

Chapter

Environmental Storytelling in Video Games: Crafting Narratives beyond Words

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Abstract

Environmental storytelling has been present in video games since their very inception and has always served as an alternative to traditional storytelling devices such as dialog and cutscenes. This chapter explores the history, techniques, rationale, and psychological impact of environmental storytelling. From the 1993 title *Myst* to *Half-Life 2* and finally *Bioshock* in the modern gaming era, this unique way of presenting lore has captivated gamers in ways that traditional storytelling devices cannot replicate. The concept of the Silent Protagonist is explored, including well-known characters such as Gordon Freeman and Chell, examining this design, while also addressing its criticism. Beyond game design itself, the chapter also explores the community-driven aspect of environmental storytelling, describing how these techniques encourage speculation, discussion, and the creation of fan content. Games like *Dark Souls* demonstrate how environmental storytelling can support deeper worldbuilding, inviting players to uncover hidden layers of meaning through exploration. Recent empirical research, including a 2024 study at Uppsala University, along with established cognitive theories, such as Narrative Transportation, highlights how players process and interpret these environmental cues, even under fast-paced gameplay conditions. Ultimately, environmental storytelling is not just a design choice but a means of player engagement and agency, allowing players to experience narratives rather than merely witness them. As game worlds become increasingly complex and interactive, this approach continues to evolve, shaping the future of storytelling in digital media.

Keywords: environmental storytelling, silent protagonist, worldbuilding, community-driven content, game semiotics

1. Introduction

Narratives in video games have been presented through text and dialog options since their very inception. The prototype for such narratives can be found in the Choose Your Own Adventure books. These books allowed the readers to influence the narrative by making choices that directed them to a corresponding page and discover the consequences of his choice. These books provided the groundwork for future games in regards to branching dialogs and multiple storylines [1–2].

Initially, narrative in video games was expressed through words. The introduction of proto-cutsscenes in the Sheriff video game in 1979 allowed for a new way for developers to express narrative and Donkey Kong, released in 1981, is often considered to be the first example of a complete story told through cutsscenes [3]. Since then, cutsscenes and dialog options have become the two defining elements of traditional narrative presentation in video games – they allow the writers to transfer their classic approaches (such as screenplays, dialogs) into the video game medium.

1.1 Disruption

The game *Myst* was released in 1993 and completely foregoes the traditional narrative elements like dialog or cutsscenes. The protagonist is silent, the world introduced is foreign and unexplained, and it is up to the player to uncover the story, by looking at and analyzing the environment. *Myst* does not rely on cutsscenes (apart from a brief introduction and ending). Instead, it is the environmental clues that guide the player both in his actions and his perception of the game world [4, 5]. This new way of presenting the story has since been termed environmental storytelling, and it has influenced future successful games such as *Bioshock*, *Half Life 2* and the *Dark Souls* series.

Environmental storytelling is—as Jenkins puts it—“the art of arranging a careful selection of the objects available in a game world so that they suggest a story to the player who discovers them” [5]. It is worth noting, that while environmental storytelling is often contrasted (and will be contrasted in this chapter) with traditional storytelling devices, the two approaches are not mutually exclusive. A good example of this is the game “*Lies of P*”—noted for its engaging cutsscenes and dialog, while also incorporating much of the environmental clues and indirect storytelling drawn from its inspiration—the *Dark Souls* series.

In this chapter, we will look at the evolution of environmental storytelling, unveil the underlying motivations for choosing such an approach and finally discuss how modern studies support and formulate the principles and limitations of its application in game design.

We will also examine popular techniques in indirect narration—for example the Silent Protagonist—and explore how lore elements can be embedded in the environment. Finally, we will show how environmental storytelling can account for player choice and even function as a replacement for dialog options.

2. The evolution of environmental storytelling

2.1 Early implicit narratives

In the early days of video games, the concept of environmental storytelling was not clearly defined, but several games emerged that offered implicit narrative experiences through level design, tone, and player agency. *Zork*, a text adventure game where players explore dungeons, did not include any visuals. However, its written descriptions of objects within a fictional world—descriptions that changed based on player actions—can be seen as early spatial worldbuilding. This demonstrates that environmental focus alone can serve narrative purposes.

Another early example of an environment that serves as a medium for storytelling is the world of *Metroid*. *Metroid*, released in 1986, has since inspired an entire genre

of exploration driven platformers. While many focus on the game's mechanics, it is also one of the earliest games where the player is left to their own devices—much like the character they control. The protagonist, Samus Aran, explores a hostile alien world, and the claustrophobic level design and decaying environment subconsciously influence the player's emotional state [6]. This point is emphasized even more strongly in the game's sequel – *Metrodroid 2: Return of Samus*, released in 1991. Here, there is a secret story to uncover, the player can gradually understand where the monsters come from. This information is conveyed through observation of the environment—architecture, statues, and abandoned structures.

