

Storytelling in Video Games: The Narrative Models and How They Contribute to Different Games

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Abstract. The digital development has broken the relatively independent state of traditional media, gradually placing different media into the same communication field, causing a wave of media integration and penetration, forming a cross media narrative landscape. Among them, electronic games benefit from the development of technology, possess strong inclusiveness and plasticity, and have diverse integrated interactive practices. With the increasing influence of electronic games in society, more and more people are paying attention to the narrative ability of electronic games. Based on different narrative techniques and forms of expression, electronic games have spawned many new types. This article mainly studies narrative theory and popular patterns in electronic games. From the initial concepts of hypertext and online text to the thriving gaming industry today, the development of storytelling has greatly promoted the growth of this industry. After the debate between narratology and linguistics, this article also provides a more detailed analysis of the four mainstream narrative modes: embedding, emergence, linear, and non-linear. This also includes more specific case studies on the series games Rusty Lake and Minecraft. This article integrates elements from different periods, providing direction for future research.

Keywords: Video games, narrative theory, Rusty Lake, Minecraft.

1. Introduction

Video games have gradually received attention around the world at all ages with the rapid development of the internet. The gaming industry has expanded throughout the years and forms a huge market, bringing significant economic benefits. On the other hand, games have also been an important way of cultural output and exchange. Due to the unique presentation forms and the ability to develop limitless iterations with technological advancements, they're often called the "Ninth Art". Therefore, games have attracted widespread attention and research interest in academia.

Hypertext is a concept raised publicly by American scholar Theodor Nelson in 1965, at the Association for Computing Machinery (ACM). It refers to a network structure of texts, which is non-linear, interactive, contains multiple endings and uses procedural narrative. Hypertext is one of the basic elements for game narration, which is one of the reasons why games can somehow be considered as literal art. The form of video games enhances the nonlinearity and intertextuality of hypertext, better integrating narrative with reading, creation and reception [1]. Similar concept is discussed by Espen Aarseth in 1997, when he introduced the concept of cybertext, and he thinks traditional narrative theories should not be directly used to analyze games. He also mentioned that cybertext is a type of textual form that requires user input as ergodic engagement to give different outputs. The improvement of cybertext from hypertext is that cybertext emphasizes the existing system rules and depends more on players' actions and choices.

Around 1990 to 2000, the Ludology-Narratology debate happened in the field of game studies, which greatly helped in-depth investigation and further real-world application about game narration. It discussed whether games are about gameplay or storytelling. Narratologists think games can be analyzed by existing narrative theories about films, dramas, and literature. Ludologists think games are interactive systems and gameplay is the core instead of stories, so they believe that the term narrative is not appropriate to describe the stories in computer games [2].

After 2000, some scholars arose post-debate perspectives about the combination of gameplay and storytelling. Henry Jenkins said that the role of narrative in games is multi-layered, and proposed the

difference between embedded and emergent narrative: pre-installed stories in games and stories being created by players during the playing experience [3].

The academia has a variety of ways to divide narration into different categories. Beside embedded and emergent narrative in games, Bordwell and Thompson introduced linear and non-linear narrative models [4]. Games with linear narration usually have a more complex story plot and have more limitations on players' actions; those with non-linear narration are more likely to be open world games where players' choices affect the order of interactions with non-player characters (NPC) and order of events. David Herman proposed the theory about transparent, semi-transparent and opaque narrative [5]. Transparent narrative is what designers wrote all the events in the story, and players are more like the audiences in the cinema. Semi-transparent narrative is more interactive, containing more conversations with NPC and choices in the storyline. Opaque narrative mostly depends on the player's actions and can lead to many different endings. Other game narratives include procedural narrative, where players' decisions indirectly affect the order or type of events that happen, like some rogue games.

Those standards of classification evolved alongside the expansion of the game industry. While they overlap in some areas, each classification also has distinct differences. Together they support the development of games and promote the prosperity of the industry. Game narration's core features include interaction, non-linear narrative structure and multi-media representation, which can remarkably increase players' immersive gaming experience, provide crucial theoretical basis for the design of narration in games [4]. This paper aims to discuss the components and types of game narratives. By examining key elements such as interactivity, branching storylines, and procedural generation, this study seeks to offer insights into the dynamic and evolving landscape of game narration, providing a deeper understanding of how these narrative forms enhance the player's engagement and the overall gaming experience.

