

# Design and Orchestration: Dynamic Player Modeling for Immersive Horror Experiences

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**Abstract. Introduction:** *Dynamic Content Adaptation has evolved towards Content Orchestration, a novel sub-field that coordinates multiple game elements simultaneously. For this orchestration to be effective, the system must understand the player's profile. Objective:* This work proposes an initial investigation into the design of the immersive horror game 'Like It', using the Five Player Traits model by Tondello et al. to adapt orchestrated content in real time. **Methodology:** An analysis of the game was conducted using the model by Tondello et al., subdivided into the dimensions of Aesthetic, Narrative, Goal, Social, and Challenge, as an analytical lens. The methodology was based on the application of Tondello's framework as a structured approach to investigate and evaluate the game experience. **Expected Results:** It is expected that the model identifies player preferences across five dimensions (Aesthetic, Narrative, Goal, Social, and Challenge) and adjusts game elements to maintain atmospheric tension and engagement.

**Keywords** *Procedural Content Generation, Player Traits, Player Modeling, Content Orchestration, Horror Games.*

## 1. Introduction

In immersive horror games, dynamically adjusting environmental variables is crucial for maintaining player engagement and emotional impact. Recent studies demonstrate that the real-time orchestration of visual and sound effects directly influences the player's physiological arousal and perceived tension [Graja et al. 2020]. In this context, Content Orchestration emerges as an essential approach that coordinates the control of multiple game elements, such as rules, levels, and narrative, to ensure consistency and engagement. In immersive horror games, this orchestration is particularly critical, as an imbalanced tension can result in experiences that are either excessively difficult or overly predictable. As highlighted by Pereira et al. [Pereira et al. 2025], current research still lacks integration between static player profiling and dynamic behavioral modeling.

To address this gap, player modeling frameworks such as the one proposed in [Tondello et al. 2019] categorize players into five motivational orientations: aesthetics, narrative, objective, social, and challenge. These profiles can be further refined

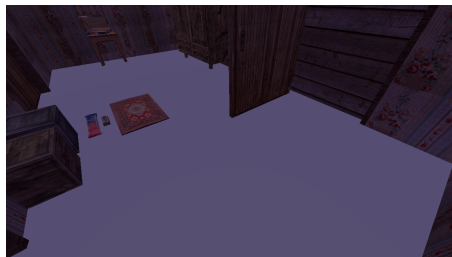
through behavioral data collected during gameplay, enabling validation between predicted preferences and observed actions. Based on this foundation, this work proposes an initial investigation into player profiling and validation, aiming to support systems capable of dynamically adapting game elements such as resource distribution, AI aggression, and environmental configuration.

Beyond technical implementation, this research also explores the intersection between player psychology and environmental aesthetics. By analyzing how visual cues—such as lighting, texture degradation, and spatial composition—influence different player profiles, content orchestration can be reframed as a form of “Game Director,” capable of shaping not only gameplay mechanics but also the emotional and visual experience of the player.

## 2. Background

### 2.1. The Game Like It and The Orchestration Proposal

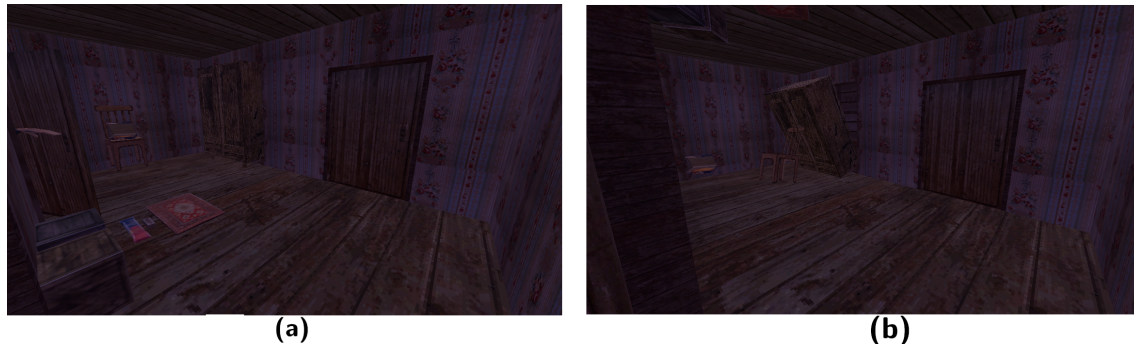
The game *Like It* is a 3D immersive horror experience that adopts a low-poly visual style inspired by the 32-bit era (PlayStation 1 aesthetics), as shown in Figure 1. The narrative follows a protagonist trapped in a recursive domestic environment who experiences increasingly intense hallucinations within a looping scenario. Unlike traditional survival horror games, the focus is on psychological tension and puzzle-solving rather than combat or resource management, aiming to destabilize the player’s perception and enhance feelings of unease and disorientation. Furthermore, the low-poly aesthetic is a deliberate artistic choice aligned with “low-fidelity horror.” As argued in [Duleba 2021], reduced visual fidelity encourages players to mentally complete missing information, increasing imagination, emotional response, and immersion.