Metrodroid 2 was not the only release in 1991 that can be said to include implicit narrative. *Another World* – a 2D platform game also featured a silent protagonist and the story was uncovered through interaction with the environment and visual cues rather than dialog.

2.2 *Myst* and the birth of environmental storytelling

In 1993, a small studio named Cyan, founded by two brothers, released the title *Myst*. This game, which could arguably be considered one of the first indie games, quickly captivated players with its detailed 3D world. It is important to note that, unlike some of its later remakes, the original *Myst* game did not include real-time graphics; instead it relied on pre-rendered frames. While it limited player movement, this approach allowed for far greater graphical fidelity than that of its competition, and the developers used this visual strength to tell a story. *A story told (almost completely) without words* (Figure 1).

When the player begins playing *Myst*, they are shown a brief video introduction that reveals little beyond cryptic references to a mysterious book. They are then placed in an abandoned industrial environment and left to their own devices. The game's point-and-click structure encourages the player to closely examine their surroundings, searching for elements that seem out of place—and therefore likely to be interactive. Combined with the lack of instructions and sparse dialog fragments (which are more like cryptic monologs), this encourages the player to draw their own conclusions. Just like *Zork*, it featured spatial puzzles; like *Metrodroid*, it fostered exploration; and like *Another World*, it used a silent protagonist and avoided direct exposition. As we will see later, this approach—including the eerie statements from characters—will be repeated successfully by other games. Thus, *Myst* laid the groundwork for environmental storytelling as a core narrative technique. *Myst* not only combined all of these elements but also fully integrated them and treated them as the only narrative vehicle.

2.3 Narrative fusion: The synthesis of environmental and traditional techniques

System Shock, released in 1994, is an RPG video game set in a futuristic cyberpunk world where humans use cybernetic implants to enhance their biological capabilities. The game features a complex story but avoids traditional cutscenes. Instead, the narrative unfolds through audio logs and sparse monologs from a few characters. While such techniques are common in modern games, they were groundbreaking at the time—and their continued prevalence today attests to their lasting influence.

Deus Ex, released in 2000, serves as a spiritual successor to *System Shock* [7]. In addition to inheriting its immersive environment and audio logs, it introduced new



Figure 1.
“PDO45: Figure 7.4b” by Rosenfeld Media, CC BY 2.0.

elements, such as in-game text documents. These included emails, notes, and other messages written by in-game characters, allowing the player to uncover a complex web of political conspiracies and philosophical conflicts. However, *Deus Ex* also featured branching dialog trees and meaningful player choices, placing it closer to the tradition of verbal, choice-based narratives. While it retained environmental storytelling traits from its predecessor, it ultimately combined them with classic narrative techniques.

Another example of this fusion is *Half-Life 2*, released in 2004. The game is particularly notable for how it develops its protagonist—Gordon Freeman. Gordon is often cited as a Silent Protagonist [8, 9], yet he possesses a rich, implied personality. He is a theoretical physicist trying to reverse the consequences of his own research. Though he never speaks, his interactions with other characters—especially Alyx Vance—suggest a layered emotional depth. In one moment, Alyx even jokes, “Still not talking, huh?”—a rare case where a game explicitly acknowledges its silent protagonist. Despite his silence, Gordon’s identity emerges through his actions, relationships, and the world he inhabits. This resonates with recent narrative modeling strategies that treat characters as agents operating within logical world states. Lima et al. suggest that by assigning characters evolving goals and action plans—anchored to production rules and dramatic arcs—developers can evoke rich, coherent narratives without relying on explicit speech or player dialog. Freeman’s silence, in this light, becomes not a limitation but a structural decision: an open space where the narrative is inferred rather than imposed. *Valve chose not to put words in Gordon’s mouth, but his actions speak for him (Figure 2).*

The game’s environmental storytelling is instrumental in shaping this connection. As a Homo Viator—a traveler through a broken world—Gordon reacts to the world around him, but also changes it through his (pre-scripted) decisions. The game’s environments are more than just backdrops; they are part of the narrative infrastructure, filled with visual and spatial cues that convey history, danger, and purpose.



Figure 2.
“wallpaper_half-life_2_03_1600” by Niranjan, CC BY 2.0.