2. A Deeper Investigation Into The Classification Of Narrative Models

Aarseth constructed a variable model about game narratives, with 4 ontic levels of world, objects, agents and events [6]. To a broader scale, this section aims to discuss four mainstream narrative models, each with examples and analysis about its relative merits. Games discussed in this section don't include gameplay-driven games like Tower Defense games (TD), First-Person Shooter (FPS) and Multiple Online Battle Arena (MOBA), as these game goals are to improve operative skills or compete with other players. The embedded and emergent narrative is suggested by Jenkins (Jenkins 2004), while the linear and non-linear narrative is the most fundamental theory of narrative models.

2.1. Embedded Narrative and Emergent Narratives

Embedded narrative is where game designers have a pre-set storyline and players' choices have little impact on the main stories [3]. Not limited to "what objectively happened," the layered structure blends different possible stories to form a new [7]. This narrative makes the storytelling consistent, and different players with different choices would be led to the same ending. Therefore, the designers have most of the freedom in making the story, which means emotions and the pattern of plots can be precisely controlled. Embedded narrative is the most efficient type of narrative, which provides affectional communication between the players and the designers. What's more, as a classical choice of narrative, it has less complexity for the developers since they only need to write one script, just like making a film or writing a novel. However, players have correspondingly less freedom to create the story, which increases the risk of getting bored of the story plots. And if the developers want to raise resonance, it largely depends on the context and cultural background of players.

Role Play Game (RPG) games and adventure games are good representations of embedded narrative. For example, Assassin's Creed: Odyssey as an Action RPG has the core theme of ancient Greek history and philosophy, with a fixed main storyline and final ending. Florence, a game

developed by the team who made Monument Valley, also sets a complete storyline and players act as companions of the main character, going through the casual daily life of the girl.

On the other hand, emergent narrative emphasizes the player's choices, and they have a large effect on the development of the game [8]. Compared with embedded narrative, emergent narrative is much more immersive for the players, where different players might see completely different parts of the story and endings. As a result, players can play the game for multiple times and gain brand new experiences every time. It supports players to use their imagination and creativity in developing the story to the maximum extent. Nonetheless, developers need to spend much more time and effort in making the game since at least 3 different storylines need to be written. So game designers need to give up on the consistency of the game. The complete story is cut into chunks of plot, so when switching from one to another, there might be a lack of coherence. Too much freedom would also confuse the players, as few instructions are given, they would get lost in the stories and don't know what to do. To solve this problem, many open world games provide players with a set of main quests and different side or even hidden quests.

Most simulation games use emergent narrative. Stardew Valley, The Sims 4, and Animal Crossing: New Horizons are all emergent stories, which create unique and personal game experience for players with a dynamic system. Sandbox games also use emergent narratives a lot, like Don't Starve, where different choices of resources, worlds, or monsters create different stories.

2.2. Linear and Non-linear Narratives

Linear narrative usually has a straightforward story structure and time order, which have some overlaps with embedded narrative [6]. It's the most ordinary and commonly used narrative model since it tells the story clearly and conforms to players' intuitions. Linear narratives encourage players to focus on the story itself without making too many decisions, which is suitable for players who prefer "reading" or "seeing" a game. They also provide very immersive experiences as the plot develops according to the procedure. But games with linear narratives lack complexity or details in the story, and players are likely to play it only once.

Games that depend on the width and depth of the story prefer to use linear narratives, for clarity and integrity of the plot. The Last of Us is a great illustration of linear narrative, and many players provide the feedback of surprising immersion in storytelling.

Non-linear narrative is a combination of embedded narratives and emergent narrative. Players can choose and decide the order of events and lead to different endings. For players who want to collect the achievements and endings, they have plenty of freedom to explore, which adds playability. But it sets barriers for players in understanding the story at the same time, since players might need to play more than once to review all the details and reorganize the story by themselves. It's often assumed as one of the unique characteristics of computer games [9].

Games which pursue more complex and unexpected narrative effect would use non-linear narrative, like Detroit: Become Human and The Witcher 3: Wild Hunt. They mostly come in large scales or series, forming their worldview.

