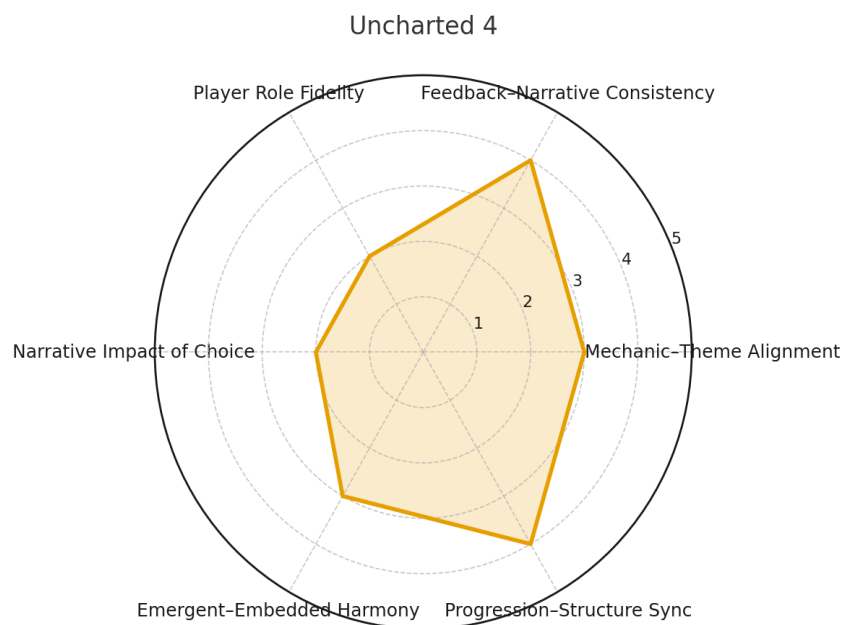
Axis implicated: Player Role Fidelity

Hypothesized cause: pacing formula that treats firefights as the safest universal bridge

Proposed lever: reduce wave count and allow stealth-complete exits on chapters that follow personal stakes

### 5.3.4 Harmony radar and profile

As shown in Figure 5.2, the harmony radar visualizes Uncharted 4's performance across the six axes of the LHEF, highlighting where narrative and mechanics reinforce one another and where tensions appear.



**Figure 5.2:** Radar chart of Uncharted 4's harmony profile

Scores: Mechanic-Theme 3; Feedback-Narrative 4; Player Role Fidelity 2; Narrative Impact of Choice 2; Emergent-Embedded 3; Progression-Structure 4.

Harmony profile

The traversal and set-piece grammar nails pulp adventure. Feedback supports charm and awe but softens consequence when the script leans serious. Role fidelity cracks hardest: the promised decent thief becomes a high-capacity combatant between cutscenes. Choice expresses style, not outcome. Emergence fits until cinematic rails

snap it back. The pacing loop is effective, yet its reliance on gun arenas after intimate scenes pulls against the story's human core.

Primary design lever for this title

On chapters that follow personal or ethical beats, prioritize stealth-complete or traversal-gauntlet exits and reduce forced multi-wave arenas; gate combat callouts during story VO. This preserves momentum while closing the largest role gap.

## **5.4 BioShock (2007)**

Title: BioShock (2007)

Platform/Engine: PC, Xbox 360, PS3; Unreal Engine 2.5 derivative

Build/Patch: Retail, latest patch

Difficulty: Normal

Evaluator: Cem Çelik

Date: 13.07.2025

Evidence handling: scene-described captures with search prompts

### **5.4.1 Contracts**

Narrative contract

A plane crash survivor descends into Rapture, an Objectivist city undone by ambition, addiction, and control. The story promises a critique of power and free will, with a tone that mixes dread, tragedy, and manic bravado. The player's role is an interloper who uncovers what happened, confronts exploitation, and faces a moral line around the Little Sisters.

Ludic contract

Core loop: first-person exploration and combat that blends firearms with plasmid powers, scrounging for ADAM and resources, hacking to tilt the economy, and upgrading through gene tonics. Failure is locally cheap through Vita-Chambers. Progression expands combinatorial power and unlocks routes through key modules of the city. The loop invites creative problem solving and frequent power expression.



## 5.4.2 Axis answers and judgments

### 5.4.2.1 Mechanic–theme alignment

Label: 3 Neutral

Why: Plasmids, hacking, and scarcity management dramatize Rapture’s promise of unfettered self-advancement. That alignment is strong at first contact. The moral hinge on harvesting or rescuing Little Sisters introduces a declared human cost, yet moment-to-moment incentives still celebrate maximal power acquisition. The critique sometimes turns into a playground for the very fantasy it warns against.

Suggested captures to source

- First plasmid injection and early combat synergy with an oil slick or water puddle. Search: BioShock 2007 first plasmid electrobolt oil slick
- Harvest vs rescue prompt with ADAM totals displayed. Search: BioShock 2007 harvest rescue choice screen

Design lever

Throttle immediate ADAM gains from harvesting while deepening delayed compounding rewards for rescue, so the economy itself reinforces the critique rather than winking at it.

### 5.4.2.2 Feedback–narrative consistency

Label: 4 Partial Harmony

Why: Audio diaries, art deco signage, and sound design sustain the fall-of-utopia mood. Power feedback is exuberant and showy, which suits pulp horror but occasionally glamorizes excess right when the script frames it as corrosive. UI telegraphs ADAM and loot cleanly; the abundance of popups during somber beats can jar.

Suggested captures to source

- Diary playback over cautious exploration in Medical Pavilion. Search: BioShock 2007 Medical Pavilion audio diary still
- Large ADAM reward toast immediately following a rescue. Search: BioShock 2007 ADAM reward popup after rescue

Design lever

Lower notification density and delay large resource toasts during reflective VO, delivering them after the line completes.

#### **5.4.2.3 Player role fidelity**

Label: 3 Neutral

Why: The interloper-detective role fits the exploration and diary sleuthing. The role frays when the player power-farms splicers and security for loot loops that read more like a harvesting entrepreneur than a conscience-tested survivor. The fiction seldom acknowledges the cognitive dissonance of pausing a fraught rescue to min-max vending routes.

Suggested captures to source

- Player detouring into a vending-hack loop seconds after an urgent objective line.  
Search: BioShock 2007 hack vending after urgent objective

Design lever

Inject short VO or world reactions that register opportunism immediately after voiced urgency, or soften urgency lines when multiple loot vectors are visible.

#### **5.4.2.4 Narrative impact of choice**

Label: 3 Neutral

Why: The harvest vs rescue choice is a headline decision with visible resource delta and an ending swing. Outside that hinge, most choices are builds and tactics. They alter expression rather than story state, while the famous twist reframes agency in authored terms that the systems do not meaningfully contest.

Suggested captures to source

- Side-by-side screenshot of ADAM totals and upgrade options before and after rescuing three times. Search: BioShock 2007 rescue vs harvest ADAM totals

Design lever

Add small, diegetic acknowledgments tied to tonic loadouts or non-lethal tactics that echo in later modules, so expression occasionally rises to narrative state.

#### **5.4.2.5 Emergent–embedded harmony**

Label: 4 Partial Harmony

Why: Environmental synergies create memorable micro-stories that sit well inside the authored critique. Setting oil traps, chaining lightning across water, or turning cameras on splicers produces stories of hubris paying off, which mirrors Rapture’s ethos. Collisions occur when emergent farming exploits slow the cadence of discovery.

Suggested captures to source

- Player-laid trap that knocks multiple splicers into water for a chain lightning finish. Search: BioShock 2007 chain lightning water trap multi kill
- Camera-turret farm loop in a quiet corridor. Search: BioShock 2007 camera farm exploit still

Design lever

Introduce diminishing returns on repetitive farm loops in the same room and push fresh incentives toward forward exploration.

#### **5.4.2.6 Progression–structure synchronization**

Label: 3 Neutral

Why: Module-to-module escalation tracks the narrative tour of a failing ideology. However, Vita-Chambers dramatically cheapen failure, blunting tension just when the story leans on danger and consequence. ADAM pacing can spike right before morally weighted beats, inviting shopping sprees that clip the tone.

Suggested captures to source

- Sequence where a death resets at a Vita-Chamber near a boss arena. Search: BioShock 2007 Vita Chamber boss return
- Gene bank or Gatherer’s Garden spree immediately before a story-heavy room. Search: BioShock 2007 Gatherer’s Garden before story scene

Design lever

Raise cost on immediate respawns during story-critical rooms or temporarily disable nearby Vita-Chambers while critical VO runs; time ADAM windfalls to post-beat cooldowns.

### 5.4.3 Logs

Intentional dissonance log

Type: thematic exposure

Scope: system-wide economy

Cue to intent: the intoxicating feel of power is itself the subject of critique

Design aim: let players taste the appeal of excess so the narrative can confront it

Misalignment log

Moment: urgent story line interrupted by an efficient hack-and-farm loop

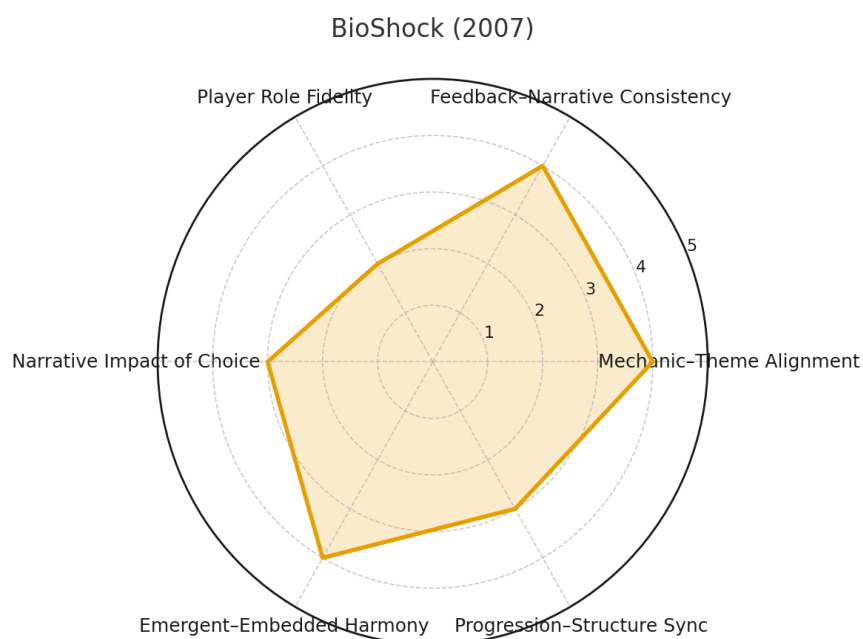
Axis implicated: Player Role Fidelity

Hypothesized cause: incentive visibility and trivial failure cost

Proposed lever: urgency-aware dampening of farm incentives and nearby Vita-Chamber respawn

### 5.4.4 Harmony radar and profile

As shown in Figure 5.3, the harmony radar visualizes Bioshock's performance across the six axes of the LHEF, highlighting where narrative and mechanics reinforce one another and where tensions appear.



**Figure 5.3:** Radar chart of Bioshock's harmony profile

Scores: Mechanic–Theme 3; Feedback–Narrative 4; Player Role Fidelity 3; Narrative Impact of Choice 3; Emergent–Embedded 4; Progression–Structure 3.

Harmony profile

Rapture’s systems channel its ideology with flair, then drift as the power fantasy takes center stage. The audio-visual layer sells the fall-of-utopia mood, while UI abundance can glamorize accumulation at delicate moments. Role reads as investigator until optimization habits take over. Choice has one big moral hinge, with most other decisions shaping style rather than story. Emergent synergies echo the critique nicely when they punish careless foes, less so when farming slows discovery. Progression follows the tour of a failed idea, but cheap failure and ADAM spikes sand down the edges that the story needs sharp.

Primary design lever for this title

Rebalance the economy and failure loop around story-critical beats: dampen farm incentives and respawn convenience during hot narrative states, and shift large ADAM payouts to post-beat cooldowns so the critique remains legible in play.

## **5.5 Before Your Eyes (2021)**

Title: Before Your Eyes (2021)

Platform/Engine: PC, webcam input

Build/Patch: Retail, latest patch

Difficulty: N/A

Evaluator: Cem Çelik

Date: 22.08.2025

Evidence handling: scene-described captures with search prompts

### **5.5.1 Contracts**

Narrative contract

A life is recounted on a ferry between worlds, with memory, honesty, and acceptance at stake. Tone moves from warm recollection to uneasy truth and eventual stillness. The player’s role is both witness and participant in a life review, asked to sit with what

is said and what is skipped. The story promises that what is remembered, and how, matters.

Ludic contract

Core loop: gaze and blinking advance time, sometimes skipping material, sometimes holding on it. The system reads the body's reflex as input, which turns attention and loss of attention into the main verb. Failure is not failure in the usual sense, it is the inevitability of time moving when you blink. Progression follows life stages, with timed scenes that react to whether you can keep your eyes open.

## **5.5.2 Axis answers and judgments**

### **5.5.2.1 Mechanic–theme alignment**

Label: 5 Harmony

Why: The central verb, blinking, embodies memory's fragility and time's push. Holding the gaze lets you dwell in a moment, blinking ends it, which literalizes how attention and loss coexist. The mechanic does not decorate the theme, it is the theme.

Suggested captures to source

- Calibration and first ferry exchange where the blink mechanic is introduced. Search: Before Your Eyes webcam blink calibration ferry opening
- Early childhood scene where a blink cuts a warm moment short. Search: Before Your Eyes early bedroom scene blink skip

Design lever

When a scene carries new truth, slightly lengthen the “blink tolerance” window so players can sit with it without reducing the core idea of inevitability.

### **5.5.2.2 Feedback–narrative consistency**

Label: 5 Harmony

Why: Audio focus, restrained UI, and the Ferryman's voice keep the fiction intact. Visual cues that mark blink readiness fit the metaphor of time's edge without breaking diegesis. There is little intrusion from metagame feedback, so tone holds.

Suggested captures to source

- Minimal UI scene where a soft cue indicates an impending skip. Search: Before Your Eyes subtle blink indicator minimal UI
- Ferryman line landing cleanly with no popups. Search: Before Your Eyes Ferryman dialogue clean screen

Design lever

If a player blinks on a key line, add a quiet catch-up whisper from the Ferryman in the next safe beat, so missed syllables do not fracture tone.

### **5.5.2.3 Player role fidelity**

Label: 5 Harmony

Why: The role promised is a person reliving, not a hero changing the world. Allowed behavior is exactly that, watch, try to linger, then lose the grip and move on. The fiction recognizes your limits as bodily limits, which deepens identification rather than breaking it.

Suggested captures to source

- Moment where trying not to blink still yields a skip, followed by in-character acknowledgement. Search: Before Your Eyes cannot hold blink scene acknowledgement

Design lever

A short, diegetic reassurance line after forced skips in late scenes, reinforcing that moving on is part of the role rather than a mistake.

### **5.5.2.4 Narrative impact of choice**

Label: 3 Neutral

Why: Local choices exist, for example attention, timing, small selections, but the arc remains guided. Expression changes what you see and how long you sit with it, not the final outcome of the passage. The system's meaning comes from how you witness, which lands as expressive rather than branching.

Suggested captures to source

- A scene with a small interaction choice that colors a later exchange without changing the arc. Search: Before Your Eyes choice variant later line difference

Design lever

Let a tiny number of attention-pattern flags influence one or two later lines, so expression is acknowledged while keeping the fixed arc.

#### **5.5.2.5 Emergent–embedded harmony**

Label: 4 Partial Harmony

Why: Most storytelling is embedded, yet the exact cadence is emergent because blinking cadence is personal. Players invent their own texture of lingering and losing moments. Tension appears when a stray blink cuts a scene before a line finishes, which is thematically apt but can jar comprehension in isolated spots.