BioShock, released in 2007, takes the hybrid approach further. Its title—clearly an homage to System Shock [8]—signals a thematic lineage. Set in an underwater dystopia shaped by the philosophy of Ayn Rand, the game presents a narrative where the setting itself becomes ideological commentary [10]. Rather than offering a blunt critique of Ayn Rand’s philosophy, *BioShock* constructs a nuanced exploration of its ideological consequences, drawing players into a world where utopian ideals collapse under their own weight [11]. Visually, the world of BioShock is constructed in the Art Deco style, echoing the esthetics of *Atlas Shrugged*, which was first published during the peak of Art Deco’s popularity. The contrast between the luxurious design and the grotesque mutations of its inhabitants creates an unsettling atmosphere that reinforces the story’s themes. These design choices are not accidental; they operate both on a conscious and subconscious level, guiding players to understand the ideology and downfall of Rapture’s society without overt exposition.

Despite these innovations, however, most of these games still relied heavily on explicit narrative cues—spoken or written—to deliver their stories. It was not until a later paradigm shift, pioneered by titles like *Dark Souls*, that developers would explore a more radical, fully indirect form of environmental storytelling.

2.4 The Soulslike revolution

Dark Souls was released by FromSoftware in 2011 and has since reshaped the landscape of narrative design. Not only are there no difficulty settings, but the instructions for the player are vague, the world is unfriendly and death awaits at every corner. The player character is the Chosen Undead – they are already dead and can

resurrect after dying. If the previously mentioned games still tried to be relatively friendly to the player, *Dark Souls* makes no such effort. One could describe *Dark Souls* as a game which requires great investment from the player, but offers even greater rewards. This philosophy extends to its storytelling.

The story of *Dark Souls* is not mainly conveyed through dialog but environment and the few cutscenes that exist usually focus on the surroundings as well (for example, they show a mechanism that opens a bridge). Deceptively, if the player simply follows the surface-level progression, they will receive a story—but not the deeper, hidden narrative. Only through careful analysis and connecting the dots can the player uncover the real story behind *Dark Souls*.

This approach aligns well with the concept of *narrative goals* as introduced by Cardona-Rivera et al. [12]. In their model, gameplay mechanics (ludological goals) are interpreted by the player through multimodal feedback, forming *narrative goals*—personal understandings of what the player’s actions mean within the game world. In *Dark Souls*, the sparse feedback and indirect exposition force the player to construct their own narrative goals, such as uncovering the secrets of Lordran or interpreting the motives of the Serpents. These goals are not explicitly instructed by the game but emerge through interpretation, driven by feedback in the form of item descriptions, spatial clues, and cryptic NPCs.

There are several instances of this deception being quite explicit in the game—one such instance is the Goddess Gwynevere, which really is just a projection from another character. Another instance is the serpents—after the player completes a milestone a seemingly friendly snake appears and offers his services. But the game features another serpent, one who can reveal the hidden truths and offer a darker, subversive path. All of these elements have one thing in common—they require explicit player action to be revealed, often against the player’s instincts.

2.4.1 Miyazaki’s narrative philosophy

Hidetaka Miyazaki is the creator of *Dark Souls* and is often referred to as an *auteur*—a term describing a director who strongly enforces his vision in regard to all aspects of his art. When asked about the very indirect storytelling in *Dark Souls*, Miyazaki provided an insight into his childhood. In an interview with the *Guardian*, Miyazaki explained that “As a child, I couldn’t always understand everything I was reading... I would use the pictures to fill in the story” [13]. In the *Dark Souls* series, the player is similarly required to use the visual imagery to fill in the blanks. It is worth noting, however, that while narrative in the games is very indirect, it is still somewhat verbal, as various objects have textual descriptions. One would be tempted to call them flavor text, but such characterization would not do justice to those descriptions, as unlike in various other games in which such descriptions serve as background or contribute to the atmosphere, in *Dark Souls* they are the main device through which the player learns about the world. Technically, there is dialog and in the later chapters we will explore how this dialog is nonetheless indirect and deceptive at best. But it is important to keep in mind that to understand even the basic story the player cannot rely solely on verbal narration (**Figure 3**).

2.4.2 The player as an archivist

The weight of discovery in *Dark Souls* falls squarely on the player, who must act as both archivist and archaeologist—piecing together meaning from scattered remnants. The lore of the game even encourages such speculation, since the world of Lordran,



Figure 3.
“*Dark Souls*” by Józef Cyran, CCo.

where the game takes place, went through cataclysms that convoluted the timeline of the game. A friendly NPC called Solaire acknowledges this explicitly, by saying “The flow of time itself is convoluted; with heroes centuries old phasing in and out” [14]. If the flow of time is convoluted and the story is not told directly, the player is necessarily lost—and that is a very conscious decision by the company *From Software*. The player must find their own meaning within the world.

In doing so, *Dark Souls* redefined what it means for a game to “tell a story”—not through exposition, but through implication, omission, and the silent invitation to interpret. As we shall see in the final section, this paradigm shift has since inspired a wave of modern games that blend both indirect and direct narrative techniques (Table 1).