**Figure 1. Image of the main room on a house loop**

To maintain immersion, this work adopts the Five Player Traits model [Tondello et al. 2019] as a basis for content orchestration, based on the hypothesis that horror effectiveness depends on players’ motivational traits. For example, players with high Aesthetic Orientation are more sensitive to visual distortions such as environmental disorder and “dirt” aesthetics (Figure 3), which enhance feelings of uncanniness and psychological horror, as discussed in [Duleba 2021].

The proposed approach introduces a profile-based orchestration system combining content tagging and dynamic adaptation, where procedural elements are weighted according to the five traits and adjusted in real time based on player behavior, increasing the likelihood of content aligned with dominant tendencies, such as challenge-oriented features when a strong Challenge inclination is detected.



**Figure 2. In Figure (a), there is no adaptation. In Figure (b), an adaptation of the aesthetic profile is observed.**

## 2.2. Five traits model

This personalization of game experience requires robust models to represent player preferences. Historically, models such as Yee's Motivations [Yee 2006] classified players into discrete "types." However, as argued in [Tondello et al. 2019], players often exhibit overlapping interests that static categories fail to capture. To address this, the Five Player Traits (5PT) model was developed based on trait theory, suggesting that player preferences are composed of a multidimensional spectrum of five independent traits.

The model is operationalized through a 25-item scale evaluating five dimensions: Aesthetic Orientation (interest in sensory experiences and atmosphere susceptibility [Duleba 2021]); Narrative Orientation (preference for stories and character development); Goal Orientation (focus on clear objectives and completionism); Social Orientation (desire for interaction with NPCs or players); and Challenge Orientation (attraction to high difficulty and skill mastery).

## 3. Methodology

The methodology of this work is divided into a theoretical-analytical phase and a prospective modeling phase. The object of study is *Like It*, an immersive horror game developed by the authors, which serves as a controlled environment for testing player-centric orchestration.

### 3.1. Design Extraction

The first stage consists of a systematic investigation of the game's design elements through the lens of the Five Player Traits (5PT) model [Tondello et al. 2019]. For each of the five dimensions (Aesthetics, Narrative, Goal, Social, and Challenge), we performed a "Design Extraction" from the project's Game Design Document (GDD).

This process involved identifying which specific game assets, mechanics, and environmental triggers correspond to each trait. For example, in the Aesthetic dimension, we collected elements such as texture filters and lighting presets; in the Challenge dimension, we identified AI aggression parameters and resource spawn rates.

### 3.2. Orchestration Possibilities

Once the elements were collected, we conducted an analysis of Orchestration Possibilities. This involved mapping how each identified element could be modified in real-time without breaking the game's "Flow" or core narrative.

We investigated the "Modulation Range" of these elements — determining, for instance, how much the environment can distort before it becomes unnavigable. This analytical step is crucial because it transforms static design choices into "Actionable Variables" for the procedural engine.

### 3.3. System Integration: The Orchestration Model

The insights derived from the analysis in Section 4 (Case Study) form the basis for the implementation of a Dynamic Orchestration Engine. This model is designed to use the consistency between static profiling (surveys) and implicit behavior (telemetry) to choose which "Design Modifications" to trigger.

The intended model, as described in this work, functions as a feedback loop where the analysis of player traits dictates the probability of generating specific environmental tags. By using the qualitative findings from our case study, the system performs "Style-Switching" in the game world, ensuring that the horror experience is tailored to the player's psychological profile.

