

Analysis in mods: Evaluating game-changing mods

Pedro Arruda de Oliveira¹, Bruno Correia da Silva², André Rocha²

¹ Federal University of Ceará (UFC) – UFC Virtual Institute
Fortaleza – CE, Brazil.

²Federal Institute of Education, Science and Technology of Ceará (IFCE)
Maracanaú – CE, Brazil.

pedrooliveira2702@gmail.com, bruno.silva@ifce.edu.br

andre.2xro@gmail.com

Abstract. Introduction: *The use of game modifications (mods) has increasingly become an alternative for diversifying the core gameplay experience, enabling the incorporation of new complex narratives and expansions with extensive symbol usage. Objective:* *This study aims to analyze three mods of the game Doom, focusing on the practice of "game-changing mods" or "genre-bending mods". The goal is to examine the transformations these mods bring to the original design and the presence of narrative through environmental storytelling. Methodology or Steps:* *The analysis was conducted using semiotic methods, evaluating visual representations, abstract elements usage, player feedback, and incorporation of narrative through environment in the analyzed mods. Results:* *The three analyzed mods demonstrated significant modifications from the original Doom design. Transformations included changes in visual representations, innovative use of abstract elements, and impactful player feedback mechanisms. Additionally, an embedded narrative through environmental storytelling was observed in these mods. The results illustrate that "game-changing mods" and "genre-bending mods" not only significantly alter the core gameplay experience but also introduce new narrative elements through environmental means. These mods expand players' interaction capabilities within the game, offering a fresh perspective on the boundaries of creativity in digital game design.*

Keywords *game-changing mods, Semiotic analysis, Environmental Storytelling, mods, doom.*

1. Introduction

The practice of game modding is longstanding and encompasses various forms of intervention, ranging from the open-source release of "Spacewar!" and promotion of its variants to the lucrative world of arcade hardware modification boards [Champion 2024]. In essence, the goal of this practice is for players or communities to create modifications (mods) that alter, extend, or even redefine digital games and their experiences. The legality of such interventions in relation to certain companies has become a sensitive issue, leading to judicial cases [Kretzschmar e Stanfill 2019].

In other instances, some of these modifications have been highly successful and returned to the market as new games. Examples like Counter-Strike and DOTA emerged

from Half-Life¹ and Warcraft 3², respectively, and their successors—Counter-Strike 2 and Dota 2—have for years remained among the top-played games on Steam’s daily charts³. For the industry, observing these modifications and understanding their notoriety within communities can provide insights that enable investment in efforts to bring forth new games. This underscores how mods can evolve into powerful tools for interactive entertainment innovation. Suppose there are doubts about the sustainability of a game with such features. In that case, one needs only look at the business model proposition outlined by Poretski and Arazy [Poretski e Arazy 2017], which highlights the community of modders in relation to both users and base-game developers. Their work provides empirical evidence on the value added by modding communities.

In the article by Scacchi[Scacchi 2010], five types of modifications are elicited: user interface customizations, game conversions, machinima and art mods, game computer customization, and game console hacking. Full game conversion mods are classified as such because this form of modification incorporates all other types of created content, such as levels, maps, audio changes, skins, and others. For instance, Minecraft is well-known among young audiences, and the study by Kersanszki et al.[Kersanszki et al. 2024] utilized 50 mods in the game to perform game conversions aimed at educating about renewable energy.

One of the significant impacts of total conversion modifications, in particular, has been their capacity not only to transform the mechanics and aesthetics of games but also to change the genres to which these games belong, generating what we define as genre-bending mods. An example is DOTA, which originated from Warcraft as a real-time strategy (RTS) game but evolved into a multiplayer online battle arena (MOBA).

This concept of change can be analyzed through semiotic principles in games to understand how the object reinterprets the structure of the base game. Created by [de Souza 2017], the authors contributed to the development of game semiosis, aiming for a more intrinsic understanding of the object of study.

In a different paradigm, Freitas and Silva [Freitas e da Silva 2020] introduce the concept of Environmental Storytelling, where the narrative of a game is promoted through textures, objects, and sounds in level design. This occurs when these elements generate a symbolic representation for the player that may differ from what was intended by the developer.

In this paper, we will focus on analyzing total conversion modifications of the game DOOM, which are interventions aimed at altering the player’s experience within the game. With an active community still producing adaptations that communicate with the current state of the community/world and draw on concepts from the gaming industry, the objective of the article is to examine the contrast between recent mod productions. Specifically, we will employ methodologies that assess concepts such as semiotic analysis and Environmental Storytelling to determine what contributions these mods can offer to developers and industry.