2.5 A living technique: Environmental storytelling in modern games

Following the influence of *Dark Souls*, environmental storytelling has transitioned from a niche experiment to a standard design approach used across a wide range of genres. Modern titles increasingly incorporate indirect storytelling not as a novelty, but as an integrated narrative structure. This technique has been adapted to suit puzzle games, science fiction, and minimalist dramas, extending beyond the fantasy genre it originated from.

A useful model for understanding how narrative emerges from gameplay is the GFI framework, introduced by Cardona-Rivera, Zagal, and Debus. GFI stands for Goals, Feedback, Interpretation, and it focuses on how players interpret gameplay objectives as part of a story. In this model, the game provides players with goals (what to do), feedback (how the game responds to their actions), and from these, players form their own interpretations—which become their personal narrative understanding [15]. This allows for storytelling that arises not from explicit exposition, but from the player’s engagement with the system itself.

Her Story—a small indie game released in 2015—proves that this player engagement can form the sole gameplay mechanic of a videogame. Though the game

Game	Indexical Storytelling	Symbolic Storytelling	Geography (Eastern/Western)	Pacing	Silent Protagonist	Release Date
Project Chaser	Broken walls, graffiti, Tube Room, Cube guardian	Nazi-inspired banners without swastika	Western (Sweden)	Fast-paced chase sequences	Yes	2024
Fallout 3	Crater in Megaton after detonation	Radiation as metaphor for destruction/trauma	Western (USA)	Variable (exploration + combat)	No	2008
Wolfenstein (series)	War-torn environments, ruins	Nazi imagery (modified in some regions)	Western (various)	Action-focused	No	1981–present
Dark Souls	Different architectural styles on the same building	Fire as cyclical rebirth	Eastern (Japan)	Deliberate, methodical	Yes	2011
Half-Life 2	Civil Protection checkpoints, abandoned buildings, alien structures integrated into cities	Combine insignia	Western (USA)	Story-driven action	Yes	2004
Myst	Abandoned worlds, artifacts, environmental puzzles	Linking books as symbol of knowledge/control	Western (USA)	Slow-paced exploration	Yes	1993

Table 1.
A comparison of selected games.

contains no physical environment in the traditional sense, its interface and database structure function as a form of narrative space. The player's primary activity is reconstructing the timeline of events by watching video fragments in non-linear order. In doing so, *Her Story* isolates and amplifies a core feature of environmental storytelling: requiring the player to discover the plot by actively assembling dispersed narrative clues. If uncovering the story was an additional reward in *Dark Souls*, it is the main and only motivation in *Her Story*.

Other titles have continued to blend indirect narrative with more traditional structures. *Lies of P* (2023) builds on the Soulslike format, combining implicit lore and visual motifs with a more overt plot delivered through cutscenes and character dialog. *Outer Wilds* (2019) uses environmental storytelling to frame scientific exploration, encouraging the player to interpret clues embedded in planetary ruins and alien technologies.

These examples indicate that environmental storytelling is no longer tied to a specific esthetic or difficulty model. It has become a flexible narrative tool—adaptable to various genres and capable of supporting both linear and fragmented plots. This adaptability is further evidenced by recent narrative systems research that seeks to merge player freedom with narrative coherence. Lima et al. introduce a system where character goals and plans dynamically evolve in a simulated world but are guided by predefined narrative structures—such as the Hero's Journey or Grail Hero arc—to preserve emotional impact and dramatic shape. Their system even detects when emergent gameplay threatens to bypass a crucial narrative beat and introduces corrective goals or world changes to steer the story back on track [15].

Recent research also suggests that the design of the game environment not only conveys narrative meaning but actively shapes player behavior, even when players hold contradictory real-world values. For instance, a 2024 study on *Animal Crossing: New Horizons* found that players with strong pro-environmental values sometimes acted against those values in-game if the mechanics rewarded extractive behaviors such as chopping trees or selling animals. This underscores how game environments—through what they incentivize or obscure—become active participants in shaping the narrative arc and ethical logic of the player's experience [16].

3. The silent protagonist as a tool of environmental storytelling

The term “Silent Protagonist” refers to a playable character who does not speak at any point during the game's runtime. If understood strictly, many if not most protagonists in video games are silent—Pacman from the game *Pacman* does not speak, similarly the frog from *Frogger* remains mute. However, we shall not analyze these examples, because while the player characters stay silent, there is little to no story in those games, and certainly no complex narratives. Thus, the question “how does the Silent Protagonist affect storytelling” is void in regards to such simple arcade games.