## 4. Case Study: "Like It" Design

The design of *Like It* serves as a case study for content orchestration, where its dimensions were analyzed using Tondello's framework of player motivational dimensions, enabling a structured evaluation of how game elements influence engagement and emotional response:

In *Like It*, the primary goal is clearly defined: escape the recursive house loop by solving puzzles and interacting with the environment. Currently, the "Goal" mechanics are static, meaning every player faces the same sequence of objectives regardless of their playstyle or efficiency in completing tasks. The perception here is that "Goal-oriented" players may find the slow pacing of psychological horror tedious if the progress markers aren't frequent enough, the orchestrator can modify puzzle structure, introducing "Sub-objectives" (e.g., finding optional keys to unlock lore or shortcuts) to satisfy the need for completionism.

The aesthetic choices are intentionally aligned with the psychological threshold of the player, utilizing specific design pillars to facilitate dynamic adaptation. The current visual design of *Like It* relies heavily on the "Low-fidelity" horror of the PSX era, an analysis of its visual design reveals a clear focus on an oppressive atmosphere achieved through desaturated palettes, pixelated textures, and "dirty realism". The range of elements available to manipulation in this area goes from visual elements like the illumination of a room to auditive noise. For example: for players with high *Aesthetic Orientation*, the system reduces color depth to create "visual noise," simulating a sensory overload.

At first glance, *Like It* is a solitary, single-player experience, which seems to neglect the "Social" trait of Tondello's model. The game narrative focuses on the protagonist's isolation and his "stalker" creature. However, the social trait in single-player horror is often manifested through "Parasocial Interaction" [Elvery 2022] or the presence of "Others" through environmental remnants like letters, voices, or the behavior of the antagonist. We perceive that the stalker is the primary "social" agent. Its behavior dictates the player's sense of being watched or pursued. For players with high Social

Orientation, the horror comes from the feeling of a malevolent "intelligence" reacting to them. Currently, the creature doesn't hurt the player, which might reduce the social tension for those who seek meaningful interaction with the game's entities. Orchestration can change this by modulating the "Communicative Presence" of the house. For high-social players, the system can increase the frequency of auditory hallucinations (whispers calling the protagonist's name) or change the content of found documents to be more personal and direct.

The narrative of *Like It* is centered on guilt and hallucinations. The story is told through the environment and fragmented documents, following a "show, don't tell" approach. Currently, the narrative weight of objects is fixed, meaning everyone sees the same "story beats" at the same time. Analysis suggests that players with high Narrative Orientation are the most likely to read every document and inspect every photo. If the narrative delivery is too sparse, these players lose immersion. The orchestrator can track this by measuring "Object Inspection Time." If a player lingers on a family photo, the system recognizes a narrative-driven behavior that should be rewarded with deeper lore. Changes can be implemented by dynamically populating the house with "Lore-Heavy" items. For narrative-focused players, the orchestrator can replace generic trash with specific mementos that trigger localized hallucinations or voice-overs. If the player shows low narrative interest, the system can streamline the story, providing only the essential plot points through visual cues rather than long text documents, ensuring the pacing remains fast-paced.

The challenge in *Like It* is not derived from combat, but from navigation, puzzle-solving and managing the tension of the stalker's presence. In the game, the creature would not kill the player, which shifts the challenge from "Survival" to "Psychological Endurance". At the present, the difficulty is static, which can lead to boredom for veteran horror players or overwhelming stress for newcomers. We perceive that the "Challenge" trait is linked to the player's tolerance for resource scarcity and AI aggression, Telemetry can identify high-challenge players by their efficiency in avoiding the stalker or solving puzzles on the first attempt. The orchestrator can intervene by modifying the "Friction" of the experience. For high-challenge profiles, the system can decrease flashlight battery life, increase stalker movement speed or add "red herring" items to puzzles.

## 5. Expected Results and Future Works

It is expected that the integration between the trait model from [Tondello et al. 2019] and the dynamic modeling allows the *Like It* game orchestrator to present a precision higher than static systems. The main expected result is the maintenance of the "Flow State" and psychological tension prolongation, ensuring a custom experience according to the profiles defined by [Tondello et al. 2019] and [Pereira et al. 2025] orchestration techniques. Furthermore, to validate these outcomes, a post-gameplay questionnaire is applied to understand the game's impact on the player's emotional state and immersion.

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