3. Case Study on Serial Game Rusty Lake

The Rusty Lake trilogy (Roots, Paradise and Hotel) blends elements of non-linear and embedded narrative to construct a unique and grand world. With symbolism and philosophy, the game reflects on the theme of memories, religions, and reincarnations. As a puzzle game, players can set their goal to solve the mysteries or collect achievements and reach them without knowing any specific story plots. But if players have the patience and time to dig deeper and put fragments together, a twisted net of sinuousness is revealed. This is a story about two families across three centuries.

3.1. Non-linear Narrative and Flashbacks

Non-linear narrative is one of the major features in the Rusty Lake trilogy, especially in Rusty Lake: Roots. The story started in the spring of 1860, when James came to Rusty Lake for his uncle's heritage. The whole game contains around 20 levels, while each level is a piece of a family member's life. They don't appear according to time order, as players can choose what levels to play first. But the stories don't depend on players' choices, which makes it an embedded narrative. Players experience 9 main family members' stories in flashback, from birth to death. The choice of non-linear and flashback narrative challenges the traditional narrative structure, while also enabling the players to have more immersive experience when solving the puzzles.

It's worth mentioning that the development of the story is visually represented with a tree. Each branch refers to an event, and players gain access to the next levels after solving the previous level. This breaks the linear fluxion of time, which supported the final theme as well as shapes the characters. Players can summarize the complete story after experiencing multiple perspectives, which provides the opportunity to think about the deep connection between the families.

3.2. Embedded Narrative and Fragmented Representation

The other two games in the trilogy focus more on embedded narrative, and there is a correct order of solving the game. In Rusty Lake: Paradise, there's a preset order to go through the plot, from "water to blood" to "the death of the firstborn", ten disasters in total. Jacob, the oldest son of the family, came back to Rusty Lake for his mother's letter. But it was a family conspiracy where they planned to sacrifice Jacob to be immortal. Jacob's mom sacrificed instead, but her soul stayed and cursed the greedy family. Players experience the ten disasters in the perspective of Jacob. Emotions are expressed through spatial metaphors, linking abstract things with specific spatial types [10]. So one innovative design of the game is that the ten disasters, or ten levels, are all set in the same scene. The repetition of scenes deepens the plot layer by layer until the final theme is revealed. By changing the objects in the scene, the game creates a sense of space and lets players feel more immersive. Each disaster pushes the development of the story and uncovers the history secrets of the Eilander family. Correspondingly, it's also related to one of the family members, so after the seemingly independent stories, players can conclude the beginning of the family history. The curses befall on the Eilander family, for their greed and selfishness in sacrificing the innocent.

In Rusty Lake: Hotel, the players can only achieve the ending if they kill the guests in the correct order. Hotel is the continuation of Paradise, where Jacob avenged for his mom and himself. Compared to Paradise, Hotel doesn't limit the story in one place, instead it sets a scene and lets players go through the "rooms" in it. By visualizing the levels of the game into rooms in a hotel, Hotel provides an awesome example of spatial narrative.

3.3. Repetition of Lines and Symbolic Clue Design

The repetition of lines is another outstanding feature of the game. The line "The past is never dead, it's not even past" went through the whole set of games in Rusty Lake, and it even extends to the Cube Escape series [11]. It's originally from Faulkner's Requiem for a Nun. As these lines repeat again and again, it creates a heavy and suspenseful atmosphere, which strikes a chord for the players. The theme of reincarnation is also supported, leaving enough space for the players to speculate.

What's more, the design of clues is full of symbols. The black and white cubes that appeared throughout the whole series are representations of memories, either corrupted or meritorious. They form a balance in between and support the theme of duality and moral ambiguity. In Samsara room, the player would experience 6 cycles of reincarnation in the order of human, fish, gecko, worm, shrimp, and bird. These symbolize the different stages of religious ceremony of reincarnation, encourage players to investigate deeper into the core of the story.

The repetition and use of symbols are the main rhetorical features of Rusty Lake's game narrative, which work with its non-linear and embedded structure to convey a sophisticated story about memories and destinies.