Instead, we shall take a look at games that have deep, defined narrative, and we shall examine how those characters allow for smooth storytelling. One such game, already mentioned is *Half Life* and its successor *Half Life 2*. The game's main character Gordon Freeman is worthy of particular analysis, because he has a well-defined personality. The first introduction to Gordon Freeman is in first *Half Life* game. Gordon starts in a lab and receives instructions from other scientists to conduct an experiment. The experiment goes wrong, and a portal from another dimensions allows aliens to invade earth. Initially, Gordon simply tries to get out of the laboratory,

but guided by the NPCs he encounters, he manages to send a missile and destroy the alien portal. The game ends, but a short cutscene involving a mysterious man, often referred to as the G-Man, implies that this is not the end. Players had to wait 6 years to discover that indeed this was just the beginning. The aliens—it turns out—were merely tools and victims in the machine of the insidious Combine—a villain so immaterial and abstract that it could be named a silent antagonist. The Combine ultimately is an organization, and Gordon Freeman emerges as the central figure in humanity's resistance against the Combine. While in the first games the NPCs were moderately developed, the characters Gordon encounters in *Half Life 2* are much more refined and the player interacts with them more often. Yet, in all such interactions, Gordon remains silent. The characters sometimes acknowledge this, which implies that Gordon is silent both in-game and out of game and that is made clear. As we shall see, it is important to express to the player whether a character does not really speak (like Gordon Freeman) or whether the replies of the protagonist are simply not presented to the player but implied.

Gordon Freeman is not the only Silent Protagonist that Valve (the studio behind *Half Life 2*) introduced. In 2007, Valve released *Portal*, a puzzle game in which the players take control of Chell. Much like Gordon, Chell does not utter a word throughout the whole game. And yet, despite this, the player infers distinct character traits, relational dynamics, and motivations—not in spite of the silence, but because of how the world responds to it. What is different between the two games is how other characters perceive the protagonist. Whereas Gordon's gender did not play a significant role in the story, Chell's womanhood does. She is constantly demeaned and insulted by GLaDOS – a rogue AI that incidentally also has the personality of a woman and is the main villain of *Portal*. This contrasts with the praise and hope NPCs place in Gordon. Furthermore, the actions Chell takes are different from those of Freeman, whereas Freeman often seeks danger (not for the sake of danger but to stop the enemy), Chell's goals are to survive and resist. *Portal* is unique in that Chell is also the only human in the game, so her reluctance to speak may be less of a character trait like with Gordon and more of a response to her situation. Thus the player naturally learns that Chell is a resilient, determined and very lonely, whereas Gordon develops complex relationships with other humans and fights for humanity. The determination is similar but the motivations are vastly different, and this is all conveyed without the protagonists speaking.

Games such as *Half Life* or *Portal* definitely succeeded in their implementation of the Silent Protagonist, but this cannot be said about all games that attempted it. The *Far Cry* series, starting with *Far Cry* released in 2004 is a series of action shooters containing thoughtful narrative. These narratives often offer a glimpse into troubled, isolated societies and the *Far Cry* series has been noted for its villains, as they go beyond the traditional villain tropes. Connor O'Keefe mentions Joseph Seed (*Far Cry 5*), Pagan Min (*Far Cry 4*), and Vaas Montenegro (*Far Cry 3*) as some of the most memorable video game villains of all time [17]. The series protagonists have generally also been received well, but the protagonist of *Far Cry 5* has been strongly criticized and specifically for being silent.

The Junior Deputy or Rook, as he is referred to throughout the game, serves as the protagonist of *Far Cry 5* and he stays silent. The story follows the classic *far cry* narrative of being isolated in a world filled with violent factions, each with their ideology and goals. The villains in *Far Cry 5* are well fleshed out—they are inspired by American militias and radical religious groups and when the Junior Deputy is captured by them, they happily reveal their complex motivations. But the player

characters silence feels already awkward, as the player is not sure what the Rook thinks of these ideologies. Is he completely opposed? Is there a moment when he considers that they may be right (it is worth noting that in a twisted way the villains of this game *are* correct, the apocalypse *is* coming)? Sadly, the player never finds the answer to this question and the environmental storytelling in this game, while present, never provides any resolution. As Cameron Kunzelman notes, there is no counter-force to the villains' long monologs [18].

What feels even more unsettling are the Junior Deputy's reactions to his allies. Like Gordon Freeman, he does not answer them, but this is not clearly indicated and may be confusing for the player. Kunzelman also feels that the allies in Far Cry 5 do not offer a counter-ideology to the villains; this is different from Half Life 2, where Gordon's allies provided a strong message of hope and provided insightful comments about the events happening. Finally, the reason why Rook is silent, while reasonable in itself (he is mute), is not indicated anywhere in the game and this fact, important to the character, is only revealed in Far Cry: New Dawn, a spinoff game in which Rook is one of the NPCs. Thus, against the intentions of the developers, players feel emotionally disconnected from the character they play, it is merely an avatar to play with, but not a fleshed out person.