¹half-life.fandom.com/wiki/Half-Life

²dota.fandom.com/wiki/Defense_of_the_Ancients

³steamdb.info/charts

2. Methodology

Within the semiotic methodologies explored in the systematic review by [de Deus e dos Santos 2016], the authors chose to follow the concepts of [de Souza 2017], considering that the author understands games as phenomenological semblances for the immediate understanding of media. However, the mods presented will not be analyzed as deeply as in Souza's original work, since this research focuses more on a comparison between Doom and its mods than on an in-depth recognition of the game's signs — that is, the goal is to immediately identify which signs have been modified.

The methodology adopts the following triad of analysis, according to [de Souza 2017]: the sign in itself, the contextualization of the aesthetic sign, and the specificity of the interpretant. Furthermore, the authors broke down each of these concepts into three internal categories to better support the understanding of the analyses conducted on the games⁴. Finally, the researchers devised a guide detailing how each step should be executed, in order to streamline the progression of the semiotic analysis⁵.

In addition to semiotic concepts, narrative plays a key role in understanding the modifications made to Doom. This is because mods bring such profound changes to the game environment that they end up altering how the story itself is perceived. Therefore, the generalized method proposed by [Silva et al. 2022] will be applied to investigate how thematic modifications can influence the setting and, consequently, the game's narrative, through the use of guiding questions⁶.

From a methodological perspective, this work presents a combined use of the techniques proposed by [de Souza 2017] and [Silva et al. 2022] to provide a solid foundation for the initial understanding of Doom mods.

3. Doom

Doom is a first-person shooter (FPS) game released in 1993, developed by Id Software. The player controls a space marine who faces hordes and hordes of demonic creatures on Mars, inside a research facility. The game is known for its intense and frenetic action, with simple and effective mechanics and smooth gameplay that emphasizes direct combat.

Visual and sound symbols reinforce the sense of urgency, tension, and horror, requiring the player to stay alert. The enemy design references classic demons, reinforcing the infernal theme of the game. Dark environments, narrow corridors, and the use of a red and black color palette contribute to the constant sense of danger. Metallic sounds, roars, and a heavy soundtrack help guide the player's emotional state and reactions, even with little dialogue or explicit narration.

The narrative is built indirectly, relying mainly on the environment and visual clues scattered throughout the setting. The game bets on emergent storytelling, where the player must explore and progress to understand the story's context, instead of relying on cutscenes or traditional dialogues. This puts the player at the center of the action, making them intuitively aware of what is happening.

⁴<https://doi.org/10.5281/zenodo.15253525>

⁵<https://doi.org/10.5281/zenodo.15253461>

⁶<https://doi.org/10.5281/zenodo.15253711>

4. Mods

4.1. Zombies ate my neighbors

In 1993, a popular 2D game was released by Konami, *Zombies Ate My Neighbors*, combining elements of horror and humor, with a narrative focus on teenagers who must save the world. In this context, in 2019, a mod (Figure 1) was created that reimagined the story of the original game using the gameplay structure of Doom, allowing the creation of a new interactive medium.

From a semiotic perspective, the use of bright and vivid colours in this combination allows for a reinterpretation of signs that emphasize a positive emotional state, in contrast to the grotesque concepts present in Doom. Furthermore, the theme revolves around saving local residents through visual and auditory cues from the neighbors, with screens indicating the beginning and end of each stage — unlike the original Doom, in which all stages occur consecutively by following the trail of monsters. Thus, the signs are reconfigured to evoke feelings of comedy and nostalgia in the player, as this is a game rooted in satirical horror.

From a storytelling perspective, the game evokes a nostalgic setting, where the player must manipulate everyday items to combat enemies, which themselves carry a satirical and nostalgic tone. Moreover, the new HUD contributes to this atmosphere by referencing the classic Konami game. Consequently, even without direct references to specific objectives, the environment constructs a narrative around a hero tasked with saving local residents — unlike Doom, where the setting generates a storyline centered on relentless slaughter.

4.2. Aliens:Erradication

The mod bases its gameplay on the tense atmosphere of the Alien movie and game franchise, incorporating these elements into its design. Additionally, other characteristics of the franchise—especially from the games—include the Survival Horror genre, where the enemy is overwhelmingly powerful, making direct confrontation difficult. As a result, the protagonist must often flee and hide in order to progress through the game.

In Alien Eradication (Figure 2), it's not just the visual aspect of a place filled with danger and traces of aliens and hostile androids, or the claustrophobic design and oppressive atmosphere that offer a unique experience. The use of items like the motion detection system also introduces a new gameplay mechanic for the player. The sounds of enemies approaching help guide players through the correct paths, while they deal with challenges such as locked doors, dead ends, or paths that need to be unlocked. These are key elements, alongside the text-based storytelling, that guide the player.