Suggested captures to source

- A held gaze that buys a few extra seconds of a piano scene. Search: Before Your Eyes piano practice hold gaze longer
- A premature blink trims a heartfelt line. Search: Before Your Eyes blink mid sentence skip

Design lever

Offer a rare, one-time rewind in the final act if a line is cut at the exact mid-syllable mark, framed as a sliver of grace, not a system menu.

#### **5.5.2.6 Progression–structure synchronization**

Label: 5 Harmony

Why: Structure maps to life stages and the ferry journey, while progression is simply the passage of time under the eyelid. Escalation arrives as the story becomes truer and the windows to hold on get shorter. Rhythm and structure serve the same idea, that a life feels full yet always too brief.

Suggested captures to source

- Chapter transition where a longer hold is replaced by a short one later. Search: Before Your Eyes late chapter shorter hold transition



- Final ferry scene where structure and mechanic converge. Search: Before Your Eyes ending ferry scene eyes close

Design lever

In the penultimate chapter, slightly reduce the variance of hold lengths to keep the build steady into the last reveal.

### **5.5.3 Logs**

Intentional dissonance log

Type: alienation for truth

Scope: scene level

Cue to intent: cutting off comforting scenes with an involuntary blink right before a cherished line

Design aim: remind the player that comfort cannot be perfectly preserved, which primes the final acceptance

Misalignment log

Moment: rare mid-syllable cut on a crucial revelation

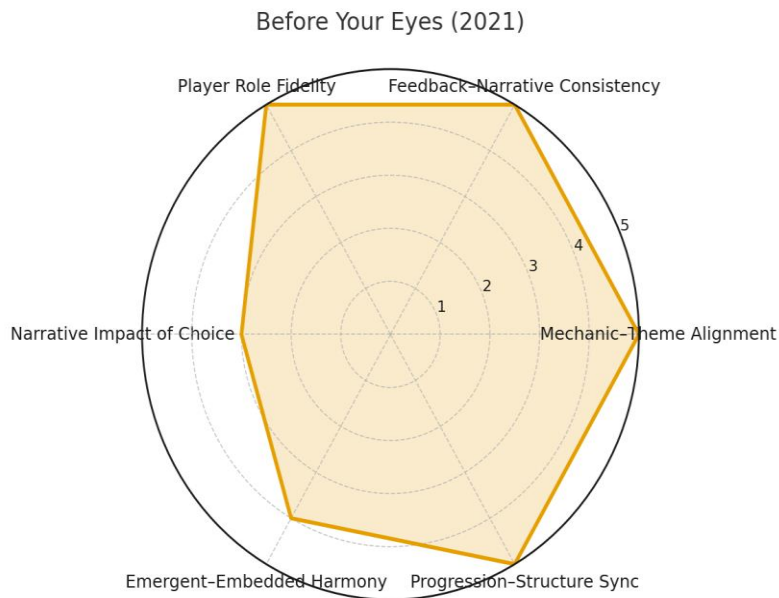
Axis implicated: Emergent–Embedded Harmony

Hypothesized cause: strict timing window colliding with natural blink reflex

Proposed lever: single grace rewind framed diegetically

### **5.5.4 Harmony radar and profile**

As shown in Figure 5.4, the harmony radar visualizes Before Your Eyes' performance across the six axes of the LHEF, highlighting where narrative and mechanics reinforce one another and where tensions appear.



**Figure 5.4:** Radar chart of Before Your Eyes’ harmony profile

Scores: Mechanic–Theme 5; Feedback–Narrative 5; Player Role Fidelity 5; Narrative Impact of Choice 3; Emergent–Embedded 4; Progression–Structure 5.

#### Harmony profile

Blinking makes the theme tangible rather than decorative. The audiovisual layer does not fight the fiction, it fades under it. Role matches allowance, you watch, hope, and accept. Choice expresses attention rather than route, which fits the premise. Emergence comes from your body setting cadence, with a few harsh trims that can clip comprehension. Structure and mechanic tell the same story of time, moving together toward stillness.

#### Primary design lever for this title

Protect comprehension without softening the idea of inevitability, add a low-key catch-up whisper after cut lines and a single, diegetic grace rewind for mid-syllable cuts late in the story.

### 5.6 Outer Wilds (2019)

Title: Outer Wilds (2019)

Platform/Engine: PC, PS4, Xbox One, Switch; Unity

Build/Patch: Retail, latest patch

Difficulty: N/A

Evaluator: Cem Çelik

Date: 14.08.2025

Evidence handling: scene-described captures with search prompts

### **5.6.1 Contracts**

Narrative contract

A rookie Hearthian astronaut investigates an ancient mystery that ends with the sun going supernova. The work promises a reflective, science-fantasy meditation on curiosity, mortality, and communal knowledge. The player's role is an explorer who learns how the world works and passes through endings without panic, collecting understanding rather than loot.

Ludic contract

Core loop: launch, navigate a 22-minute time loop, observe systemic phenomena, read Nomai texts with the translator, test hypotheses with the probe, update the Ship Log, die, repeat. Failure is diegetic and inevitable at loop end. Progression is knowledge based, not stats based. The design invites open discovery, soft gating via hazards and timing, and gradual mastery of flight, suit, and planetary quirks.

### **5.6.2 Axis answers and judgments**

#### **5.6.2.1 Mechanic-theme alignment**

Label: 5 Harmony

Why: Primary verbs are looking, reading, listening, and piloting, which all honor curiosity as the theme. The translator, signalscope, and probe literalize scientific method. There is no combat layer to confuse intent. Occasional slapstick crashes exist but they underline fallible exploration rather than contradict it.

Suggested captures to source

- First launch and low orbit with the Ship Log visible. Search: Outer Wilds first launch ship log orbit still
- Translator focused on a Nomai wall with branching threads. Search: Outer Wilds translator spiral Nomai writing wall

## Design lever

On first hours only, offer a brief tip that the probe can mark points of interest, reinforcing observation as the main verb without adding HUD clutter.

### 5.6.2.2 Feedback–narrative consistency

Label: 5 Harmony

Why: Audio, UI, and camera sit quietly behind the fiction. Ship and suit readouts are diegetic. Music shifts signal cosmic beats, not power fantasies. The sun’s growth, the ghost matter hiss, and sandfalls communicate risk without melodrama. Tutorial text is sparse and fades quickly.

Suggested captures to source

- Suit HUD with oxygen warning while drifting. Search: Outer Wilds suit HUD oxygen warning drifting
- Sun growing near loop end with the swell of music. Search: Outer Wilds sun supernova music swell

## Design lever

Delay on-screen tutorial hints if a diegetic audio cue is already playing, so overlapping guidance does not muddy tone.

### 5.6.2.3 Player role fidelity

Label: 5 Harmony

Why: The promised role is an earnest, curious pilot. Allowed behavior is exactly that: observe, test, crash, learn, and share through the log. Even reckless choices scan as in-character because Hearthians treat missteps with warmth and pragmatism. The fiction acknowledges failure as part of the craft.

Suggested captures to source

- Campfire chat that frames learning and failure as normal. Search: Outer Wilds campfire dialogue failure normal
- First successful autopilot to the Attlerock after a sloppy manual attempt. Search: Outer Wilds autopilot Attlerock comparison

#### Design lever

After repeated deaths in the same hazard within one loop count, add a single new one-liner from a Hearthian that frames the hazard insightfully, not mockingly.

#### **5.6.2.4 Narrative impact of choice**

Label: 4 Partial Harmony

Why: There are no branching endings in the usual sense, yet choices of where to go and what to test reshape pacing, revelations, and which lines you hear. Knowledge choices permanently change what the player knows, which in this design is the narrative state. Expression is the point, and the final convergence respects that. Minor friction: a few routes can front-load high difficulty before the player internalizes timing tricks.

Suggested captures to source

- Ship Log before and after learning a critical link, showing new rumor threads.  
Search: Outer Wilds ship log rumor mode new entry
- Two different orders of discovering Ash Twin vs Dark Bramble consequences.  
Search: Outer Wilds Ash Twin before Dark Bramble route comparison

#### Design lever

If a player dies three loops in the same planet within ten minutes each, surface a gentle optional rumor hint in the Ship Log to widen choices without spoiling.

#### **5.6.2.5 Emergent–embedded harmony**

Label: 5 Harmony

Why: The authored cosmology is strict, yet your timing and approach generate emergent stories. Falling through Brittle Hollow while reading a wall, surfing a sandfall to slip into a chamber, or threading Dark Bramble past anglerfish yields personal anecdotes that still fit the world's laws. Physics goofs are rare enough to read as comic rather than undermining.

Suggested captures to source

- Debris fall through Brittle Hollow into the black hole during a read. Search: Outer Wilds brittle hollow collapse reading

- Anglerfish evasion path using no thrusters. Search: Outer Wilds anglerfish silent drift path

Design lever

When a physics bump interrupts a Nomai text mid-read, restore the last two lines on re-open so comprehension isn't lost to slapstick.

#### **5.6.2.6 Progression–structure synchronization**

Label: 5 Harmony

Why: Structure is a clockwork solar system in a 22-minute loop. Progression is the player's mental model of that clock. Ash Twin fills, Hourglass Twins trade sand, Brittle Hollow collapses, the sun dies. The story of discovery and the schedule of events are the same thing, which keeps cadence legible and meaningful.

Suggested captures to source

- Hourglass sand transfer at mid-loop revealing a new opening. Search: Outer Wilds hourglass twins sand transfer opening
- Final approach to the Eye after assembling the understanding. Search: Outer Wilds Eye of the Universe approach still

Design lever

Offer a subtle watchface toggle on the suit that mirrors solar timing only after the player has visited three time-critical locations, helping latecomers sync without spoiling early mystery.

#### **5.6.3 Logs**

Intentional dissonance log

Type: existential contrast

Scope: loop climax

Cue to intent: supernova awe vs the gentle, almost playful tone of daily Hearthian life

Design aim: hold mortality and curiosity in the same frame so the final image lands as acceptance, not despair

Misalignment log

Moment: rare physics ragdoll during a solemn read that ejects the player

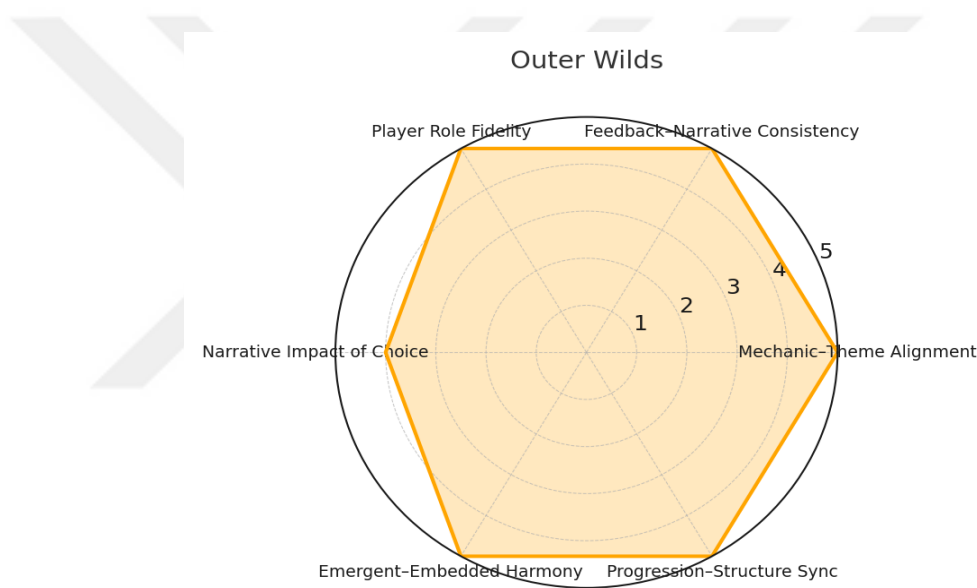
Axis implicated: Feedback–Narrative Consistency

Hypothesized cause: collision edge at read panels near moving terrain

Proposed lever: small collision buffers and auto-resume of last two lines on re-open

#### 5.6.4 Harmony radar and profile

As shown in Figure 5.5, the harmony radar visualizes Outer Wilds’ performance across the six axes of the LHEF, highlighting where narrative and mechanics reinforce one another and where tensions appear.



**Figure 5.5:** Radar chart of Outer Wilds’ harmony profile

Scores: Mechanic–Theme 5; Feedback–Narrative 5; Player Role Fidelity 5; Narrative Impact of Choice 4; Emergent–Embedded 5; Progression–Structure 5.

Harmony profile

Everything you do is inquiry, and that is the story. The UI and sound point you toward wonder rather than meters. You are exactly the person the fiction says you are, a kind pilot who learns publicly. Choice shapes the order and texture of understanding, which is the meaningful state here. Emergent timing anecdotes live happily inside the authored clockwork. The loop’s schedule and your learning arc are the same curve, so structure and progression never drift apart.

Primary design lever for this title:

Protect comprehension and pacing without adding power: resume the last lines after physics bumps, and surface a late-game, optional suit watch that mirrors known timing once the player has already proven curiosity.

## **5.7 Marvel's Spider-Man (2018)**

Title: Marvel's Spider-Man (2018)

Platform/Engine: PS4; Insomniac Engine

Build/Patch: Retail, latest patch

Difficulty: Amazing

Evaluator: Cem Çelik

Date: 09.08.2025

Evidence handling: scene-described captures with search prompts

### **5.7.1 Contracts**

Narrative contract

Peter Parker balances care for New York with personal obligations. The story promises a grounded hero who helps neighbors first and pays a price for lateness, secrecy, and overcommitment. Tone swings from light neighborhood warmth to serious consequence. The role offered to the player is a friendly protector who intervenes where needed and keeps relationships intact.

Ludic contract

Core loop: freeform traversal across Manhattan, neighborhood incidents and crimes, stealth or combat encounters, short puzzle interludes, and authored missions that advance the plot. Failure resets with low friction and quick returns to motion. Progression expands traversal flow, suit mods, gadgets, and combat expression. The well-known “set piece or mission, roam for activities, then story beat” cadence organizes play and rewards detours with meaningful upgrades.



## 5.7.2 Axis answers and judgments

### 5.7.2.1 Mechanic–theme alignment

Label: 4 Partial Harmony

Why: Swinging, quick response to crimes in progress, crowd control tools, and traversal mastery all embody the neighborhood-protector theme. The incentive structure grants tokens and XP for helping strangers, which supports the ethos. Tension appears when gadget min-maxing and challenge token farming push spectacle and optimization after heavy personal beats.

Suggested captures to source

- Crime-in-progress that surfaces near the player during a calm swing, resolved quickly with crowd control. Search: Spider-Man PS4 crime in progress quick resolve tokens
- Challenge completion that yields a high-value token right after a serious cutscene. Search: Spider-Man PS4 challenge token after story beat

Design lever

Throttle high-value token spawns for a short window after heavy narrative scenes, then release them together once the next calm segment begins.

### 5.7.2.2 Feedback–narrative consistency

Label: 4 Partial Harmony

Why: Swing audio, haptic pulls at web-release, and a clean HUD produce heroic speed without breaking the fiction. Police radio, NPC thank-yous, and JJJ segments reinforce tone. Popups for tokens, challenge medals, and suit unlocks can step on reflective VO or relationship calls if they fire mid-line.