Comparing Gordon Freeman and the Junior Deputy reveals that a silent protagonist's success hinges on three key elements: their implied attitude, how other characters narrate their actions, and the clarity of the reason behind their silence. These elements are handled with care in Freeman's case, but are muddled or missing in Rook's.

4. Community engagement and the shared imagination

"Nature abhors a vacuum"—when the creators withhold meaning, the community rushes to supply it. *From Software*, notable for deliberately concealing most of the lore of their video games, leaves room for the players to make their own stories. Initially, these stories are formed in the mind of the players, but unsurprisingly many players are eager to share them online, often through YouTube videos. Such players are often referred to as lore Hunters or lore Scholars and often form micro-communities where players discuss their own interpretations. These interpretations can vary not just in their content but also in the methodologies employed. As we will show below, several real world analytical frameworks have been adapted to serve in the analysis of diegetic elements.

4.1 VaatiVidya and the canonical compilation

If one asks a Dark Souls or Elden Ring player about their understanding of the lore, they are likely to receive an answer that references VaatiVidya—one of the most popular lore scholars who offers streamlined, high-quality miniseries that touch on *From Software* Game's narratives and especially the character stories. VaatiVidyas approach can be characterized as relatively straightforward and literal. He is particularly skilled at framing and connecting the NPC stories in his miniseries, for example, the Prepare to Cry or Shadows Cry Twice playlists. VaatiVidya's videos/productions often feature machinima-style cutscenes and fan-made illustrations—often depicting characters who are never visually shown in the game but are only mentioned in passing.

While VaatiVidya's straightforward approach is attractive to many players, particularly those who enjoy the cinematic videos, it has also attracted controversy and even plagiarism concerns, as he was accused of relying on the source material of another lore scholar named RedGrave, but presenting it in an easier to digest form [19]. This highlights a deeper point: that in many ways the lore scholarship within *From Software's* community mirrors the structure and tensions of traditional academia.

4.2 Lore scholarship frameworks: Two interpretive approaches

4.2.1 Tarnished archaeologist: Lore as archaeological stratigraphy

Tarnished Archaeologist, founded in 2022, quickly rose to prominence in the *Sous-like* (*Elden Ring*, *Bloodborne*, *Dark Souls*) community, because of its unique approach to analyzing *From Software* Game's lore [20]. The channel looks at the world of *Elden Ring*, for example, as the result of hundreds and possibly thousands of years of history. The validity of such a perspective heavily relies on the fact that *From Software* has a habit of creating a robust and precise history and then removing large parts leaving only remnants of the past in the form of ruins, vague references (sometimes these references are intentionally wrong, as they reflect the limited knowledge the characters have of the world they live in) and iconography. Tarnished Archaeologist, as the name suggests, attempts to uncover the game's lore in the same way a real archaeologist attempts to uncover the history of Earth. Furthermore, his methodology often refers to real-world architectural studies (**Figure 4**).

He adopts the concept of *social stratigraphy*, originally introduced by archaeologists such as McAnany and Hodder to analyze the different layers existing in architecture as social records. McAnany and Hodder point out that stratigraphic sequences require the archaeologist to possess a certain understanding of the social practices of the societies they study, and enable them to use this knowledge in combination with archaeological records, to infer about the events and attitudes of the ancient communities. Such sequences often include purposeful forgetting and renewing of aspects from the preceding layers [21]. Again, for this approach to be valid, the game developers had to create the layers so that they follow a (hidden from the player) sequence. *From Software* definitely does include such stratigraphic elements, for example, some reliefs are hidden behind newer statues. Tarnished Archaeologist points out that this is intentional and conveys that whoever put the newer statues, likely did not want his contemporaries to see the relief behind. Another case is through analyzing different styles – just as the use of arches, for example, can help archaeologists roughly date a structure, the use of different architectural styles in *Elden Ring* gives the players a clue that a certain building has been used by different civilizations, one preceding the other (**Figure 5**).

Tarnished Archeologist also educates the public by comparing some of the iconography to the iconography in the real world, he compares the statue of a man lying flat in an evocative pose to the *pieta* sculptures, which depict Jesus Christ after his death (the most famous of these is of course Michael Angelo's *Pieta*, but other examples exist as well). In some cases, the religious connotations go even deeper, one such case presented in *Bloodborne* is a relief showing a woman looking high in the sky and holding her stomach. This is another reference to Christianity, specifically the *Annunciation to Mary*, in this case, he convincingly argues conclusion that in both cases it refers to divine conception – although twisted in the *Bloodborne's* case. And



Figure 4.
 “Elden Ring” by Józef Cyran, CCo.



