M7.450 - Design of user experience and interfaces

Types and categorizations of Choo Choo Charles' interface elements

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Index

1. Game introduction and description

1.1. Game Overview

Choo-Choo Charles is a horror adventure game developed and published by Two Star Games, the studio of a solo-developer. Released in 2022, this indie title quickly gained attention for its funny yet terrifying premise. Set in an isolated island town, players must navigate a haunted landscape and survive against a monstrous train with spider-like legs named Charles (inspired by memes about a creepy version of Thomas the Tank Engine). The player's objective is to repair and upgrade their own train, used both as a means of escape and a weapon against Charles, adding a thrilling layer of strategy and resource management to the horror experience.

1.2. Genre

Choo-Choo Charles falls within the survival horror genre, blending elements of adventure, strategy, and action. The gameplay focuses on an open-world environment where the player moves between various locations on their train, encountering NPCs, accepting quests, gathering resources and upgrading their vehicle. The game uses a first-person perspective, intensifying the immersion as players repair, reload, and face Charles in close encounters. The game, developed with Unreal Engine 4, is driven by eerie visuals and sound design, which creates an uncanny atmosphere that aligns it closely with psychological horror games while incorporating unique mechanics in its gameplay through the train elements.

1.3. Why Choo-Choo Charles

Choo-Choo Charles is a straightforward first-person game that generally adheres to common UI conventions, offering a simple and familiar interface for players. However, the train mechanics introduce interesting diegetic elements that blend the interface with the game world, enhancing immersion and atmosphere. Because it has been developed by just one person, the game understandably has some areas where the UI design could be refined, given the limited resources behind its creation. This analysis will therefore identify potential improvements that can enhance the user experience, especially by suggesting further diegetic integration for key gameplay elements, creating a more cohesive and immersive design.

2. User interface elements classification

2.1. Diegetic UI

Diegetic UI elements are fully integrated within the game world, making them visible and interactive for both the player and the character. The first example of this in *Choo Choo Charles* is the rail switcher (Exhibit 5.1.1), a physical mechanism in the rails circuit that players can use to change tracks. It consists of a lever that the player can use to switch the direction that the train will take. This is also indicated with two red arrow signs, one lighted and the other not, to know in what position is already the switcher settled. This leaves to the player's choice if they want to continue the already settled direction or if, on the contrary, they want to stop the train and click the lever. An interesting note on this element is that the map does not show the direction of the switcher, so the player must be aware of the game world and look for these signs from the locomotive insides when moving around.

The, as I have baptized, train management elements (Exhibit 5.1.2), are in-game world objects that serve for upgrading the train, switching fire guns and painting the locomotive with different colors. These interactive objects present an instant change on the train statistics and aesthetics when clicked.

The train speed and direction controls (Exhibit 5.1.3) consist of a speed indicator, a digital pressure gauge that does not indicate any real status of the train (meaning it is there just for aesthetics) and three different levers: one for advance, one for backwards and one for stopping. Just one can be active at a time, and the train moves full speed when clicked.

And finally, I consider the gun aiming as a diegetic UI as well (Exhibit 5.1.4), because there is no meta UI crosshair present in the HUD. To know if the player has hit the target (Charles) this one bleeds or gets in fire when impacted. The health bar also decreases, but this is a non-diegetic UI element.

2.2. Meta UI

Meta UI elements are visually presented in the HUD, but still relate to the game's theme and narrative without being part of the physical game world. An example is the train upgrades blueprint (Exhibit 5.2.1), which allows players to view potential upgrades, such as speed or armor enhancements.

While technically a real world blueprint is not interactive, in the game's world cohesion is used to invest the player's scrap pieces to improve the train automatically. Therefore, this blueprint is an abstraction to give to the player the required agency and information through a menu, supporting gameplay without breaking immersion entirely.

2.3. Spatial UI

Spatial UI elements exist within the 3D game space, but are not visible to the character. They act as guides or markers for the player without pulling them out of the environment.