Suggested captures to source

- Clean swing segment with minimal HUD and ambient city audio. Search: Spider-Man PS4 clean swing ambient audio
- Popup storm that overlaps a phone call with MJ or Aunt May. Search: Spider-Man PS4 phone call interrupted by UI popups

## Design lever

Hold non-critical notifications during live phone calls and cutscene exits; show a compact digest afterward.

### 5.7.2.3 Player role fidelity

Label: 4 Partial Harmony

Why: The role says “help others first.” The systems let you peel off at any time to stop a mugging, escort an ambulance, or fix a street problem. Main-path urgency can clash with visible side events that the fiction does not always acknowledge, which encourages a player to detour while characters speak in urgent tones. Your earlier reading stands: the city rewards responsibility, yet the story sometimes declares haste.

Suggested captures to source

- Main-mission marker visible while a nearby car chase spawns with urgency VO still active. Search: Spider-Man PS4 car chase spawns during urgent mission

## Design lever

Add brief VO variants that either justify or gently chide detours during voiced urgency, so the fiction follows the choice.

### 5.7.2.4 Narrative impact of choice

Label: 3 Neutral

Why: Build choices shape combat style and survivability; traversal upgrades alter rhythm and help coverage. Most choices do not meaningfully change plot or relationship state. Expression is celebrated, consequence remains limited to moment-to-moment play.

Suggested captures to source

- Before/after stills of a suit mod or gadget swap that alters encounter tempo. Search: Spider-Man PS4 suit mod tempo change before after

## Design lever

Let a handful of relationship lines acknowledge distinct build identities or repeated non-lethal stealth clears in certain districts.

### **5.7.2.5 Emergent–embedded harmony**

Label: 4 Partial Harmony

Why: Emergent city incidents fold into authored missions smoothly. A spontaneous car chase after a quiet rooftop chat reads like the life of a neighborhood hero. Collisions occur when a random event undercuts a fresh solemn line, or when timers push the player to abandon a short scene.

Suggested captures to source

- Incident that triggers just after a calm swing and resolves before the next mission gate. Search: Spider-Man PS4 random crime resolves before mission gate
- Random call or incident firing mid-reflection. Search: Spider-Man PS4 random event interrupts reflective line

Design lever

Bias incident spawns to start after story VO completes; if a timered event spawns during VO, extend its window by a few seconds.

### **5.7.2.6 Progression–structure synchronization**

Label: 4 Partial Harmony

Why: The cadence of mission, roam, mission is clear and supports heroic routine. District completion feeds better traversal and combat options, which keeps the city feeling responsive. After strong personal scenes, the structure sometimes snaps back to open-world checklists that dilute pressure, especially if token needs encourage farming right then.

Suggested captures to source

- District completion pop with traversal mod unlock. Search: Spider-Man PS4 district completion traversal mod
- Heavy story talk followed by a visible cluster of nearby activities and a new challenge marker. Search: Spider-Man PS4 activities visible after dramatic scene

Design lever

Delay new challenge markers for one swing's worth of time after dramatic scenes; reveal them in a digest to preserve tone while keeping the loop intact.

### 5.7.3 Logs

Intentional dissonance log

Type: genre maintenance

Scope: city-wide cadence

Cue to intent: upbeat superhero register that treats frequent danger as solvable noise

Design aim: keep momentum and optimism while acknowledging cost in key chapters

Misalignment log

Moment: urgent main-path phone call overlapped by a high-stakes random event

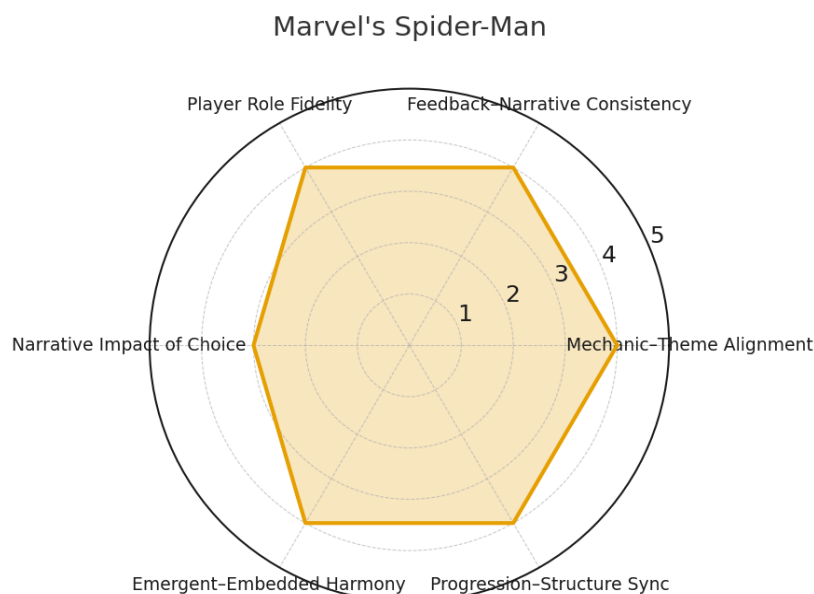
Axis implicated: Player Role Fidelity

Hypothesized cause: spawn timing and notification density

Proposed lever: VO-aware incident spawning and a digest of delayed notifications

### 5.7.4 Harmony radar and profile

As shown in Figure 5.6, the harmony radar visualizes Marvel's Spider-Man's performance across the six axes of the LHEF, highlighting where narrative and mechanics reinforce one another and where tensions appear.



**Figure 5.6:** Radar chart of Marvel's Spider-Man's harmony profile

Scores: Mechanic-Theme 4; Feedback-Narrative 4; Player Role Fidelity 4; Narrative Impact of Choice 3; Emergent-Embedded 4; Progression-Structure 4.

Harmony profile

Movement and quick responses to neighbors feel exactly like Spider-Man. The sound and HUD keep heroism bright, though popups sometimes trample quiet calls. Role reads true when you peel off to help, then wobbles when voiced urgency stares at a busy map. Choice changes style, not plot. Emergent city beats usually nest inside the authored flow, with a few rough overlaps. Structure and progression support routine, yet checklist gravity can mute pressure right after a personal hit.

Primary design lever for this title

Adopt VO-aware notification and incident spawning with short detour-acknowledgment lines after urgent calls. This keeps the neighborhood-first role intact without dulling the open-world loop.

## **5.8 Far Cry 3 (2012)**

Title: Far Cry 3 (2012)

Platform/Engine: PC, PS3, Xbox 360; Dunia Engine

Build/Patch: Retail, latest patch

Difficulty: Normal

Evaluator: Cem Çelik

Date: 03.09.2025

Evidence handling: scene-described captures with search prompts

### **5.8.1 Contracts**

Narrative contract

Jason Brody crashes into a violent archipelago, trying to rescue friends and get home. The story promises a confrontation with violence, addiction to power, and the seductions of a “warrior” identity. Tone swings between pulp menace and uneasy self-awareness. The player’s role is a scared outsider asked to choose people over thrill.

Ludic contract

Core loop: capture outposts, hunt animals for crafting, complete story and side missions, and expand fast travel by climbing radio towers. Stealth or open firefights

clear spaces; crafting boosts ammo capacity, syringes, and survivability. Failure is cheap with frequent checkpoints. Progression yields skill tattoos, better weapons, and faster clears. The loop powerfully rewards predation and territory control.

## **5.8.2 Axis answers and judgments**

### **5.8.2.1 Mechanic–theme alignment**

Label: 2 Dissonance

Why: Systems glorify domination and extraction. Hunting animals to expand capacity, clearing outposts for control, and gaining flashy execution skills flatter the very fantasy the narrative frames as toxic. The promised reckoning with violence reads as exhilaration in moment-to-moment play.

Suggested captures to source

- First skill point adding a chained takedown with visible tatau growth. Search: Far Cry 3 chained takedown tatau upgrade screen
- Outpost capture screen with XP, cash, fast travel unlock. Search: Far Cry 3 outpost captured reward screen

Design lever

Tie late-tier combat perks to rescue progress or non-lethal stealth chains, not kill counts; reduce crafting gains from apex-predator hunts during story urgency.

### **5.8.2.2 Feedback–narrative consistency**

Label: 3 Neutral

Why: Audio-visuals sell pulp danger, but UI and reward toasts flood the screen after kills, cementing achievement vibes. Hallucinatory sequences do question identity, yet they do not alter the feedback grammar that celebrates efficiency.

Suggested captures to source

- XP and loot toasts stacking after a chaotic fight. Search: Far Cry 3 XP popup stack after firefight
- Hallucination sequence with unchanged reward grammar afterward. Search: Far Cry 3 hallucination mission aftermath HUD

Design lever

During story-hot chapters, suppress non-critical popups and swap post-combat stingers for short breathers or VO doubt to keep tone from snapping to celebration.

#### **5.8.2.3 Player role fidelity**

Label: 2 Dissonance

Why: Role claims reluctant protector of friends. Allowed behavior is large-scale predation for personal power, often while friends wait. The fiction rarely acknowledges abandoning rescues to grind skins and towers.

Suggested captures to source

- Rescue-flagged objective visible while the player diverts to hunt rare animal skins.  
Search: Far Cry 3 rare animal hunt during rescue objective

Design lever

Gate certain high-power crafting recipes behind rescue milestones; add VO that calls out opportunism if the player diverts immediately after an urgent call.

#### **5.8.2.4 Narrative impact of choice**

Label: 2 Dissonance

Why: The headline ending choice exists, but most choices are optimization paths with little story echo. Outpost order, weapon loadouts, and crafting sequences change efficiency, not identity in the fiction.

Suggested captures to source

- Two differently specced loadouts clearing the same outpost with identical narrative follow-up. Search: Far Cry 3 stealth vs assault outpost same outcome

Design lever

Track stealth-only clears and civilian-friendly play to unlock short, diegetic acknowledgments and micro-variants in later scenes.

### **5.8.2.5 Emergent–embedded harmony**

Label: 3 Neutral

Why: Emergent stealth strings, fire spreads, and animal interference create memorable micro-stories that fit pulp survival. These anecdotes still net the same achievement grammar and power drip, pulling them toward triumph rather than self-interrogation.

Suggested captures to source

- Tiger loose in an enemy camp turning the fight. Search: Far Cry 3 tiger frees cage outpost chaos
- Wildfire spread changing a planned stealth route. Search: Far Cry 3 fire spread outpost stealth disrupted

Design lever

When animals or fire do the work, dampen XP and redirect the “hero” soak to humility lines or reduced bragging feedback.

### **5.8.2.6 Progression–structure synchronization**

Label: 2 Dissonance

Why: Tower climbs and crafting spurts often spike right before rescue beats, flattening urgency. The tattoo skill tree visually marks empowerment while the story asks doubt. Cadence prefers checkbox conquest over relationship pressure.

Suggested captures to source

- Radio tower completion popping multiple map icons before a rescue. Search: Far Cry 3 radio tower unlock icon flood rescue pending
- Post-craft surge right before a cutscene about friends. Search: Far Cry 3 crafting upgrade before friend cutscene

Design lever

Delay icon floods and high-tier crafting reveals until after rescue sequences; add scarcity in the chapter preceding rescues.



### 5.8.3 Logs

Intentional dissonance log

Type: thematic provocation

Scope: system level

Cue to intent: intoxication with domination is the point of critique

Design aim: show appeal before consequences land

Misalignment log

Moment: immediate detour to hunt rare skins after an SOS

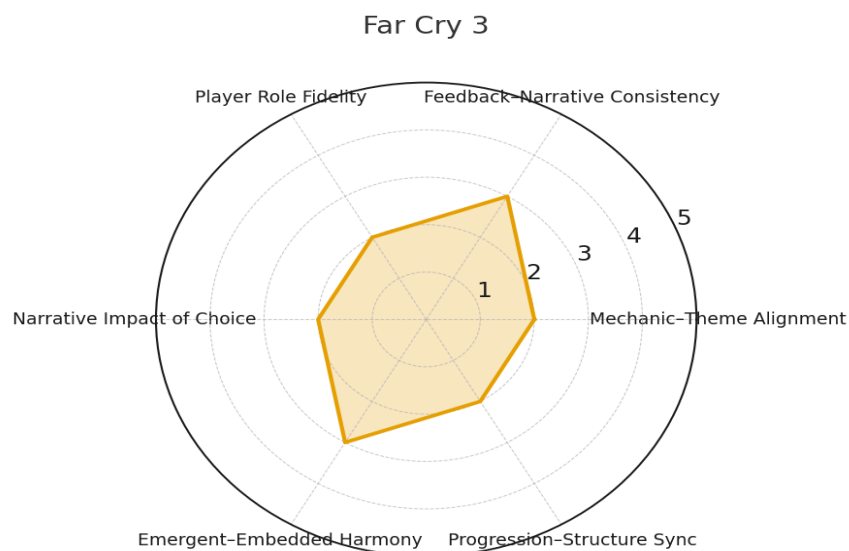
Axis implicated: Role Fidelity

Cause: incentive visibility and cheap failure

Lever: milestone gating and VO acknowledgment

### 5.8.4 Harmony radar and profile

As shown in Figure 5.7, the harmony radar visualizes Far Cry 3's performance across the six axes of the LHEF, highlighting where narrative and mechanics reinforce one another and where tensions appear.



**Figure 5.7:** Radar chart of Far Cry 3's harmony profile

Scores: Mechanic-Theme 2; Feedback-Narrative 3; Player Role Fidelity 2; Narrative Impact of Choice 2; Emergent-Embedded 3; Progression-Structure 2.

Harmony profile

Play celebrates conquest and extraction while the script asks for self-skepticism. Feedback grammar is triumphal by default. The role of reluctant protector gives way to predator when incentives appear. Choice is optimization, not consequence. Emergence is gripping but still paid in hero points. Structure advances power faster than doubt, which leaves the critique undercut.

Primary design lever for this title

Gate big power and map reveals behind rescue progress and stealth-complete chains, and suppress celebration grammar during hot story windows.

## **5.9 Dead Space (2008)**

Title: Dead Space (2008)

Platform/Engine: PC, PS3, Xbox 360; EA's in-house tech

Build/Patch: Retail, latest patch

Difficulty: Normal

Evaluator: Cem Çelik

Date: 01.09.2025

Evidence handling: scene-described captures with search prompts

### **5.9.1 Contracts**

Narrative contract

Engineer Isaac Clarke boards the USG Ishimura to find his partner and fix a catastrophe, only to confront body horror and manipulation. Tone is claustrophobic, clinical, and mournful. The role is not super-soldier but problem-solver under duress, using tools to survive and repair.

Ludic contract

Core loop: strategic dismemberment, resource rationing, zero-g traversal, environmental problem solving, and cautious pacing with diegetic UI. Failure costs feel tangible given ammo scarcity and checkpoint spacing. Progression extends suit

integrity, stasis kinetics, and tool upgrades. The design promises grounded survival, not power fantasy.

## **5.9.2 Axis answers and judgments**

### **5.9.2.1 Mechanic–theme alignment**

Label: 5 Harmony

Why: Dismemberment, stasis, and kinesis literalize clinical problem-solving in a crisis. The engineer identity shines through weapon-as-tool feel. The verbs fit dread and restraint rather than bravado.

Suggested captures to source

- On-screen limb-targeting tutorial with necromorph charge. Search: Dead Space 2008 shoot the limbs prompt
- Kinesis use to clear debris or skewer an enemy. Search: Dead Space 2008 kinesis impale debris clear

Design lever

None required beyond minor clarity tweaks; mechanics already narrate the ethos.

### **5.9.2.2 Feedback–narrative consistency**

Label: 5 Harmony

Why: Diegetic HUD on the suit, grounded soundscape, and camera discipline keep fiction intact. Audio logs and PA messages layer context without over-explaining. Hit confirmation is restrained, preserving fear.