Figure 5.
 “BloodBorne” by Clinton Crumpler, CC BY 2.0.

regarding Elden Ring, he compares the burial practice in the fictional place of Farum Azula (from Elden Ring) with the real world Varna Excavations.

Architecture and art are not the only way religious themes are incorporated into the world of Elden Ring. Tarnished Archaeologist makes effort to place the inferred (from reliefs and tablets) history of Elden Ring in the context of the myths and religious parables of Earth. He compares the “Elden John” (a term created by the community to refer to an anonymous figure from Elden Ring’s statues) to biblical patriarchs such as Moses and he likewise draws a comparison between a catastrophic even in Elden Ring’s history to the Great Flood myth that is prevalent in many cultures.

4.2.2 Charred thermos: Bloodborne as a poem on dissection

Bloodborne, a 2015 release by *From Software* is definitely inspired by Lovecraft and the themes of Great Old Ones (or as Bloodborne calls them Great Ones) form the main source of narration. However, Bloodborne can be viewed in a different, less literal way. Such a perspective is brought by Charred Thermos—another lore scholar who is keen to interpret *From Software*’s games [22].

Charred Thermos does not deny that there is a literal story separate from his interpretation, but he claims that there is an additional layer which many players missed—the story of Bloodborne is a parable for the history of dissection in the Edinburgh Medical School in the 17th, 18th and 19th centuries. While this claim may seem far-fetched, it is surprisingly well supported by the arguments that Charred Thermos puts forth. Perhaps the strongest reference to Edinburgh’s history is the presence of caged graves in the city of Yharnam where most of Bloodborne’s events take place. The strength of this argument lies in the fact that those graves are difficult to explain purely within the context of Bloodborne—there is no apparent reason why the inhabitants of Yharnam should cover their graves. Grave excavation *is* present in the game, but it is conducted only on the graves of the Great Ones (the lovecraftian divine creatures) and the human graves remain undisturbed. But we can find such caged graves in Edinburgh and the reason is quite grim—at the time when early modern medicine was starting to take foundation, the procurement of bodies was a difficult task, made more challenging by unclear and mixed attitudes of the local authorities. Thus, a new profession was found, body snatchers (also called resurrectionists) were people who illicitly dug up the graves of recently deceased individuals and sold them to the scientists employed in Edinburgh Medical School. Thus, the inhabitants of the city would often put a cage on the graves of their relatives to avoid their disturbance. Body snatchers themselves are another clue to Charred Thermos’ thesis—the Graveguard set (of clothes) is an item that does not resemble guard armor or clothes but is very reminiscent of the typical body snatcher’s depictions.

Charred Thermos argues further that the Bloodborne’s Laurence character is inspired by an author living in 1768 named Laurence Sterne. Laurence was a famous writer and was buried after death, but sometime after his death, rumors emerged that his body was recovered and sold to be used in an anatomical dissection. Allegedly, one of the students even recognized him during the dissection, and his skull was returned to his grave, albeit without the body. This mirrors the game’s Laurence, whose body was recovered and displayed on a dissection table. Finding his skull is even one of the game’s quests.

All of these comparisons (among others) point to the conclusion that *From Software* has deliberately made references to the history of dissection in Great Britain. The environmental storytelling that *From Software* has chosen creates a space for the inclusion of such references and encourages the players to seek them. Even if they were included in the traditional style of narrative, players may be less inclined to engage in that level of speculation, as the story would explicitly provide the answers, and even less likely to view it in metaphorical terms.

5. Empirical insights and cognitive background

Narrative Transportation Theory, as introduced by Green and Brock [23], describes a state in which an audience becomes mentally, emotionally, and imaginatively

absorbed into a story world. In this state, attention is highly focused, emotional engagement is heightened, and vivid mental imagery is formed, often accompanied by a temporary detachment from the real world. While initially developed in the context of literature and film, the concept has clear relevance to video games. Games that rely on environmental storytelling can produce transportation without requiring extended dialog or scripted exposition. Here, immersion emerges from the act of navigating, interpreting, and emotionally responding to the designed space itself.

To study how player understanding is formed through observing the environment, a 2024 study was conducted at Uppsala University. The study asked the following question: “how can we tell narrative through environments in a fast-paced 3D platforming game without stopping the player?” [24]. For the purposes of the study, a video game called *Project Chaser* was developed in four iterations. After each iteration, the test participants (players) were asked questions about their understanding of the game’s story, specifically the six elements: Location (a dystopian brutalist architecture) the Government (a totalitarian government that consists of two social classes), the Guardian (the antagonist of the game, chasing the player), the Cube (a power source) and finally the Player and the Society of the world presented. The game contained no cutscenes or dialog and thus the total weight of the narrative was put on the environment with the additional constraint—the gameplay pacing did not allow the player to inspect the environment for a long time, as the Guardian was supposed to constantly chase the player throughout the level. The pacing constraint was useful in examining the story naturally formed through *narrative transportation*, as opposed to in-depth lore scholarship discussed in Section 4.