This style of gameplay supports the narrative of how dangerous the protagonist's situation is. He cannot attack frantically as in the original DOOM game; instead, he must be smarter and more cautious—avoiding enemies at times and fleeing at others to progress, much like in the Alien franchise. This mechanic characterizes the core of this game genre.

4.3. Castlevania: Simon's Destiny

Based on the successful franchise, Castlevania is a gothic-style adventure and horror game series that tells the story of a vampire hunter in a medieval era who hunts down Count



Figure 1. (a)



Figure 2. (b)



Figure 3. (c)

Figure 4. Mods: (a)Zombies ate my neighbors, (b)Aliens:Erradication and (c)Castlevania: Simon's Destiny. Source: moddb

Dracula and other famous monsters such as werewolves, zombies, and demons. The game belongs to the Metroidvania and platforming genres, where exploring maps is essential to progress in the story. Additionally, there is a wide variety of weapons, magic, armor, and accessories that offer multiple combat styles against enemies.

The mod (Figure 3) incorporates these aspects, starting with the replacement of technological weapons with medieval weapons and magic, the exploratory gameplay to move the story forward, and the platforming game style. These features provide the player with a gameplay experience that includes various types of combat, similar to the original franchise, allowing for fast-paced battles against enemies like in the original DOOM game.

The narrative is presented through the mod's exploratory context—the player needs to explore the maps for the story to unfold. There is no direct storytelling; the player is the driving force behind the progress. With each challenge overcome and each monster defeated, the story is told through the game's genre. There is minimal text or direct objectives, aside from locked doors, blocked paths, or hidden passages.

5. Final considerations

Following the semiotic analysis based on the steps proposed by [de Souza 2017] and the environmental storytelling methodology [Silva et al. 2022], it was observed that large-scale mods are often based on pre-existing interactive or non-interactive media. These serve to intrinsically alter the signs within the original work Doom, resulting in the creation of a new media product. Furthermore, horror — despite taking on different meanings in the three mods analysed — remains the central setting through which a significant transformation of the game occurs. Despite these changes, traces of the original Doom are still noticeable, whether through FPS elements or the presence of the game's characteristic HUD.

In the future, researchers intend to develop a taxonomy of existing types of mods, aiming not only to classify modded games within the context of Doom, but also to extend this classification to other games that feature modifications, whether they be of small or large scale.

References

- Champion, E. (2024). Game Mods: Design, Theory and Criticism. *Journal contribution*.
- de Deus, E. R. e dos Santos, H. J. (2016). As abordagens semióticas das interações lúdicas dos jogos digitais: um estado da arte. In *Anais do XXXIX Congresso Brasileiro de*

- Ciências da Comunicação (Intercom)*, São Paulo, SP. Intercom – Sociedade Brasileira de Estudos Interdisciplinares da Comunicação. Realizado de 05 a 09 de setembro de 2016.
- de Souza, A. A. (2017). Os games enquanto jornadas fenomenológicas: a experiência estética semiótica nos jogos digitais. Dissertação de mestrado, Pontifícia Universidade Católica de São Paulo, São Paulo. Programa de Estudos Pós-Graduados em Comunicação e Semiótica, Acesso Aberto.
- Freitas, L. M. e da Silva, B. C. (2020). A narrativa por meio do ambiente. *Proceedings of the XIX SBGames*, pages 1264–1267.
- Kersanszki, T., Márton, Z., Fenyvesi, K., Lavicza, Z., e Holik, I. (2024). Minecraft in steam education: applying game-based learning to renewable energy. *ID&A Interaction Design & Architecture (s)*, (60).
- Kretzschmar, M. e Stanfill, M. (2019). Mods as lightning rods: A typology of video game mods, intellectual property, and social benefit/harm. *Social & Legal Studies*, 28(4):517–536.
- Poretski, L. e Arazy, O. (2017). Placing value on community co-creations: A study of a video game 'modding' community. In *Proceedings of the 2017 ACM conference on computer supported cooperative work and social computing*, pages 480–491.
- Scacchi, W. (2010). Computer game mods, modders, modding, and the mod scene. *First Monday*, 15.
- Silva, B., Freitas, L., Maia, J., e Carvalho, W. (2022). Analisando a narrativa de ambiente transumana em jogo. In *Anais Estendidos do XXI Simpósio Brasileiro de Jogos e Entretenimento Digital*, pages 89–98, Porto Alegre, RS, Brasil. SBC.