Suggested captures to source

- Health and stasis bars on Isaac’s suit visible in dark corridor. Search: Dead Space 2008 diegetic HUD spine stasis
- Audio log play with minimal UI. Search: Dead Space 2008 audio log playback minimal HUD

Design lever

Delay inventory popups during audio logs to prevent overlap.

### **5.9.2.3 Player role fidelity**

Label: 5 Harmony

Why: Allowed actions match “engineer under siege.” You repair, repurpose tools, and methodically triage threats. The game rarely pushes you into hero swagger; when you improvise, it still reads as technical competence.

Suggested captures to source

- Zero-g repair segment with limited ammo. Search: Dead Space 2008 zero g repair limited ammo

Design lever

If a player depletes ammo fully, bias the next drop toward engineering tools rather than pure damage to keep the role voice.

### **5.9.2.4 Narrative impact of choice**

Label: 3 Neutral

Why: Build choices affect survivability and tactics, not plot. Node allocation and weapon selection change tone and encounter feel. The story’s authored trajectory remains fixed.

Suggested captures to source

- Power node upgrade screen before a difficult chapter. Search: Dead Space 2008 power node upgrade screen

Design lever

Let a few incidental lines acknowledge extreme builds, like stasis-heavy or cutter-only runs.

### **5.9.2.5 Emergent–embedded harmony**

Label: 4 Partial Harmony

Why: Embedded horror dominates, yet emergent resource scrambles, limb-miss chain reactions, and environmental kills create personal stories that still respect the fiction. Rare physics oddities can briefly break tension.

Suggested captures to source

- Environmental hazard kill that saves ammo. Search: Dead Space 2008 environmental kill save ammo
- Ragdoll or physics oddity in a solemn corridor. Search: Dead Space 2008 ragdoll glitch solemn moment

Design lever

Auto-recenter any physics-bound corpse near important logs to avoid accidental slapstick.

### **5.9.2.6 Progression–structure synchronization**

Label: 5 Harmony

Why: Chapter goals track repair and escape tasks, while upgrades accrue at a pace that keeps fear credible. The cadence of quiet, panic, and aftermath supports dread rather than grind. The diegetic map and tram structure keep progress legible.

Suggested captures to source

- Tram arrival between chapters with suit state visible. Search: Dead Space 2008 tram arrival chapter transition
- Mid-game upgrade immediately before a tougher variant appears. Search: Dead Space 2008 suit upgrade before new necromorph type

Design lever

Tiny buffer before major story VO when entering stores or benches to avoid VO clipping.

### **5.9.3 Logs**

Intentional dissonance log

Type: none flagged beyond genre contrast

Note: brief power spikes exist but are framed as fragile competence, not triumph

Misalignment log

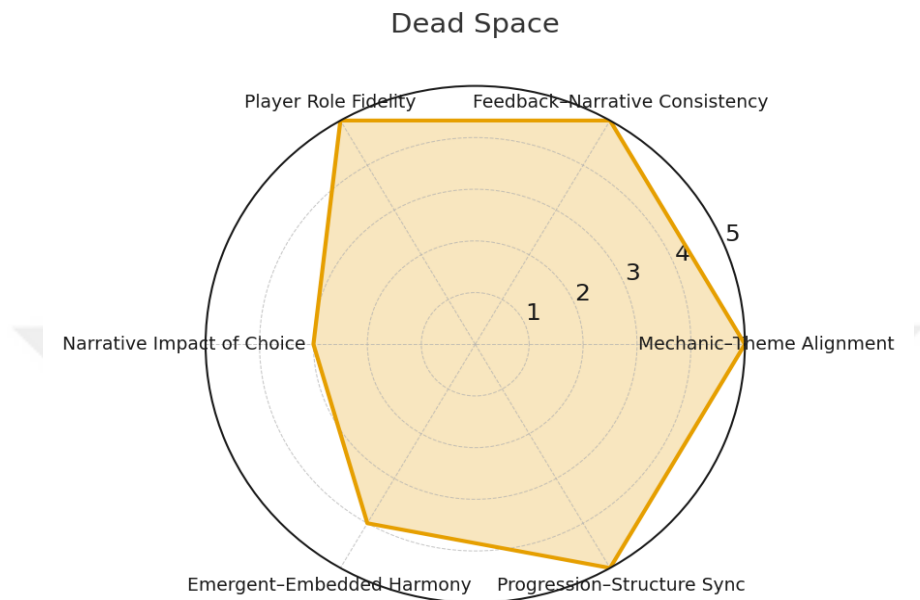
Moment: rare physics comedy in a tense hall

Axis implicated: Feedback–Narrative Consistency

Lever: corpse auto-recenter and VO resume

### 5.9.4 Harmony radar and profile

As shown in Figure 5.8, the harmony radar visualizes Dead Space's performance across the six axes of the LHEF, highlighting where narrative and mechanics reinforce one another and where tensions appear.



**Figure 5.8:** Radar chart of Dead Space's harmony profile

Scores: Mechanic-Theme 5; Feedback-Narrative 5; Player Role Fidelity 5; Narrative Impact of Choice 3; Emergent-Embedded 4; Progression-Structure 5.

#### Harmony profile

Tools behave like tools. The UI lives on the suit and never shouts over fear. You act like the person the fiction says you are, an engineer making a way through ruin. Choice is tactical, not branching. Emergent scrambles sit comfortably inside embedded dread, aside from rare physics blips. Structure and upgrade pacing keep danger sharp without turning horror into grind.

#### Primary design lever for this title

Protect solemn audio and prevent stray slapstick: delay popups during logs and auto-recenter physics objects near important scenes.

## **5.10 Undertale (2015)**

Title: Undertale (2015)

Platform/Engine: PC; GameMaker

Build/Patch: Retail, latest patch

Difficulty: N/A

Evaluator: Cem Çelik

Date: 11.09.2025

Evidence handling: scene-described captures with search prompts

### **5.10.1 Contracts**

Narrative contract

A human child falls into the Underground and meets monsters whose fates hinge on mercy, honesty, and memory. Tone moves from quirky warmth to piercing sincerity. The role is not conqueror but someone who can refuse violence and be changed by relationships. The story promises that actions are remembered, even across resets.

Ludic contract

Core loop: bullet-hell dodging during enemy turns and a menu-driven choice among Fight, Act, Item, and Mercy. Progression is social knowledge and pattern mastery rather than stats alone. Failure returns you quickly with the world quietly remembering. The game advertises that you can complete it without killing anyone, and it means it.

### **5.10.2 Axis answers and judgments**

#### **5.10.2.1 Mechanic–theme alignment**

Label: 5 Harmony

Why: Mercy is a first-class action, not a cutscene. ACT options discover the kindness grammar per enemy, turning conversation into combat resolution. When you choose to kill, the verbs feel wrong on purpose, and later the world treats it as moral state, not just numbers.

Suggested captures to source

- ACT menu sequence that resolves a fight without damage. Search: Undertale ACT Mercy spare resolution
- A fight after a prior kill where dialogue shifts. Search: Undertale altered dialogue after kill route

Design lever

None needed; the verbs are already the thesis.

### **5.10.2.2 Feedback—narrative consistency**

Label: 5 Harmony

Why: Dialogue, UI, and music respond to your choices in plain language. The bullet-hell box shrinks, shakes, or changes shape in boss states to underline emotion. Save-screen language and tiny meta-touches keep the fiction alive.

Suggested captures to source

- Save screen line that reflects prior behavior. Search: Undertale save screen remembers actions
- Boss arena box transformation keyed to a story beat. Search: Undertale heart box changes boss emotion

Design lever

If a player toggles mercy repeatedly, add a unique line acknowledging indecision.

### **5.10.2.3 Player role fidelity**

Label: 5 Harmony

Why: The promised role is a person whose choices about care define the world. Allowed behavior makes that true in every encounter. Even grinding reads as a moral position on certain routes because the system names it.

Suggested captures to source

- Encounter where repeated ACTs reveal the right kindness sequence. Search: Undertale act sequence to spare enemy



Design lever

Offer a single optional hint after five failed ACT attempts on one enemy to support accessibility without muting discovery.

#### **5.10.2.4 Narrative impact of choice**

Label: 5 Harmony

Why: Choices rewrite dialogue, boss mechanics, late-game structure, and even meta layers. The neutrality of many games' builds does not apply; here, the build is your history.

Suggested captures to source

- Pacifist-specific scene that does not appear otherwise. Search: Undertale true pacifist ending scene
- Genocide route mechanical change with different boss pattern. Search: Undertale genocide boss pattern change

Design lever

On the most forgiving route, surface one additional reflective line if the player almost killed by mistake, reinforcing that mercy was fragile, not free.

#### **5.10.2.5 Emergent-embedded harmony**

Label: 4 Partial Harmony

Why: Embedded authored moments dominate, yet the exact cadence of learning ACT grammars and dodging patterns creates emergent personal stories of restraint or relapse. Occasional repetition while learning a specific ACT sequence can thin pacing.

Suggested captures to source

- Player failing an ACT sequence twice then discovering the right one. Search: Undertale learning act sequence spare after fails

Design lever

After three repeats on one enemy, speed up hint surfacing by one step without explicit text.

### 5.10.2.6 Progression–structure synchronization

Label: 5 Harmony

Why: Structure stages character relationships in an order that maximizes reflection on your past fights. Progression is knowledge of how to spare and a save file that remembers who you are. The arc of routes and endings is the system's ledger.

Suggested captures to source

- Scene that explicitly remembers a reset or past action. Search: Undertale remembers previous run line
- Pre-ending branch condition being checked. Search: Undertale flag for true pacifist condition

Design lever

If a player hovers near pacifist but misses a flag, add a subtle optional pointer from a character, framed as concern, not a checklist.

### 5.10.3 Logs

Intentional dissonance log

Type: meta-ethical pressure

Scope: route-wide

Cue to intent: systems make harm feel efficient and then judge it later

Misalignment log

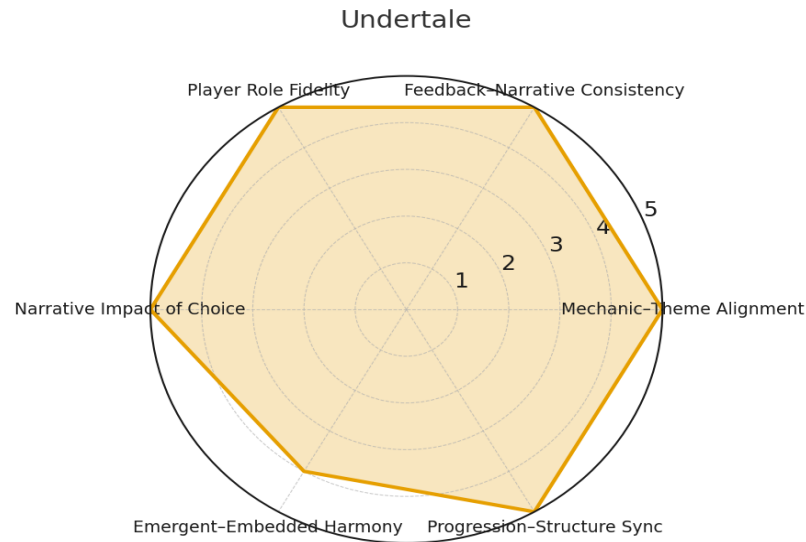
Moment: local repetition while learning one enemy's ACT grammar

Axis implicated: Emergent–Embedded Harmony

Lever: gentler hint ramp after repeated failures

### 5.10.4 Harmony radar and profile

As shown in Figure 5.9, the harmony radar visualizes Undertale's performance across the six axes of the LHEF, highlighting where narrative and mechanics reinforce one another and where tensions appear.



**Figure 5.9:** Radar chart of Undertale’s harmony profile

Scores: Mechanic–Theme 5; Feedback–Narrative 5; Player Role Fidelity 5; Narrative Impact of Choice 5; Emergent–Embedded 4; Progression–Structure 5.

#### Harmony profile

The verbs say mercy and the story listens. UI and music witness who you are. You act as the fiction promises, and the world remembers. Choice is consequence, not cosmetics. Emergence comes from learning kindness and bullet patterns, with some friction in repetition. Structure and memory carry your history to its rightful end.

#### Primary design lever for this title

Support comprehension without blunting ethics: a soft hint ramp for stubborn ACT loops and a reflective nudge when pacifism is nearly lost.

### 5.11 Remember Me (2013)

Title: Remember Me (2013)

Platform/Engine: PC, PS3, Xbox 360; Unreal Engine 3

Build/Patch: Retail, latest patch

Difficulty: Normal

Evaluator: Cem Çelik

Date: 06.09.2025

Evidence handling: scene-described captures with search prompts

### **5.11.1 Contracts**

#### Narrative contract

In Neo-Paris, Nilin, an amnesiac memory hunter, confronts a corporate regime that commodifies memory. Themes: identity, authorship of the self, and the ethics of rewriting another's mind. Tone mixes sleek futurism with melancholic guilt. Player role: a skilled infiltrator whose actions should bear psychological weight for others, not just tactical payoff.

#### Ludic contract

Core loop: linear traversal and platforming, arena combat with customizable Pressen combos, episodic "Memory Remix" set pieces that alter key scenes, and occasional stealth. Failure resets are local; progression expands combo slots, special Pressens, and S-Pressens that swing difficult fights. The cadence follows a familiar sequence of traversal, arena, story, but advertises that memory as a system can be acted upon, not merely witnessed.

### **5.11.2 Axis answers and judgments**

#### **5.11.2.1 Mechanic-theme alignment**

Label: 3 Neutral

Why: Memory Remix sequences directly enact the theme by letting the player explore counterfactuals to nudge outcomes. Outside those set pieces, the majority verb set is third-person melee that rewards rhythm, sustain, and cooldown manipulation. Combo programming is conceptually "rewriting," but in practice reads as damage, heal, and cooldown math more than identity work.

Suggested captures to source

- First Memory Remix showing multiple rewind-scrub attempts before the chosen alteration. Search: Remember Me memory remix bartender scene scrub choices
- Pressen deck screen that foregrounds damage/heal/cooldown Pressens. Search: Remember Me Pressen combo customization screen

Design lever

Thread small remix-like micro-interactions into traversal or combat setups, so the rewrite metaphor touches more than the set pieces.

### 5.11.2.2 Feedback–narrative consistency

Label: 4 Partial Harmony

Why: UI, sound, and glitch overlays during Remixes align with the fiction of unstable memory. Combat feedback is vivid and arcade-clean, which fits cyber-action but sometimes drowns the uneasy mood about altering minds. Post-Remix scenes land tonally; popups for XP and unlocks can jar in the aftermath.

Suggested captures to source

- Glitch artifacts and audio stutter during a critical Remix. Search: Remember Me memory remix glitch artifact still
- XP or unlock toasts firing immediately after a somber outcome. Search: Remember Me XP popup after memory remix consequence

Design lever

Hold non-critical reward popups until a short cool-down after a Remix plays out, then summarize gains in a batch.

### 5.11.2.3 Player role fidelity

Label: 3 Neutral

Why: The promised role is a memory hunter reckoning with the ethics of manipulation. The allowed behavior is primarily stylish melee punctuated by rare Remixes. The fiction barely acknowledges that you can spend long stretches acting as an action brawler while the plot's moral load centers on intimate rewrites.

Suggested captures to source

- A chapter where an urgent ethical beat is followed by a long combat stretch. Search: Remember Me post remix long combat sequence

Design lever

Insert brief reflective VO stingers from Nilin after heavy Remixes that persist into the next arena, so the role voice travels with the player's actions.