5.1 Indexical storytelling

A particular type of environmental storytelling has been recognized by Clara Fernández-Vara and termed *Indexical Storytelling*. This storytelling focuses on indices/indications. Signs in language can be broadly categorized into three types: icons, symbols and indices. Icons signify an idea through similarity (an icon of tree representing a tree), symbols have abstract meaning often separate from their form or shape and indices are physically connected to their meaning. Fernández-Vara gives smoke as an indication of fire as an example of an index [25].

In *Project Chaser*, indices were added in the second and following iterations of the game, while the first iteration consisted mostly of icons and the environment itself. An example of index which was found to be particularly effective was broken walls and graffiti which were found to significantly improve the participant’s understanding of a past conflict. Another type of index was Tube Room—a chamber supposed to convey that the Guardian is an artificial, built construct.

Across the four iterations, the inclusion and refinement of such indices measurably improved player comprehension scores. Importantly, the removal—intentional or accidental—of these indices had the opposite effect. When a bug prevented the “guardian” enemy from visibly orbiting the Cube, players were far less likely to understand its protective role. This provides rare empirical confirmation that environmental cues of this kind are not merely decorative; they are functional elements in the communication of narrative.

5.2 Cultural interpretation

While transportation and indexical storytelling can be powerful, they are not universally interpreted in the same way—interpretation may be strongly shaped by

player's cultural background. A notable example of such geographically diverging reception is the release of the *Fallout 3* game. In the Japanese version, the option to detonate the city of Megaton—a decision which transforms the settlement into a radioactive crater—is removed. This is despite the fact, that quest never explicitly mentions Hiroshima or Nagasaki. The mere combination of radiation, destroyed structures and crater imagery evoked unpleasant associations for the Japanese public.

Another example, regarding a Western audience can be found in the releases of the *Wolfenstein* game. The swastikas and Nazi imagery were replaced by less controversial, although somewhat confusing alternative symbols. *Project Chaser*, developed in Sweden, intentionally modeled its governmental banners on Nazi esthetics—without using the swastika itself—to evoke associations with authoritarianism and ideological control. In regions unfamiliar with such symbolism, the banners might be read simply as abstract design elements, losing much of their narrative charge. It should be noted, however, that in Sweden the association has been quite effective in increasing the participant's understanding of the government as totalitarian.

An additional aspect to note is that *Fallout's 3* crater imagery is an example of an index (the crater is physically connected to the preceding explosion), while the connection of certain flag designs to totalitarianism is symbolic.

Taken together, these observations illustrate that environmental storytelling operates at the intersection of design, cognition, and cultural context. Narrative transportation theory shows that a connection to the story world can form naturally even during fast-paced gameplay. *Project Chaser* demonstrates that indexical and symbolic storytelling can measurably improve player comprehension, while cultural background shapes whether the associations formed achieve their intended effect. The crater in *Fallout 3* serves as an example of an index, while totalitarian flag designs in *Project Chaser* function symbolically. Developers should, therefore, evaluate the cultural connotations of their designs, especially when relying solely on these elements to convey the narrative.

6. Conclusions

Environmental storytelling is a powerful narrative framework that avoids traditional tools such as cutscenes and dialog, instead focusing on the design of the game world itself—inviting players to interpret and assemble meaning from what they observe. From *Myst* and *Half-Life* to *Elden Ring* and beyond, developers have used this approach to craft immersive worlds that not only engage players, but also inspire them to construct their own narratives. These emergent narratives often involve not just the world itself, but also its characters—especially those who do not speak, either because they are long dead by the time of the game's events, or because they are Silent Protagonists.

Ironically, such silent protagonists can be effective narrative tools—but only if their silence is meaningfully justified. Developers must provide context through the environment and supporting characters to avoid alienation or confusion, and to give the protagonist a sense of presence and personality. Evaluating the symbols and indices present in the environment through the lens of cultural context is paramount in ensuring that the intended interpretations are more likely to be formed. Richly crafted environments become fertile ground for player speculation, allowing players to re-contextualize the story not only in literal terms, but also in metaphorical or poetic dimensions. Poetry is often said to “say much with few words”—and environmental

storytelling aspires to do the same, presenting layered narratives through atmosphere, space, and symbol, rather than exposition.

Conflict of interest

The authors declare no conflict of interest.

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