The first examples of this in *Choo Choo Charles* include interactive items (Exhibit 5.3.1) and interactive characters (Exhibit 5.3.2). These elements, such as tools, notes, levers and NPCs, are overlaid with a light-glowing effect, helping the player recognize interactive objects of interest. Although in my honest opinion this system lacks of usability because in many contexts it is not enough visible.

Another example of spatial UI elements would be this game's waypoints (Exhibit 5.3.3). Waypoints appear as X icons within the 3D environment once set by the player in the map, guiding towards specific objectives or destinations instead of using a compass. These spatial cues help players navigate and interact without needing to pause the game opening the map and breaking away from the game's immersive world

2.4. Non-diegetic UI

Non-diegetic UI elements are entirely outside the game's world, appearing only to the player on the HUD or separate screens. In *Choo Choo Charles*, the inventory UI (Exhibit 5.4.1), map UI (Exhibit 5.4.2), and inventory updates (Exhibit 5.4.3) are examples of key non-diegetic elements.

The inventory UI provides a very simple separated menu in order to show players the already collected resources and items. The map UI shows a detailed overview of routes and points of interest, helping players strategize and plan their next steps. And finally, inventory updates are displayed briefly on the HUD to inform the player of new items or resources collected. These non-diegetic elements are designed solely for the player's convenience, detached from the character's world, ensuring quick and efficient access to information that supports gameplay decisions.

3. Improvement diegetic proposals

First to say, this game already puts remarkable effort in making the UI elements as diegetic and interactive as possible, but in some aspects it takes the short and easiest path with not so resolutive interfaces (understandable given the context of the development, though). So here is a proposal of 4 UI elements that could be made diegetic in order to improve the game immersive experience.

3.1. Train Upgrade System Improvement

Problem
The current train upgrade system relies on a blueprint displayed as a meta UI, which distances players from a more immersive interaction with the train. Players must navigate a menu to upgrade various parts rather than interacting directly with the train itself, diminishing the sense of physical engagement with the upgrades.

Context
In games involving vehicle or base customization, directly interacting with objects to upgrade them can enhance immersion by integrating the mechanic into the game world. The proposed change aims to provide a more realistic interaction style, akin to a "build mode" where players interact directly with train components to make improvements.

Forces/Influences
● Players desire a hands-on experience with upgrades, encouraging exploration and interaction.
● Direct upgrades align with the game's survival and customization theme.
● A "build mode" style enhances realism, making upgrades feel more embedded in the game world.

Solution
Create a "build mode" where players can upgrade the train by interacting with specific parts directly. For example, players could approach the train's engine, armor, or weapon areas and apply upgrades with contextual prompts or animations showing the upgrade process.

Justification
This improvement would result in a stronger player connection to the train by making upgrades more immersive and directly linked to gameplay. The increased interaction with the train makes the upgrade process feel part of the game's world, aligning with its survival atmosphere and emphasizing resource management and personalization.

Examples
● *Fortnite Creative* (Epic Games, 2018) - Players interact with structures and tools to customize environments.
● *Fallout 4* (Bethesda Game Studios, 2015) - "Workshop" mode enables players to build and modify settlements by directly interacting with components in the world.

3.2. Interactive Element Indicator

Problem
Current spatial interactive elements in the game use a light-glowing overlay that feels detached from the environment, making interactions feel artificial and less immersive. Not to mention that it also does not stand out enough to accomplish usability standards.

Context
Games with survival or immersive exploration themes often use subtle interaction cues that maintain immersion, such as "detective vision" or hand interactions like in *Dying Light*. This allows players to remain within the game's world without being interrupted by spatial UI overlays.

Forces/Influences

- Players expect subtle indicators that blend with the game's horror atmosphere.
- The existing glow overlay feels intrusive and does not match the theme.
- Visual cues integrated within the game environment enhance immersion and realism.