4. Case Study on Sandbox Game Minecraft

Minecraft is a worldwide popular sandbox game, with the core feature of openness, freedom, and creativity. These features not only make the game itself playable, but also attract and encourage the prosperous development of player-creations (also known as fanfics), which expands the gameplay one step further. It involves the players who value social or technique-competitive elements more important as well. By analyzing the narrative in both the original game and the player-created game mods, we can discuss its great contribution to the game industry.

4.1. Sandbox game and non-linear narrative

Sandbox game is a video game with the gameplay element that provides players a great degree of creativity to interact with, usually without any predetermined goal, or with a goal that the players set for themselves. For Minecraft, its most impressive feature is how much freedom is given to its players: the game hardly sets any goal for the players (the common assumed goal is to go to the hell map and defeat the ender dragon, but players can ignore it). This non-linear narrative design enables players to create all kinds of stories, by exploring the edgeless maps, building all styles of houses, cooperating with friends, or having adventures in mystery castles.

Sandbox games are often associated with the typical representation of “narrative dominated by players”, where the stories almost completely depend on players’ actions and choices. Minecraft doesn’t even have a preset beginning or ending, which provides the opportunity of creating unique stories with very different worldviews. Researchers can see wooden cabins surrounded by mushrooms and contemporary cities with a fully-developed transportation system in the same map. This leads to another key feature of Minecraft which is also something necessary for the success of the game: facticity. The designers did their best to mimic the physical properties of the actual items, and how precisely they manipulate the details of getting or manufacturing an object is unbelievable. For example, the distribution of minerals in Minecraft is designed based on reality: diamonds can be found below $y=16$, but are most common at $y=-59$; in real mining, diamonds can be found between 120-200km depths of ground. With 1643 items in the 1.20 version of Minecraft, players can do limitless actions to them. Unconditionally, these help players to get immersive playing experiences and support them with strong connections from real life. In such a free creative environment, the choice of narrative is given to the players, which is a brave and historically significant step on the history of games.

4.2. Emergent narrative, fan-created mods and player’s community

The reason why Minecraft is the world’s best-selling game must include its active player’s community, which is astonishingly wide in both the aspect of space and time. Since its publication in 2011, over 300 million copies have been sold. In 2024, it had around 204.33 million active players from all around the world. In these players’ communities, the major and most classic fan-creation is the mods, which expands the content of the game and largely extends the life circle.

Mods stands for “modifications”, which refers to custom-made changes or additions to the game created by players that alter its gameplay mechanics, visuals, or add entirely new content like items, mobs, or environments. With the fact that the vanilla game of Minecraft is developed with Java, a computer coding language with least compatibility issues, mods can easily suit into the game. Some very popular mods include Thaumcraft published by Azanor in 2011, followed by 6 updates, and The Man from The Fog by M_Productions with over 8,000,000 downloads. Thaumcraft players can use a wand to draw magic from objects in the form of Essentia, as well as casting spells and making golems. The Man from The Fog, on the other hand, focuses on horror story telling where new monster entities are added. These mods provide players a higher level to challenge in the game, and shed light on the innovation of technical skills and creative expressions. Academically, it’s commonly believed that mods are the bridge between the game and players, and it’s much more effective than any other approaches used during game production, with the help of player-driven content. With Henry Jenkins’

theory of participatory culture, players should not be only the consumer of the game content, but also the producer of it [12]. Minecraft presents an outstanding example of how the use of participatory culture helps to form community cultures.

Besides mods, Minecraft also leaves enough space for players to customize challenges and mission system. Players can create specific tasks, like the sky block challenge and speed run challenge, which ask players to develop on a floating island or achieve a certain goal within the shortest time. These non-official tasks add complexity to the gameplay, which is more competitive and cooperative.

This type of behavior, that rules and objects are set by players, is regard as self-expression, players can show personal ideas by designing or participating in the tasks, and receive sense of belonging and achievement by sharing and competing. This phenomenon coincides with the idea of co-creation suggested by American scholar Clay Shirky, where players gain new experience and knowledge from playing with others [13].

5. Conclusion

Overall, this paper revisited research about narrative theory in video games and explored some representative examples to gain a better understanding about how language structures support the construction of games. Based on 4 narrative models and 2 case studies, the elements that affect storytelling depth are investigated and explained. However, the analysis only touches the superficial part of academic research, and future research can dig deeper into more abstract concepts and language models.

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