### 5.11.2.4 Narrative impact of choice

Label: 2 Dissonance

Why: Inside a given Remix, the local outcome can branch, yet the macro arc stays tightly authored. Choices outside Remixes are mostly expression of build and approach. The game teaches that edits have consequence, but most edits are designer-placed islands rather than a system that remembers you.

Suggested captures to source

- Side-by-side stills of two Remix outcomes with identical follow-up mission flow.  
Search: Remember Me two remix outcomes same chapter flow

Design lever

Track a tiny number of silent flags from Remix outcomes and reflect them in short later lines or environmental details.

### 5.11.2.5 Emergent–embedded harmony

Label: 3 Neutral

Why: Embedded authored storytelling dominates. Combat and traversal produce emergent rhythm, not emergent story about memory. When Remixes allow multiple near-miss branches before you find the right alteration, the play moment feels exploratory and thematically apt.

Suggested captures to source

- A near-miss branch in a Remix that you roll back from. Search: Remember Me memory remix near miss branch

Design lever

Expose one extra false-positive branch per Remix that meaningfully comments on risk without bloating runtime.

### 5.11.2.6 Progression–structure synchronization

Label: 3 Neutral

Why: The structural cadence is traversal, arena, story beat. It delivers pace and clarity, but the predictable return to arenas after soul-searching edits can flatten the ethical

pressure. Pressen unlock pacing keeps fights readable; it does not meaningfully sync with the memory-ethics arc.

Suggested captures to source

- New S-Pressen unlock landing right before a heavy Remix, prompting a power spike in the wrong register. Search: Remember Me S-Pressen unlock before memory remix

Design lever

Delay new S-Pressen unlocks when a Remix is imminent, then deliver them after the scene so power cadence doesn't upstage reflection.

### **5.11.3 Logs**

Intentional dissonance log

Type: genre brightness against ethical unease

Scope: chapter-level

Cue to intent: cyber-action momentum carries the player even after a troubling edit

Design aim: temper the unease rather than wallow, keeping broad accessibility

Misalignment log

Moment: XP celebration immediately after a morally fraught Remix

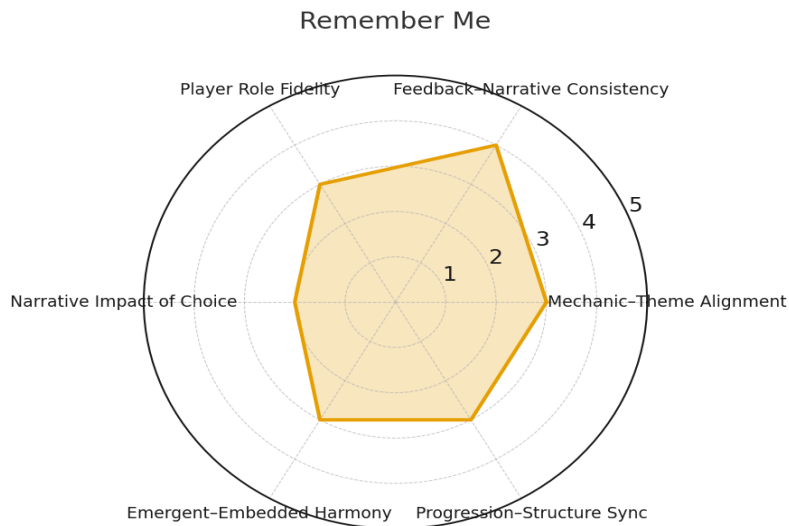
Axis implicated: Feedback–Narrative Consistency

Hypothesized cause: reward timing not aware of narrative temperature

Proposed lever: VO-aware popup delay and end-of-segment digest

### **5.11.4 Harmony radar and profile**

As shown in Figure 5.10, the harmony radar visualizes Remember Me's performance across the six axes of the LHEF, highlighting where narrative and mechanics reinforce one another and where tensions appear.



**Figure 5.10:** Radar chart of Remember Me’s harmony profile

Scores: Mechanic–Theme 3; Feedback–Narrative 4; Player Role Fidelity 3; Narrative Impact of Choice 2; Emergent–Embedded 3; Progression–Structure 3.

#### Harmony profile

Remix scenes embody the thesis while the everyday verb set speaks fluent cyber-action. The glitch art and sonic texture support memory as a volatile medium, then popups pull you back to points. The role promises an ethical knife-edge, yet long brawls dominate between rare edits. Choice hits hard inside Remixes and goes quiet elsewhere. Emergence is cadence, not consequence. Structure is readable but keeps returning to arenas right after charged edits, which blunts the weight of rewriting a mind.

#### Primary design lever for this title

Make the system remember a little: carry a few micro-flags from Remix outcomes forward, delay celebration grammar after edits, and seed short reflective VO into the next arena so role and theme travel with the player.

### 5.12 Tabletop Role-Playing Games (TTRPGs)

Title: Tabletop Role-Playing Games (representative play using a rules-moderate fantasy system)

Medium: Analog, face-to-face or VTT with voice

Build/Patch: N/A



Evaluator: Cem Çelik

Date: 03.08.2025

Evidence handling: For analog sessions, “captures” mean specific, time-stamped moments in audio logs or VTT record, or annotated transcript snippets. No evidence was presented for this specific case

### **5.12.1 Contracts**

Narrative contract

The table promises a co-authored story framed by a facilitator who sets tone, stakes, and situation. Themes commonly include duty, discovery, and consequence negotiated in live conversation. The role of each player is an in-world protagonist whose decisions matter to other players, while the facilitator maintains fairness and thematic integrity. Tone ranges from playful to solemn based on social agreement at session start.

Ludic contract

Core loop: declare intent, negotiate approach, resolve with procedure, narrate outcome, update fiction. Resolution uses mixed methods: ability checks, advantage states, resource tracks, and position/effect framing. Failure is negotiated and often partial, creating forward motion rather than stalls. Progression is social and mechanical: bonds, flags, and inventories change in tandem with level or advancement clocks.

### **5.12.2 Axis answers and judgments**

#### **5.12.2.1 Mechanic–theme alignment**

Label: 4 Partial Harmony

Why: Declared intents plus procedure-as-written frequently embody group themes, especially when position/effect or advantage clarifies risk and tone. Friction appears when combat-forward subsystems dominate tables that advertised intrigue or care, pulling play toward damage math. House rules can correct or intensify this drift.

Design lever

When a scene is framed for social consequence, set default resolution to position/effect or structured negotiation before escalating to initiative, and award tangible advantages for poetic or value-aligned play.

#### **5.12.2.2 Feedback—narrative consistency**

Label: 4 Partial Harmony

Why: Spoken narration, safety tools, and facilitator prompts keep tone legible. Dice, tokens, and clocks externalize tension. In some tables, rules text is read verbatim during charged scenes, flattening mood. Audio cues or ambient track changes can help but may also over-determine feeling if used bluntly.

Adopt “quiet resolution” mode for crucial lines: pre-explain the mechanic once, then resolve silently with a quick paraphrase, logging the roll to notes rather than reading rules mid-scene.

#### **5.12.2.3 Player role fidelity**

Label: 5 Harmony

Why: The promised role is a protagonist co-author. Allowed behavior is exactly that: declare, try, revise in character, and negotiate fallout. Facilitator authority exists to protect that promise. Role break risk rises when spotlight balance slips or table culture rewards out-of-character optimization over in-fiction aims.

Design lever

Use a rotating spotlight clock and bond triggers that pay immediate fictional positioning, not just XP, so fidelity stays visible in the fiction.

#### **5.12.2.4 Narrative impact of choice**

Label: 5 Harmony

Why: Choices constantly rewrite the state: who is hurt, what is owed, which doors close. Even micro-choices in description ripple via clocks, fronts, or progress tracks. Branching endings are not pre-baked; instead, the ledger of decisions is the story.

Design lever

When a choice meaningfully shifts allegiance or access, mark it with a named fiction tag on the table notes so later scenes can call it back aloud.

#### **5.12.2.5 Emergent—embedded harmony**

Label: 5 Harmony

Why: Authored prep seeds situation and theme, but the table's improvisation births the moment-to-moment narrative. Dice results plus player phrasing create anecdotes that still live inside the prepared frame. Emergent comedy during solemn arcs can spike, yet safety and lines/veils tools keep the container.

Design lever

Write prep as questions and pressures, not scripts, so emergence has room while staying on theme.

#### **5.12.2.6 Progression–structure synchronization**

Label: 4 Partial Harmony

Why: Session arcs typically move from setup to escalation to consequence with advancement beats landing after hard choices. Mismatch appears when leveling or loot drops arrive between heavy interpersonal scenes, encouraging a break to shop or re-spec that stalls tone.

Design lever

Batch advancement at chapter breaks; if a rule grants mid-scene improvement, log it and narrate its effects at the next scene boundary.

#### **5.12.3 Logs**

Intentional dissonance log

Type: alienation to surface theme

Scope: scene level

Cue to intent: facilitator calls for a stark fortune roll during a soft family scene to underline risk honestly

Design aim: keep tenderness honest without melodrama

Misalignment log

Moment: rules quotation mid-confession that pops the scene's mood

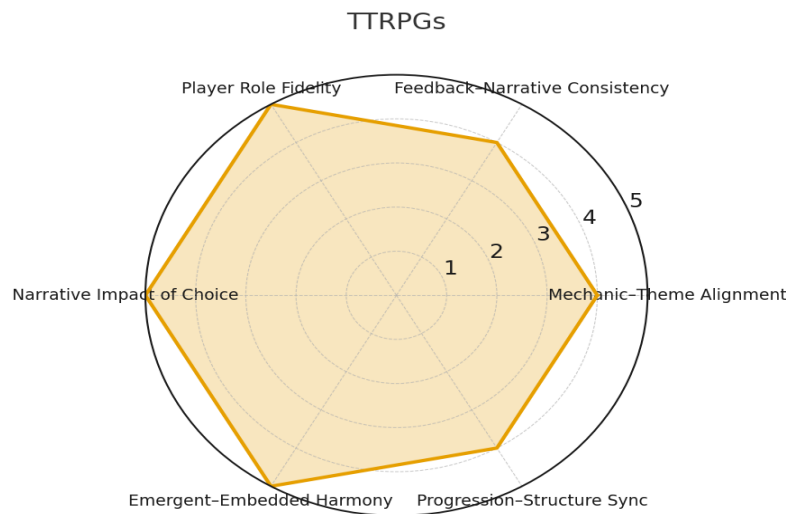
Axis implicated: Feedback–Narrative Consistency

Cause: in-scene pedagogy

Lever: quiet-resolution policy and after-scene debrief for rules clarity

### 5.12.4 Harmony radar and profile

As shown in Figure 5.11, the harmony radar visualizes TTRPGs' performance across the six axes of the LHEF, highlighting where narrative and mechanics reinforce one another and where tensions appear.



**Figure 5.11:** Radar chart of TTRPGs' harmony profile

Scores: Mechanic-Theme 4; Feedback-Narrative 4; Player Role Fidelity 5; Narrative Impact of Choice 5; Emergent-Embedded 5; Progression-Structure 4.

#### Harmony profile

At a healthy table, procedure carries the theme rather than fighting it. Spoken feedback and minimal props keep tone clear when used with care. Players act as co-authors, not button pushers. Every choice writes the future rather than decorating it. Emergence thrives because prep frames dilemmas instead of dictating outcomes. Structural beats sync with advancement most of the time, though mid-scene rewards can tug attention away from live emotion.

#### Primary design lever for this medium

Adopt quiet-resolution windows for charged scenes, rotate spotlight with a visible clock, and batch advancement at scene boundaries so tone and role stay intact while decisions keep writing the fiction.

## 5.13 Escape Rooms

Title: Escape Rooms (representative 60–75 minute, story-forward venue)

Medium: Physical location with GM and live hint system

Build/Patch: N/A

Evaluator: Cem Çelik

Date: 17.08.2025

Evidence handling: for physical rooms, “captures” are timestamped photos of props with venue permission.

### **5.13.1 Contracts**

Narrative contract

Players embody a small team asked to resolve a crisis, recover an artifact, or uncover a truth inside an authored fiction. Tone promises curiosity, suspense, and occasional awe. The role is collaborative problem solver whose care for the fiction should matter, not just speed.

Ludic contract

Core loop: observe, search, hypothesize, test, unlock, advance. Hints are mediated by a Game Master or in-world device. Failure means time expires and the fiction resolves without the players; some venues offer partial endings. Progression is gated by physical locks, hidden mechanisms, and scene transitions. The system promises fair clueing, sensory affordances that match their intended reading, and safety.

### **5.13.2 Axis answers and judgments**

#### **5.13.2.1 Mechanic–theme alignment**

Label: 4 Partial Harmony

Why: Physical affordances that match the fiction can make theme tangible, like decoding a captain’s log with a real sextant. Friction appears when abstract padlocks or rote ciphers dominate a narrative that claims emotional stakes. Search-only bottlenecks weaken promised investigative roles.

Design lever

Replace one late generic lock with a fiction-first interaction that echoes the room’s thesis, like aligning constellations to reveal a code.

#### **5.13.2.2 Feedback–narrative consistency**

Label: 4 Partial Harmony

Why: Lighting, sound, and in-world hinting keep tone intact when tuned carefully. GM text popups or loud chimes can snap mood if they look like a chat client from outside the fiction. Good rooms route hints through an actor character, prop monitor, or environmental change.

Design lever

Adopt an in-fiction hint persona and throttle hint cadence during dramatic lines so feedback never upstages the scene.

#### **5.13.2.3 Player role fidelity**

Label: 4 Partial Harmony

Why: The role promises collaborative inquiry. Rooms support this when parallelizable puzzles allow different teammates to contribute and when resets are quick. Role breaks when one dexterity gate locks the entire team or when scavenger hunts force undignified crawling that the fiction cannot justify.

Design lever

Ensure every phase has at least two simultaneous puzzle lines and provide a graceful bypass for any single-point dexterity gate.

#### **5.13.2.4 Narrative impact of choice**

Label: 3 Neutral

Why: Most choices are solution order, hint timing, and who tackles what. These shape pacing and team morale but rarely produce different endings. A small set of rooms offer branchy finales or failure-specific codas; those are the exceptions.

Design lever

Offer a lightweight coda variant based on hint count or a tracked moral choice, even if the main spine remains linear.

#### **5.13.2.5 Emergent–embedded harmony**

Label: 5 Harmony

Why: The authored set and puzzle tree are embedded, yet the team's improvisation creates anecdotes that sit comfortably in the fiction when props respond reliably. Creative leaps, shared discoveries, and improvised tool uses produce memorable micro-stories without violating design intent.

Design lever

Seed subtle affordances that reward lateral thinking in safe ways, and acknowledge them diegetically with a small in-world response.

#### **5.13.2.6 Progression–structure synchronization**

Label: 4 Partial Harmony

Why: Good rooms escalate from broad search to focused deduction to spectacle. Time pressure can sharpen beats, but hard stalls near the end flatten drama. Hint pacing that clumps in the last ten minutes breaks the arc.

Design lever

Pre-balance hint thresholds so gentle nudges appear earlier, and reserve one emotional set-piece for after the hardest deduction to keep the finale buoyant.