Solution
Replace the light-glowing overlay with a "detective vision" effect or similar, that highlights interactive elements in a way that feels more integrated. Additionally, the game could show the player's hand reaching for an object when it can be picked up, which visually connects the character's actions to the player's intention.

Justification
This approach would enhance immersion by matching the interaction cues to the game's horror atmosphere. By replacing the glowing overlay with a "detective vision" or similar mechanic, the game can create a sense of discovery without breaking immersion. The hand indicator for pickups would increase realism and make interactions feel part of the player's in-game presence.

Examples

- *Dying Light* (Techland, 2015) - Uses "survivor sense" to subtly highlight interactive objects. It also includes hand animations when doing all kind of interactions.
- *Batman: Arkham Asylum* (Rocksteady Studios, 2009) - Detective mode highlights clues and interactive elements.
- *The Last of Us Part II* (Naughty Dog, 2020) - Features hand indicators for interactive items, enhancing player connection with the world.

3.3. In-Game Waypoint Adjustment

Problem

The game's waypoints currently appear directly on the game world with a superposition, separating the player from their character's perspective (because it is not normatively mentioned that this character has this kind of HUD capabilities). Moreover, players have to edit the waypoint position going to a non-diegetic map menú and clicking around. This disrupts immersion, especially in a game that emphasizes a survival narrative where every moment counts.

Context

Survival and exploration games often incorporate diegetic navigation aids, such as a character's compass, to provide direction without forcing players into a static menu-based map. In horror or tension-filled games, this method keeps the player within the game's atmosphere and encourages exploration.

Forces/Influences

- Players desire navigation aids that integrate naturally into the character's perspective.
- Frequent map-checking disrupts the game's survival and horror atmosphere.
- A diegetic compass maintains immersion and facilitates fluid gameplay.

Solution

Replace the map-based waypoints with a diegetic compass that the character can use to orient themselves. This compass would display the player's objectives within the world itself, guiding the player subtly while preserving immersion and keeping them within the character's viewpoint.

Justification

A compass-based navigation tool would reduce reliance on the HUD map, allowing players to stay in the game world. This adjustment would foster an uninterrupted exploration experience, enhancing both immersion and the game's horror atmosphere by encouraging players to rely on in-game tools rather than external maps.

Examples

- *Red Dead Redemption 2* (Rockstar Games, 2018) - Features a diegetic compass and minimal HUD for navigation.
- *Metro Exodus* (4A Games, 2019) - Uses a diegetic compass and map to maintain immersion.
- *Far Cry 2* (Ubisoft, 2008) - Uses an in-world map and compass for navigation to immerse players in the environment.

3.4. Damage Indicators

Problem

The current system displays health bars for the train, player and enemy statuses, which provides immediate feedback but reduces tension and immersion. This approach can make encounters feel overly mechanical in a horror-themed game where uncertainty and danger are key elements.

Context

Games such as Monster Hunter use diegetic visual cues like cuts and scars to indicate damage, making the remaining health less predictable. This approach is particularly effective in horror or survival games where players rely on visual indicators to gauge damage, adding suspense to encounters.

Forces/Influences

- Players expect heightened suspense and uncertainty in a horror atmosphere.
- Health bars offer too much predictability, reducing the tension of survival encounters.
- Visual damage cues aligned with in-game models can heighten the player's immersion and fear.

Solution

Replace health bars with visual indicators of damage on both the train and enemies. For example, as the train takes hits, metal parts could dent or crack, and Charles might show signs of wounds or weakening. This change aligns with the game's horror setting, adding a layer of unpredictability and immersion.

Justification

It is important to take into account that using visual damage indicators would increase the project's artistic demands, as it would require creating more detailed damage models and effects. However, this change enhances the terror atmosphere by making the game's health system less predictable, keeping players on edge and heightening the overall horror experience.