#### **5.13.3 Logs**

Intentional dissonance log

Type: tension spike via non-diegetic nudge

Scope: momentary

Cue to intent: briefly breaking fiction with a safety reminder during a dark scene to protect players

Design aim: prioritize safety while minimizing tonal disruption

Misalignment log

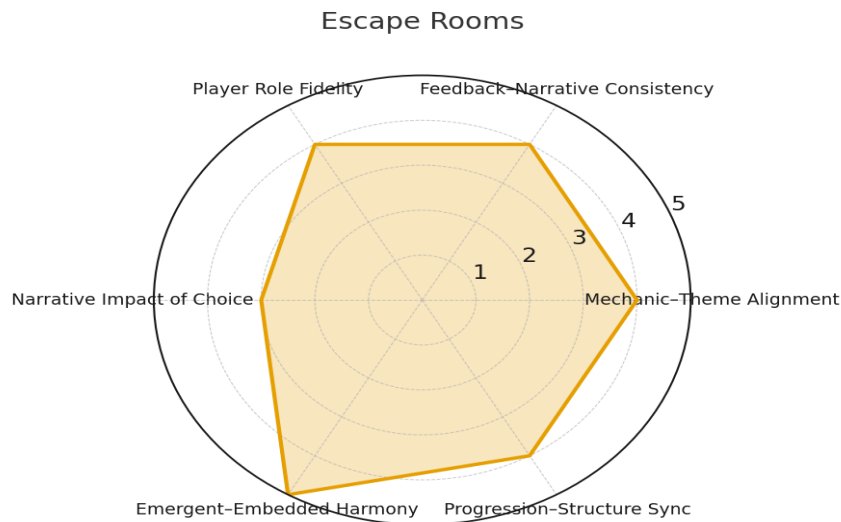
Moment: generic chat-window hint during a solemn discovery

Axis implicated: Feedback–Narrative Consistency

Lever: diegetic hint persona and dampened chime

### 5.13.4 Harmony radar and profile

As shown in Figure 5.12, the harmony radar visualizes Escape Rooms' performance across the six axes of the LHEF, highlighting where narrative and mechanics reinforce one another and where tensions appear.



**Figure 5.12:** Radar chart of Escape Rooms' harmony profile

Scores: Mechanic-Theme 4; Feedback-Narrative 4; Player Role Fidelity 4; Narrative Impact of Choice 3; Emergent-Embedded 5; Progression-Structure 4.

#### Harmony profile

When props act like what they are, the story breathes. Hinting that speaks in character keeps the room intact. Teams feel like investigators when parallel lines exist and stalls have exits. Choice mostly shapes tempo, not plot. Emergence thrives because groups make meaning together on top of fixed sets. Structure sings when escalation is steady and hint cadence is pre-tuned instead of dumped at the buzzer.

#### Primary design lever for this medium

Commit to in-fiction hint delivery, guarantee at least two parallel puzzle lines at all times, and phase hints earlier so the finale remains thematic, not frantic.

### 5.14 Magic: The Gathering

Title: Magic: The Gathering (tabletop card game, Limited and Constructed exemplars)

Medium: Analog cards or digital client with identical ruleset



Build/Patch: Rules Comprehensive latest, paper legality by format

Evaluator: Cem Çelik

Date: 20.09.2025

Evidence handling: for paper, use match photos and annotated scorepads; for digital, use client replays or screenshots.

#### **5.14.1 Contracts**

Narrative contract

Fiction frames players as Planeswalkers shaping reality through color philosophies. Themes include identity, constraint, growth, and conflict across worlds. The role promised is a strategist whose choices reflect a philosophy of magic rather than mere efficiency.

Ludic contract

Core loop: draw, play lands, cast spells, attack, defend. Resource management via mana curves, color requirements, and card advantage creates tempo and inevitability pressures. Failure ends a game; matches often use best-of-three with sideboarding. Progression exists as deck construction, metagame learning, and in Limited, reading signals and building on the fly.

#### **5.14.2 Axis answers and judgments**

##### **5.14.2.1 Mechanic–theme alignment**

Label: 5 Harmony

Why: The color pie encodes themes directly into mechanics. White's structure and small-team tactics, blue's knowledge and delay, black's ambition with costs, red's impulse and burn, green's growth and inevitability. Sets express world stories through mechanics like Investigate, Sagas, or Daybound/Nightbound.

Suggested captures to source

- Side-by-side cards that express color philosophies in rules text.
- A set mechanic that ties to its plane's fiction, e.g., Sagas on Theros or Enchantments on Kamigawa.

Design lever

Maintain strict color-pie guardrails when pushing power so philosophy never feels interchangeable.

#### **5.14.2.2 Feedback—narrative consistency**

Label: 4 Partial Harmony

Why: Art, flavor text, frame treatments, and sound in clients support fiction. Tournaments and digital ladder feedback prioritize speed, numbers, and rope timers, which tilt atmosphere toward optimization. Paper play at kitchen tables reads more in-fiction than high-level client play.

Suggested captures to source

- Digital client lethal turn with rope timer visible.
- Paper play photo where art, tokens, and dice form a diorama-like scene.

Design lever

Offer optional slower presentation modes and reduce intrusive timers in casual queues; keep flavor text surfacing on key first casts.

#### **5.14.2.3 Player role fidelity**

Label: 4 Partial Harmony

Why: The role says philosophy-driven strategist. In practice, metagame pressures often reward best-rate efficiency even when a card's flavor suggests restraint. Player expression still maps to identity through color choices, archetype selection, and pet lines.

Suggested captures to source

- Decklist contrasting a flavor-forward brew vs a tier-one list in the same colors.

Design lever

Boost one or two underplayed, strongly flavored build-around cards per set to keep role expression viable without warping power.

#### **5.14.2.4 Narrative impact of choice**

Label: 4 Partial Harmony

Why: Choices at deckbuilding, sideboard, mulligan, and sequencing reshape match narratives. Best-of-three structure adds a between-games story of adaptation. There is no authored plot outcome, but the match's dramatic arc is the narrative state.

Suggested captures to source

- Sideboard pivot that changes a matchup's feel in game two.
- Mulligan decision tree screenshot with expected value notes.

Design lever

Surface deck identity tips in-client after game one for beginners, framed as "paths" rather than prescriptions.

#### **5.14.2.5 Emergent–embedded harmony**

Label: 5 Harmony

Why: Embedded rules are strict, yet emergent stories arise from interactions, topdecks, and bluff lines. Combo turns, stabilizations at one life, or clever bait spells create anecdotes that fit the world's philosophies because the color pie constrains what is possible.

Suggested captures to source

- One-life stabilization sequence with a topdeck.
- Bluff or represent line that flips combat math.

Design lever

Highlight post-match "story moments" in clients, letting players bookmark a topdeck or bluff for later review without revealing hidden info during the game.

#### **5.14.2.6 Progression–structure synchronization**

Label: 4 Partial Harmony

Why: A game's phases and turns map well to tension curves. Best-of-three aligns with setup, reveal, adaptation. Digital clients that accelerate animations can flatten the sense of weight, while slow paper shuffles can extend lulls.

Suggested captures to source

- Arena match showing fast animation pacing across turns.
- Paper event photo showing sidebar and notes between games.

Design lever

Allow per-queue animation pacing profiles and a short reflective pause at the start of game two that emphasizes the adaptation story.

### 5.14.3 Logs

Intentional dissonance log

Type: competitive optimization vs embodied fiction

Scope: format dependent

Cue to intent: tournament culture prizes speed and win rate, which the game embraces to survive as sport

Design aim: keep philosophy visible without hiding that this is also a sport

Misalignment log

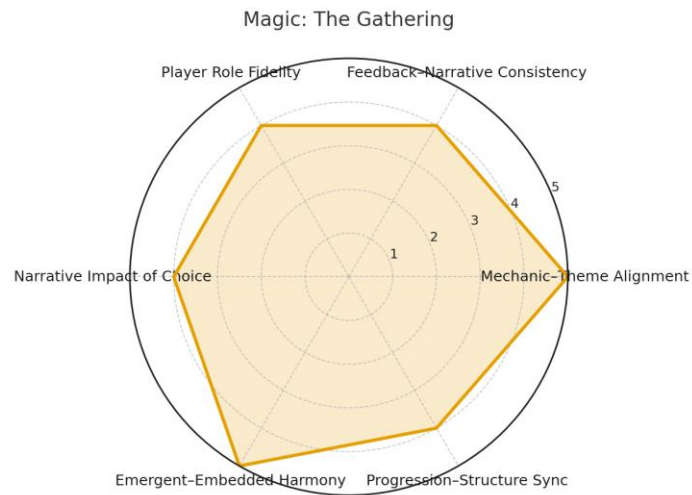
Moment: client rope timer intrudes on a contemplative saga turn

Axis implicated: Feedback–Narrative Consistency

Lever: relaxed timers in casual queues and slower presentation mode

### 5.14.4 Harmony radar and profile

As shown in Figure 5.13, the harmony radar visualizes Magic: The Gathering's performance across the six axes of the LHEF, highlighting where narrative and mechanics reinforce one another and where tensions appear.



**Figure 5.13:** Radar chart of Magic: The Gathering’s harmony profile

Scores: Mechanic–Theme 5; Feedback–Narrative 4; Player Role Fidelity 4; Narrative Impact of Choice 4; Emergent–Embedded 5; Progression–Structure 4.

#### Harmony profile

Philosophy is baked into the rules, not taped on. Presentation can tilt toward hurry, yet tabletop aesthetics and modern set mechanics keep story present. Players often choose identity through colors and archetypes even when the ladder pushes sameness. Decisions at build and sideboard write the match’s plot. Interaction creates legend-level moments inside tight constraints. Turn structure and match format support drama, though client speed and event logistics can blur the beats.

#### Primary design lever for this medium

Protect the color pie and make identity legible at all skill levels: power up one resonant build-around per set, slow presentation in casual play, and surface post-match story bookmarks.



## **6. FRAMEWORK EVALUATION AND DISCUSSION**

This chapter explains how to interpret a ludonarrative profile produced by the LHEF using a five-label qualitative rubric. The labels are descriptive categories, not scores. It closes with strengths and limitations, theoretical implications, proposals to refine the framework, and a short reflection.

### **6.1 Reading a profile**

Each axis judgment uses a five-level qualitative rubric: 5 Sustained harmony, 4 Mostly coherent, 3 Mixed, 2 Frequent misalignment, 1 Sustained dissonance. Labels summarize argued evidence at named units of analysis. They are never averaged or combined into scores. Read a profile by looking for patterns across axes, calling out exceptions, and identifying small design levers that could move a Mixed or Frequent misalignment axis toward Mostly coherent. A radar graphic may be used to visualize the six axis labels. It is expository only and does not represent a numeric score.

### **6.2 Reading a harmony profile**

A six-axis radar is expository, not decisive. Read it as a pattern of emphasis that compresses the worksheet's arguments into a shape you can discuss.

First, read contours, not spikes. A uniformly high or low profile is rare; most games exhibit trade-offs: disciplined tone (Feedback–Narrative) paired with fragile consequence surfacing (Choice Impact), for instance. Second, read axis couplings. Role Fidelity often rides with Mechanic–Theme because incentive structures both enact theme and teach role; a dip in either can pull the other down. Third, read exceptions. A single outlier axis can be intentional dissonance—recorded in the log and cued clearly to the player—or a tuning debt (e.g., a late economy flattening Progression–Structure). Always return to captures and contracts: a label is only as strong as the concrete evidence that cites a unit of analysis and speaks in the language of the Narrative and Ludic contracts.

When communicating profiles to non-specialists, pair the radar with the harmony profile paragraph (six sentences, one per axis, pattern + exception) and a single lever the team can pull next. This keeps interpretation action-oriented and prevents numerology.

### **6.3 From profile to levers (design guidance)**

Interpretation is valuable when it yields next actions. Use the worksheet's Design lever line under each axis to convert observations into small, testable changes. Keep levers local to axes but aware of couplings:

- Mechanic–Theme → adjust reward ladders, gate conditions, or verb availability so the dominant loop enacts the declared theme (Salen & Zimmerman, 2003).
- Feedback–Narrative → retime or suppress overlays at tagged beats; adjust camera rules in failure; rebalance mix priorities; align type/UX grammar with tone (Nitsche, 2009; Isbister, 2016).
- Player Role Fidelity → reweight incentives for in-character behavior; surface reputation/faction state; add soft-fail responses to off-role acts.
- Narrative Impact of Choice → surface flags sooner; add small systemic ripples (barks, prices, access); align foreshadow/payoff timing with stakes.
- Emergent–Embedded → add meaning handles to system outputs (aftermath traces, AI barks, log entries); prune collectible noise; frame emergence with embedded context (Wardrip-Fruin, 2009; Mateas & Stern, 2005).
- Progression–Structure → retime unlocks/gates; reshape economy slopes around act turns; ensure pressure/relief cadence matches the arc (Ryan, 2015).

A small before/after mini-radar and two contrasting captures (old vs. new) transparently demonstrate the lever's effect.

### **6.4 Overview of Framework Application Across Cases**

Designed to find, examine, and contrast the structural and experiential alignment between narrative expression in interactive media and gameplay systems, the Ludonarrative Harmony Evaluation Framework (LHEF). Unlike conventional game



analysis tools that view narrative and mechanics as distinct layers, LHEF aims to assess their relational integration. Effectively emphasising harmony and dissonance as either complementary or disruptive forces.

Spanning varied case studies—from minimalist, metaphor-driven games (Before Your Eyes), to environmental systems (Outer Wilds), to analogue symbolic structures (Magic: The Gathering)—the framework has been fully applied, examining its adaptability, granularity, and usefulness across different kinds of interactivity.

By means of identification, this chapter evaluates how well the LHEF performed in those settings by:

- Consistent merits of the system across genres and formats
- Significant blind areas or edge cases
- Harmonious/dissonant patterns that cross medium
- The theoretical scope and possible improvements of the framework

In the end, the aim is not only to confirm the framework's application but also to frame it as a useful design lens and critical tool for academics, designers, and interactive storytellers.

## **6.5 Cross-Case Trends and Contrasts**

Looking at the case studies shows clear patterns in how ludonarrative harmony or dissonance shows up across both digital and analogue interactive systems. Regularly capturing the complexity and diversity of every instance, the six evaluation axes of the LHEF offer the best view for analysing these trends. But apart from personal assessments, some general trends show more general design practices and conceptual conflicts in interactive narrative systems.

### **6.5.1 Harmony most readily emerges from systemic coherence, not just story quality**

Ludonarrative harmony across Dead Space, Outer Wilds, and Escape Rooms was not always connected to the complexity or depth of the story but rather to how well the basic interactive systems expressed or supported narrative themes. Harmony in Dead Space comes from the in-world user interface and Isaac's tool-based weaponry rather

than from branching choices or conversation depth. Similarly, *Outer Wilds* gets narrative power not from cinematic storytelling but from including ecological interdependence into its planetary systems. This suggests that systems coherence with thematic purpose is a better predictor of harmony than traditional literary or cinematic narrative tools.

### **6.5.2 Dissonance arises from role disjunction and feedback conflict**

One of the most clear dissonant case, *BioShock*, reveals a consistent pattern: dissonance increases when narrative framing conflicts with player agency. This can originate from:

- Mechanical reward systems that undermine moral themes—for instance, *BioShock*'s illusion of moral choice.
- Narrative framing of the protagonist in conflict with their mechanical behaviour—for example, the body count of "reluctant heroes" such as Lara Croft or Nathan Drake.

Conversely, even without narrative branching, games like *Spider-Man* and *Magic: The Gathering* flourish when player behaviour and character identity are narratively consistent. Avoiding dissonance, then, is mostly a question of role fidelity—the congruence between what a character is and what the player is supposed to do.

### **6.5.3 Embedded + emergent storytelling yield strong harmony when balanced**

Many of the finest harmony examples—TTRPGs, *Escape Rooms*, and *Outer Wilds*—show the power of combining embedded narrative (authored material) with emergent narrative (player-driven reconstruction or action). This balance lets players create and read meaning, therefore enabling experiential authorship without total narrative control.