Examples

- *Monster Hunter: World* (Capcom, 2018) - Monsters show progressive physical damage instead of health bars.
- *Resident Evil 2 Remake* (Capcom, 2019) - Visual damage cues replace traditional health bars, adding to suspense.
- *Shadow of the Colossus* (Team Ico, 2005) - Displays wear and tear on bosses, emphasizing immersion and uncertainty during battles.

4. Visual prototypes

4.1. Train Upgrade System Improvement

The upgrading system could be implemented leaving the player activate a builder mode[1] with a HUD overlay that shows the available upgrades when the player points a part of the train.

Original picture

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[1] Hands generated with Dall-E 3: DALL·E 3. (n.d.). OpenAI. https://openai.com/index/dall-e-3/

4.2. Interactive Element Indicator

Leaving the player the decision of entering a "detective mode" would enable a black and white overlay with the interactive elements highlighted and a no-diegetic UI showing the button that triggers the action.

4.3. In-Game Waypoint Adjustment

The "X" waypoint would be replaced with a compass that the player's character would show on camera when a button pressed.

4.4. Damage Indicators

A possible damage indicator on Charles for example could be the dismemberment of limbs.

Original picture

As you can see, the health bar would be then hided to the player.

5. Exhibit

5.1. Diegetic UI

5.1.1. Rail switcher

5.1.2. Train management elements

5.1.3. Train controls

5.1.4. Gun aiming

5.2. Meta UI

5.2.1. Train upgrades blueprint

5.3. Spatial UI

5.3.1. Interactive element

5.3.2. Interactive character

5.3.3. In game waypoints
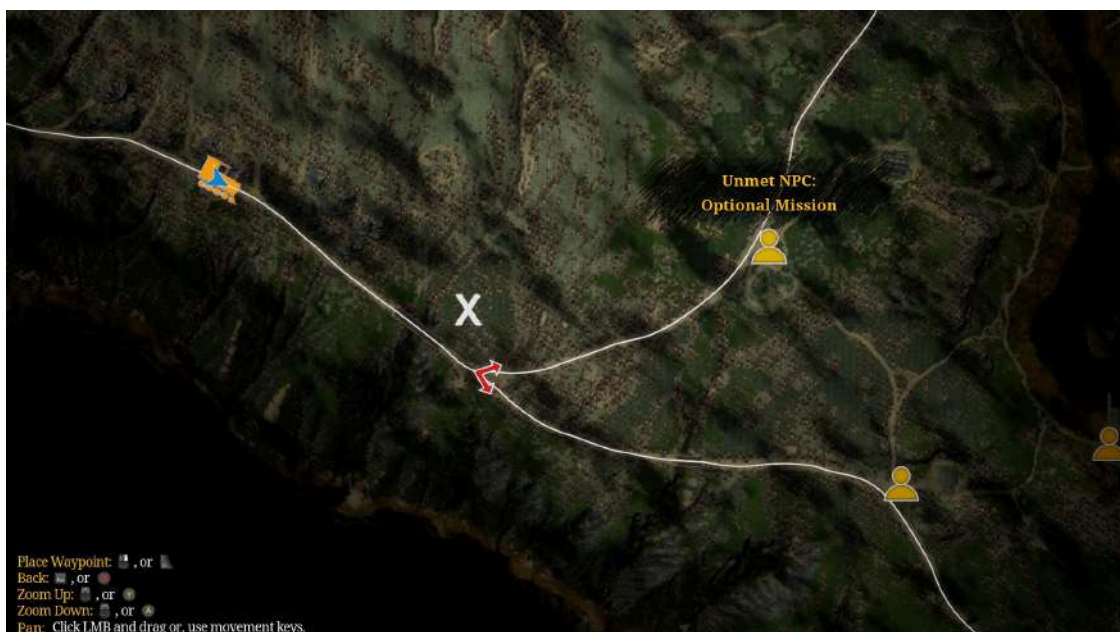
5.4. Non-diegetic UI

5.4.1. Inentory UI

5.4.2. Map UI

5.4.3. Inventory update