The LHEF assisted in isolating the two types of narrative, therefore helping to differentiate between games where players discover a story (*Dead Space*) and those where they co-create it (TTRPGs). In contrast, games that overly favour one side—such as heavily scripted games with little systematic input or sandbox systems with no narrative context—struggle to stay in line.

#### **6.5.4 Analog formats are equally viable for ludonarrative harmony**

The inclusion of TTRPGs, Escape Rooms, and Magic: The Gathering revealed that ludonarrative harmony transcends digital games. Indeed, analogue formats can occasionally expose more clear examples of mechanical-narrative alignment as their systems are more simple, readable, and reliant on interpretive play.

Such as:

TTRPGs stress methodical design choices—such as those for social interaction or morale—by externalising narrative control, therefore preserving thematic alignment.

MTG creates an abstract yet powerful symbolic harmony by linking colour philosophy directly to mechanical expression.

This tendency strengthens the argument that ludonarrative harmony is media-agnostic and can emerge in any interactive system supporting congruence between form, function, and narrative.

#### **6.5.5 Harmony does not require narrative branching**

Case studies reveal one significant result: harmony is not dependent on narrative reactivity or choice-driven tales. Many of the most harmonious experiences—Before Your Eyes, Dead Space, Outer Wilds—have no branching paths yet still offer great narrative engagement. This is achieved by using:

Design of the surroundings reflecting narrative tone

Feedback systems encouraging emotional states

Systems mirroring narrative stakes and structure

This finding challenges the idea that interactivity must always connect to narrative transformation. Rather, it stresses that usually, ludonarrative harmony is about expressive alignment instead of narrative tailoring.

#### **6.5.6 The LHEF successfully captures nuanced differences across forms**

The system let one compare across a wide range of case studies by keeping six axes:

- Conceptual clarity—for instance, distinguishing embedded from emergent storytelling

- Focus on behaviour rather than just material—e.g., role fidelity and mechanic-theme alignment.
- Flexibility across media forms
- Though edge cases like MTG required symbolic interpretation, emphasising the importance of defining what "narrative" means in different contexts, no case study fell entirely outside the reach of the framework.

All things considered, the LHEF proved to be sensitive enough to differentiate between structural dissonance, partial alignment, and strong harmony, so offering a strong tool for design evaluation as well as analysis.

## **6.6 Strengths and Limitations of the LHEF**

The Ludonarrative Harmony Evaluation Framework (LHEF) was meant to measure how interactive systems—especially games—attain or fail to attain harmony between their narrative structures and mechanics. Its axis-based, modular design makes it relevant for a wide range of genres and formats. But, like all analytical models, it has affordances and limits. This part first addresses the advantages of applied analysis; next, it highlights the drawbacks and areas that require improvement.

### **6.6.1 Strengths**

#### **6.6.1.1 Cross-media adaptability**

Its media-agnostic relevance is among LHEF's top qualities. The framework effectively looked at digital games (Dead Space, Before Your Eyes), tabletop and analogue formats (TTRPGs, MTG), spatial games (Escape Rooms), and complicated systematic titles (Outer Wilds). Emphasising functional and behavioural interactions between narrative and mechanics—rather than format-specific traits—helps one to compare greatly across several design logics.

#### **6.6.1.2 Granularity through modular axes**

Unlike binary evaluations—e.g., "is it harmonious or dissonant?"—the LHEF divides the ludonarrative relationship into six axes:

- Mechanic–Theme Alignment
- Feedback–Narrative Consistency
- Player Role Fidelity
- Narrative Impact of Choice
- Emergent–Embedded Story Balance
- Progression–Narrative Structure Sync

This system lets one somewhat spot a game's merits and shortcomings. For instance, BioShock emphasised certain fault lines in its design harmony rather than a consistent assessment by scoring low on player role fidelity but high on progression sync.

#### **6.6.1.3 Design as well as study aids**

The LHEF is a possible design heuristic as well as a tool for post hoc assessment. Turning narrative-mechanic alignment into a series of functional checkpoints motivates designers to add narrative affordances into methodical characteristics early in the design process. For professionals, this is both important and helpful.

#### **6.6.1.4 Unbiased towards format**

Especially for those with clear narrative content, game studies frameworks can sometimes implicitly favour digital games. The LHEF questions this bias by allowing abstract, symbolic, or emergent forms of narrative expression—such as in Magic: The Gathering or TTRPGs. Interaction designers working outside digital environments—whether in education, simulation, or live-action roleplay—must take this into account.

Teachable rubric and tools

The five-label rubric, worksheet, and questionnaire make the method usable by junior analysts while keeping judgments qualitative and evidence-backed.

Auditability

Units of analysis, capture logs, and reflexive memos create an audit trail that another evaluator can follow and contest.

## **6.6.2 Limitations**

### **6.6.2.1 Little player feedback data contact**

The present LHEF is a design-oriented framework; its assessment is based on methodical affordances rather than on player perception, reception, or emotional reaction. Though it ignores knowledge from player studies, UX metrics, or experiential feedback, this preserves theoretical clarity. Consequently, a game might seem harmonious in design terms but still be unpopular with its audience.

### **6.6.2.2 Edge cases and paratext doubt**

Games like MTG or Escape Rooms push the conventional definition of "narrative." Though it calls for philosophical justification that may not be accepted in all academic fields, the LHEF accomplishes this by broadening the definition to include spatial or symbolic narrative structures. Future adaptations could call for more definitional rigour.

## **6.7 Theoretical Significance and Academic Implications**

Apart from being a means of evaluating game design, the Ludonarrative Harmony Evaluation Framework (LHEF) also adds to theoretical discussion in narrative theory, game studies, and interaction design. Its usefulness is in highlighting the dynamic interaction between narrative intention and procedural logic—an area of historical interest but little formalisation. This part explains the theoretical significance of the LHEF and its consequences for related academic fields.

### **6.7.1 Bridging the procedural–narrative divide**

For many years, game studies have been marked by a perceived conflict between ludology—which emphasises rules and systems—and narratology, which emphasises narrative. Many analytical frameworks nonetheless view narrative and mechanics as distinct spheres to be balanced or reconciled even though academics like Jesper Juul (2005) and Marie-Laure Ryan (2001) have questioned this dichotomy.

The LHEF questions by assessing how these systems interact. It treats games as expressive systems, where narrative and mechanics are co-constitutive instead of opposing. Though this is consistent with views such narrative architecture (Jenkins,

2004) and procedural rhetoric (Bogost, 2007), it pushes them by providing a systematic evaluative framework. By doing this, it helps to move from binary thinking to integrative modelling.

### **6.7.2 A post-ludology framework for holistic analysis**

The LHEF shows a post-ludology approach that recognises the narrative potentials of games by emphasising relational measures including player role fidelity, embedded/emergent balance, and mechanic–theme alignment, therefore avoiding their reduction to filmic imitation or authorial scripting.

Its focus on experiential consistency and semiotic design speaks to ideas of ludosemiotics, ergodic literature, and interaction ritual. Importantly, it builds on but departs from earlier frameworks by privileging narrative utility within gameplay systems, not just atop them.

### **6.7.3 Expanding the definition of narrative**

The LHEF implicitly contends that "narrative" should be understood not just as a series of events but also as:

- Experiential roleplay (TTRPGs)
- Symbolic identity expression (MTG)
- Environmental legibility (Escape Rooms)
- Temporal structure (Outer Wilds, Before Your Eyes)

This acknowledges games as multimodal narrative platforms and helps Ryan's (2006) call for several degrees of narrative understanding—diegetic, symbolic, experiential. By providing a taxonomy of delivery methods based on interactive form, it adds to narrative theory.

### **6.7.4 Implications for interaction design and HCI**

Apart from game research, the framework provides a methodological perspective for HCI and interaction design, especially in contexts where user intent and meaning must guide system behavior—such as:

- Narrative-based simulations (education, training)
- Immersive learning environments

- Role-based interaction systems (e.g., VR collaborative tools)

In these areas, mechanical-narrative mismatch might impair usability, understanding, or emotional resonance. Any system where interaction design seeks to support a narrative arc or emotional journey can use the LHEF's six axes as heuristics for early-stage prototyping.

### **6.7.5 Opening dialogue on ludonarrative ethics and responsibility**

The diagnostic power of the LHEF also provokes more fundamental issues regarding narrative responsibility in system design. While Spider-Man demonstrates how reward systems can support identity crises with narrative empathy, games like BioShock emphasise how reward structures can conflict with moral message.

Thus, the framework may inform design ethics, prompting creators to ask:

- What message does this system reinforce through player behavior?
- Is the narrative being undercut by the core gameplay loop?
- Are we allowing role fidelity, or forcing dissonance?

The LHEF helps to further the discussion on significant play, ethical design, and narrative consistency in interactive systems by operationalising these issues into analytical axes.

## **6.8 Refinement Proposals for the LHEF**

Although the Ludonarrative Harmony Evaluation Framework (LHEF) has shown usefulness and flexibility in many interactive formats, its use across eight case studies has highlighted various structural, methodological, and pedagogical areas for development. This section offers suggestions meant to improve the framework's clarity, accessibility, and analytical depth without sacrificing its adaptability across media or design philosophies.

### **6.8.1 Clarifying the scope of “Narrative” per axis**

Evaluation made it obvious that "narrative" is not a monolithic idea—particularly when used across various games and formats. For example, MTG tells narrative symbolically, TTRPGs do so via role-based improvisation, and Dead Space depends on environmental signals.



To improve precision, the LHEF could:

- Include narrative mode descriptors (e.g., embedded, emergent, symbolic, experiential) inside every axis.
- Include guiding questions that enable assessors to tell whether a mechanic conveys narrative via theme, via sequence, or via metaphor.
- Provide a glossary of narrative structures as understood in game studies to prevent medium-specific assumptions.

### **6.8.2 Integration of player-centric evaluation dimensions**

The present LHEF emphasises mostly designer purpose and systematic consistency. Player interpretation can, however, disturb or enhance ludonarrative harmony, particularly in games with great emergent potential (TTRPGs, *Outer Wilds*, *Spider-Man*).

To address this:

- A new, optional axis could be added: “Perceived Narrative Alignment”, based on UX testing, narrative recall studies, or subjective interviews.
- Alternatively, a two-pass analysis approach could be used instead; evaluators would first use LHEF from a design perspective and then from a player reception viewpoint.

This would enable reflection on narrative dissonance as experienced, not only as constructed, and extend the framework into fields of HCI, player modelling, and ludic psychology.

### **6.8.3 Non-digital format contextual heuristics**

Though LHEF did well across analogue games, edge cases like *Escape Rooms* and *MTG* exposed the need of context-specific heuristics. For example:

- Should “progression–narrative sync” apply differently when pacing is group-controlled (*TTRPGs*) vs. room-controlled (*Escape Rooms*)?
- When the player is both a character performer and a rule enforcer, how does “role fidelity” change?

To solve this, a future iteration could offer:

- Alternative heuristics or interpretive guides for specific game classes (e.g., tabletop, ARGs, LARPs).
- A modular toggle to reinterpret axis weights or definitions depending on format and genre.

## **6.9 Summary and Reflection**

Cross-case study, theoretical positioning, and structural evaluation helped this chapter to critically investigate the Ludonarrative Harmony Evaluation Framework (LHEF). Its main objective was to evaluate the framework's capacity to methodically diagnose the alignment—or misalignment—between narrative expression and gameplay systems across a spectrum of interactive formats.

### **6.9.1 Framework validation**

By means of its use across eight different case studies, the LHEF demonstrated itself to be:

Strong across media, including both digital and analogue experiences;

Sensitive to nuance, differentiating between shallow consistency and deep structural harmony;

Broad in scope, suitable for both experiential and symbolic readings of story.

Consistently, the framework found the means by which harmony was either attained (as in *Dead Space* or *Outer Wilds*) or compromised (as in *BioShock*), therefore supporting its relevance to design criticism as well as scholarly discussion.

### **6.9.2 Theoretical contribution**

The LHEF adds to game studies by: Reframing ludonarrative discourse as a question of systemic alignment, rather than opposition between gameplay and story;

Offering a methodical approach that transcends anecdotal or strictly interpretive criticism.

Helping to combine narrative theory, procedural rhetoric, and interaction design under one evaluative prism.

This synthesis moves the discussion forward past the ludology–narratology controversy by placing games as multimodal narrative systems requiring a new category of assessment tools.

### **6.9.3 Limitations and future directions**

The system has its boundaries. Its present iteration:

- Lacks a formal quantitative layer, which restricts the aggregation of comparison data;
- Excludes player perception metrics, therefore missing crucial aspects of emotional and experiential response.

These constraints, meanwhile, point areas for future development as well:

- Larger rubrics, player-centered axes, and HCI techniques combined;
- Heuristics for analogue or mixed-reality systems based on format.

### **6.9.4 Final reflection**

The LHEF's development and implementation in this thesis was a conceptual as well as a methodological exercise. It shows the changing knowledge that games are interactions with meaning-bearing rules—spaces where what players do and what those actions mean can be one and the same, not only systems or only stories.

The LHEF provides a means of formalising our awareness, research, and eventual design for this alignment. Its goal is to change the focus of analysis from whether a game "tells a good story" to whether a game acts out that narrative, systemically and structurally, in how it is played.



## **7. CONCLUSION**

### **7.1 Summary of Research and Findings**

This dissertation investigated ludonarrative harmony as a defining criterion for judging the congruence between narrative structures and gameplay systems in interactive media. Situated within game studies, narrative theory, and interaction design, the study tackled a fundamental issue: How can interactivity develop into a coherent narrative device, and what design principles support its alignment with narrative structure?

The study moved through four main phases to handle this:

#### **7.1.1 Defining ludonarrative harmony**

By separating ludonarrative harmony from related ideas such as, the thesis first made clear what defines it.

- Narrative immersion
- Narrative affordance
- Procedural rhetoric
- Ludonarrative dissonance (as originally framed by Clint Hocking)

Instead of saying harmony is the lack of dissonance, the research defined it as an active alignment across player role, narrative delivery methods, feedback systems, and mechanics. This called for knowing narrative as an emergent quality of interaction rather than just as written material.

#### **7.1.2 Constructing the evaluation framework (LHEF)**

The Ludonarrative Harmony Evaluation Framework (LHEF) was created to systematise the analytical process over six axes:

- Mechanic–Theme Alignment
- Feedback–Narrative Consistency
- Player Role Fidelity

- Narrative Impact of Choice
- Emergent–Embedded Story Balance
- Progression–Narrative Structure Sync

These axes let one evaluate finely as well as compare different formats and narrative philosophies. To fit both digital and analogue systems, the framework was purposefully modular and format-agnostic.

### **7.1.3 Applying the framework across case studies**

The LHEF was used to examine eight case studies—from analogue symbolic systems (Magic: The Gathering) to minimalist narrative experiments (Before Your Eyes). These instances highlighted trends in how various kinds of interactivity support narrative expression:

- Harmony emerged when mechanics were symbolically or thematically coherent with narrative content.
- Dissonance frequently stemmed from misaligned player roles, contradictory reward systems, or rigid narrative framing.
- Many successful examples did not rely on branching plots, but on systemic design that reflected narrative stakes and tone.

The case studies also demonstrated the framework’s strength in accommodating symbolic, spatial, emergent, and embedded storytelling, validating its use beyond traditional plot-driven games.

### **7.1.4 Evaluating the framework’s performance**

Chapter 7 critically assessed the LHEF’s conceptual and methodological robustness. Key strengths included:

- Applicability across media formats
- Utility for both analysis and design
- Flexibility in accommodating different narrative modalities

However, limitations were identified in the framework's current form:

- Absence of player reception metrics
- Lack of quantitative evaluation tools

Proposals for refinement were made, including the integration of player feedback dimensions, rubric-based scoring models, and visualization tools.

### **7.1.5 Synthesis of findings**

This study taken as a whole revealed that:

- Ludonarrative harmony is not medium-bound; it can arise in any interactive system with mechanical expression and coherent narrative intent.
- Design consistency more frequently leads to harmony than narrative branching or spectacle.
- Critical and constructive methods to interactive narrative systems depend on evaluation tools such as the LHEF, which are not only feasible but also required.

## **7.2 Implications for Game and Interaction Designers**

Game designers, narrative designers, and interaction design practitioners will find many direct consequences in the development and use of the Ludonarrative Harmony Evaluation Framework (LHEF). These consequences are not only theoretical but also practical in the areas of narrative consistency, system design, user experience, and project planning.

Practitioners can apply the worksheet during concept, prototype, and post-mortem reviews by writing the two contracts first, then answering the axis prompts and assigning a five-label qualitative rating with a short justification.

### **7.2.1 Harmony can be designed systemically**

One of the most notable results of this research is that authored conversation or cinematic presentation does not determine ludonarrative harmony. Rather, it most often appears when:

- Mechanics mirror character limitations, goals, or motifs
- Failure states and rewards highlight the logic and stakes of the world.
- The feedback mechanisms assist the emotional or moral tone of the narrative

Designers should give narrative-consistent feedback loops top priority; these are systems that support the fiction by means of player action and system response. In *Dead Space*, for instance, diegetic UI, weapon design, and dismemberment techniques all support the horror story. System response, not surface text, is where harmony is ingrained.

### **7.2.2 Player role fidelity is critical to immersion**

Case studies showed that many dissonant experiences result from discrepancies between the player's role and the narrative representation of the avatar. Designers sometimes fall into the trap of telling a reluctant hero story while providing the player tools for hyper-aggressive action with no in-game penalty (*BioShock*, *Uncharted*, *Tomb Raider*).

Designers should question:

- What sort of person the game wants the player to represent
- Whether the fundamental mechanics support or compromise that embodiment
- Should ludic objectives conflict with narrative morality or tone
- Systemic solutions—such as changing enemy density, altering reward schemes, or embedding narrative checks—can help guarantee that player behaviour matches the character's arc.

### **7.2.3 Harmony is not a function of story complexity**

Games like *Before Your Eyes* and *Outer Wilds* show that even minimalist or structurally simple stories can generate strong emotional resonance by means of ludonarrative alignment. Designers sometimes believe that harmony calls for broad branching or cinematic excellence; yet, this research indicates that coherence triumphs over complexity.



This has significant consequences for:

- Indie development, where resources are limited but thematic emphasis is strong
- Serious games, in which message clarity is vital
- Mobile or casual formats, where session length and interface limitations might prevent conventional storytelling
- Designers can create stories via play rather than around it by using mechanics metaphorically, expressively, or ecologically.

#### **7.2.4 Narrative can be designed into feedback and progression**

Often, progression systems are seen as distinct from narrative—driven by XP, levels, or item accumulation. But, according to this study, depending on their setup, progression models can support or oppose narrative structure.

In Spider-Man, side quest placement and fast-travel avoidance support Peter Parker's struggle between public duty and personal aspirations. In keeping with its epistemological story, Outer Wilds also uses knowledge—not statistics—as the actual indicator of progress.

Designers ought to take into account:

- Whether mechanical development reflects story development
- Whether upgrades and unlocks assist character development
- How pacing tools influence narrative development
- Harmony results from mechanical rhythms matching narrative structure—when what the player learns or unlocks seems to matter to the fiction.

#### **7.2.5 Use of frameworks enhances reflective design practice**

Although this paper uses the LHEF as an analytical tool, its framework makes it just as feasible for design planning or review purposes. Designers may apply it:

- To steer narrative-mechanical alignment decisions at the conceptual level
- To identify discordant systems or feedback mismatches during prototyping
- In postmortems, to better grasp what functioned and why

The axes can be challenge prompts or checkpoints. For instance:

- Does this mechanic reflect the main conflict of the narrative?
- Is this progression arc character development?
- Do the player's decisions have significance inside the narrative?

This integration moves away from bolted-on narratives or systematic inconsistencies, therefore supporting deliberate, theme-driven design.

### **7.3 Recommendations for Future Work**

Although this thesis offers a thorough method for grasping and assessing ludonarrative harmony using the Ludonarrative Harmony Evaluation Framework (LHEF), it also paves several paths for more development—both in scholarly research and practical design methodology. Key possibilities for expanding the theoretical framework, widening empirical validation, and including new technologies and user viewpoints are described in this part.

#### **7.3.1 Empirical validation through player-centered studies**

The designer-centric viewpoint of the present system is one of its key drawbacks. Though useful for structural analysis, the LHEF now lacks empirical data on player experience, which can expose how different player demographics perceive, interpret, or reject harmony.

Future studies might investigate: Mixed-methods research combining player interviews, think-aloud protocols, and narrative recall tasks with LHEF.

Survey-based quantitative validation linking framework scoring to emotional involvement or perceived narrative coherence

Cross-cultural research looking at how cultural background affects ludonarrative perception and harmony assessment

This would help to clarify the axes of assessment of the framework to more accurately reflect interpretive diversity and situational context.

### 7.3.2 Adaptation to emerging interactive formats

The system worked well for escape rooms, tabletop RPGs, and conventional games. On the other hand, new interactive domains—such as AI-driven narrative systems, augmented reality (AR) storytelling, and procedural narrative generation—offer particular possibilities and difficulties for ludonarrative alignment.

Suggested paths:

- Evaluate adaptive storytelling systems where narrative structure changes in real-time using the LHEF; examples include dynamic NPC behavior and tailored quest lines.
- Look into spatial ludonarrative harmony in AR/VR environments where story immersion and spatial design are inextricably linked.
- Broaden the framework to include system–player co-authorship models growingly prevalent in AI-driven or sandbox settings.
- These applications will evaluate the philosophical adaptability and practical feasibility of the framework in formats other than linear or branching narrative design.

### 7.3.3 Interdisciplinary integration

Ludonarrative harmony is not only pertinent inside game studies; it also interacts with: user immersion, interface storytelling, and HCI research, particularly in affective computing.

Narrative design in serious games—including simulations, training platforms, and interactive education

Media studies, especially in examining developing hybrid forms (e.g., interactive theater, transmedia ARGs)

Future research could investigate how the framework interacts with these fields, providing cross-domain models for narrative-function alignment in experiential systems.

### 7.3.4 Expanding the framework through open adaptation

Community involvement can help the LHEF at last. A suggested next move is to make the framework open source, therefore supporting:

- Combining current UX, media semiotics, or systems theory assessment models
- Academic and business cooperative improvement guarantees relevance and responsiveness to changing demands.
- Embracing flexibility will help the LHEF to develop into a dynamic framework that evolves with theoretical knowledge as well as technical developments.

### 7.4 Final Remarks

This thesis aimed to investigate one of the most elusive problems in game and interaction design: the question of how narrative and mechanics can operate not as parallel or opposing forces, but as a unified expressive system. Ludonarrative harmony is not an abstract ideal or an accidental byproduct but rather a designable, analyzable result produced by means of the Ludonarrative Harmony Evaluation Framework (LHEF).

It does this by addressing a long-standing void in academic debate and design practice: the lack of a systematic, medium-flexible model for assessing the integration of narrative and gameplay. The LHEF enables nuanced diagnosis, comparative analysis, and forward-looking design reflection by framing ludonarrative alignment as a systematic condition instead of a binary one.

Standardizing a five-label qualitative rubric and a contracts-first workflow made the LHEF clearer to apply and easier to teach while preserving its interpretive strength for scholarly analysis.

The aim was not to announce a clear measure of harmony or to promote one design approach above another. Rather, it was to develop a common language—a tool for comprehending how meaning, emotion, agency, and mechanics interact (or conflict) in the experience of play. The story of a game is not only what it says but also what it lets the player do and how it lets them do it, as this thesis has shown.

The knowledge here will help not only designers aiming for more consistent systems but also academics, teachers, and critics looking for fresh ways to express the particular

narrative potential of interactive media. The harmony between narrative and mechanics is not a luxury in a medium defined by agency, interaction, and simulation. It is the actual language of expression.





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## **APPENDICES**

This section lists the appendices included in the thesis.

- Appendix A — LHEF Worksheet (Printable)
- Appendix B — LHEF Questionnaire Card
- Appendix C — Capture Log Template
- Appendix D — Blank Radar Template

## **Appendix A — LHEF Worksheet (Printable)**

### **Context Header**

**Game Title:**

**Build/Patch:**

**Platform/Engine:**

**Difficulty:**

**Evaluator:**

**Date:**

**Session Length:**

**Capture Index (folder/ref):**

### **Narrative Contract (3–5 sentences)**

Premise & theme(s); intended tone/mood range; player role & stakes.

### **Ludic Contract (3–5 sentences)**

Core verbs/loops and what they reward/gate; failure & recovery logic; progression promise.

If either contract is refined during analysis, strike through the original wording, add the revision below it, and initial/date the change.

### **Mechanic–Theme Alignment**

**Label (1–5):**

**Justification (2–4 lines; reference contracts & unit of analysis):**

**Capture refs (IDs + timestamps):**

**Design lever (actionable):**

**Intentional dissonance? (type/scope/cue/purpose):**

**Feedback–Narrative Consistency**

**Label (1–5):**

**Justification (2–4 lines; reference contracts & unit of analysis):**

**Capture refs (IDs + timestamps):**

**Design lever (actionable):**

**Intentional dissonance? (type/scope/cue/purpose):**

### **Player Role Fidelity**

**Label (1–5):**

**Justification (2–4 lines; reference contracts & unit of analysis):**

**Capture refs (IDs + timestamps):**

**Design lever (actionable):**

**Intentional dissonance? (type/scope/cue/purpose):**

### **Narrative Impact of Choice**

**Label (1–5):**

**Justification (2–4 lines; reference contracts & unit of analysis):**

**Capture refs (IDs + timestamps):**

**Design lever (actionable):**

**Intentional dissonance? (type/scope/cue/purpose):**

### **Emergent–Embedded Harmony**

**Label (1–5):**

**Justification (2–4 lines; reference contracts & unit of analysis):**

**Capture refs (IDs + timestamps):**

**Design lever (actionable):**

**Intentional dissonance? (type/scope/cue/purpose):**

## Progression–Structure Synchronization

**Label (1–5):**

**Justification (2–4 lines; reference contracts & unit of analysis):**

**Capture refs (IDs + timestamps):**

**Design lever (actionable):**

**Intentional dissonance? (type/scope/cue/purpose):**

### Intentional Dissonance Log (if applicable)

| Axis | Type<br>(satire/alienation/subversion/other) | Scope<br>(scene/act/systemic) | Cue to<br>intent | Design<br>aim |
|------|----------------------------------------------|-------------------------------|------------------|---------------|
|      |                                              |                               |                  |               |
|      |                                              |                               |                  |               |

### Misalignment Log (optional)

| Moment (ID/time) | Axis implicated | Hypothesized<br>(incentive/tone/pacing/etc.) | cause |
|------------------|-----------------|----------------------------------------------|-------|
|                  |                 |                                              |       |
|                  |                 |                                              |       |

## Radar & Harmony Profile

Radar plot attached/linked:

Harmony profile (one sentence per axis: pattern + exception):

Conclusion (one lever to improve alignment):

### Evidence Hygiene (Reminder)

- Every axis cites at least one capture at a named unit of analysis (sequence / mechanic / feedback artifact).
- Reference the Narrative and Ludic Contracts in every justification.
- Record platform/engine, difficulty, build/patch in the header.
- Note ambiguities in a brief memo; document disagreements rather than hiding them.

## **Appendix B — LHEF Questionnaire Card**

Use these prompts with the Worksheet to generate evidence-backed judgments on the six axes. Keep answers concise; cite capture IDs.

### **Contracts (establish first)**

- Narrative Contract: In 3–5 sentences, what does the work promise about premise, theme, tone, player role, and stakes?
- Ludic Contract: In 3–5 sentences, what do mechanics reward/gate, how does failure/recovery work, and what progression is promised?

### **Axis 1 — Mechanic–Theme Alignment**

- Which core verbs/loops embody the theme? Which contradict it?
- Where do incentives push behavior that undermines the stated theme? Give capture refs.
- One design lever to improve alignment:

### **Axis 2 — Feedback–Narrative Consistency**

- Do audiovisual/UI feedbacks reinforce tone and fiction? Where do they clash?
- Note specific moments (IDs/timestamps) where feedback reframes narrative intent.
- One design lever:

### **Axis 3 — Player Role Fidelity**

- Do permitted actions/constraints consistently reflect the promised role?
- Identify any role breaks (e.g., cutscene vs gameplay agency).
- One design lever:

#### **Axis 4 — Narrative Impact of Choice**

- Which choices echo meaningfully (state change, VO, level, economy)?
- Which choices are decorative? Provide captures.
- One design lever:

#### **Axis 5 — Emergent–Embedded Harmony**

- Do emergent stories sit comfortably with authored beats?
- Log notable synergies or collisions between systems and scripts.
- One design lever:

#### **Axis 6 — Progression–Structure Synchronization**

- Is meta-progression pacing/tone aligned with act structure/quests?
- Where does grind/reset undermine narrative cadence?
- One design lever:

#### **Synthesis**

- Pattern (one sentence per axis):
- Exceptions to the pattern:
- If applicable: Intentional dissonance (type/scope/cue/purpose):
- Final recommendation ( $\leq 2$  sentences):



## Appendix C — Capture Log Template

Usage: Log every referenced moment with a unique ID and timestamp. Keep descriptions objective; tag the unit of analysis (sequence/mechanic/feedback artifact).

Recommended CSV header provided; import into Sheets/Excel. Maintain consistent IDs and folder structure.

| ID | Times<br>tamp | Unit<br>(seque<br>nce/m<br>echani<br>c/feed<br>back) | Axis<br>(1–6) | Conte<br>xt<br>(level/<br>scene) | Short<br>descri<br>ption | Contr<br>act ref<br>(N/L) | Evalua<br>tor | File<br>path/L<br>ink | Notes |
|----|---------------|------------------------------------------------------|---------------|----------------------------------|--------------------------|---------------------------|---------------|-----------------------|-------|
|----|---------------|------------------------------------------------------|---------------|----------------------------------|--------------------------|---------------------------|---------------|-----------------------|-------|

## Appendix D — Blank Radar Template (Scores Table)

Instructions: Score each axis from 1 (poor alignment) to 5 (excellent alignment). Optionally fill Run A and Run B for before/after comparisons. Attach/export to plotting tools if needed.

| Axis                                  | Run A (1–5) | Run B (1–5) |
|---------------------------------------|-------------|-------------|
| Mechanic–Theme Alignment              |             |             |
| Feedback–Narrative Consistency        |             |             |
| Player Role Fidelity                  |             |             |
| Narrative Impact of Choice            |             |             |
| Emergent–Embedded Harmony             |             |             |
| Progression–Structure Synchronization |             |             |

Optional Narrative Summary:

- Harmony pattern (one sentence per axis).
- Exceptions and flagged risks.
- One prioritized lever.

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### **PUBLICATIONS, PRESENTATIONS AND PATENTS ON THE THESIS:**

- **Çelik, C., & Akçay Kavakoğlu, A.** (2025). A Systematic Approach to Ludonarrative Harmony: Methods for Aligning Interactive Gameplay and Storytelling. 4th International Graduate Research Symposium (IGRS'25), May 12–14, 2025, Turkey.